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A **PESQUISA VETERINÁRIA BRASILEIRA** (<https://www.pvb.com.br>), (Título abreviado: *Pesq. Vet. Bras.* Versão Impressa ISSN 0100-736X, Versão Online ISSN 1678-5150) publica artigos científicos com foco em patologia no seu sentido amplo, nas áreas: Doenças de Animais de Produção (LD), Doenças de Pequenos Animais (SA) e Medicina de Animais Selvagens (WM).

A **Pesq. Vet. Bras.** é um periódico brasileiro de abrangência internacional, escrito em língua inglesa, com acesso aberto que publica pesquisas revisadas por pares com base na sua consistência, originalidade, importância, interesse interdisciplinar, atualidade, acessibilidade e conclusões pertinentes.

Pesq. Vet. Bras. é publicada desde 1959. Inicialmente sob o título “Arquivos do Instituto de Biologia Animal”, possui três fascículos (1959-1961) editados pelo Instituto de Biologia Animal, órgão extinto vinculado ao Ministério de Agricultura e Pecuária. Foi descontinuada entre 1962 e 1965, porém ressurgiu em 1966 como a Série Veterinária do periódico “Pesquisa Agropecuária Brasileira” editada de 1966 a 1976 pelo antigo Departamento Nacional de Pesquisa e Experimentação Agropecuária (DNPEA), hoje Empresa Brasileira de Pesquisa Agropecuária (Embrapa), com 11 fascículos publicados. A revista foi novamente descontinuada entre os anos de 1977 e 1980. Após a fundação do Colégio Brasileiro de Patologia Animal (CBPA), em 1978, o periódico retornou em 1981, como publicação oficial editada pelo CBPA sob o atual título “Pesquisa Veterinária Brasileira” e está sendo publicada ininterruptamente desde então.

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A **Pesq. Vet. Bras.** publica assuntos sobre doenças em animais. O periódico detalha as investigações diagnósticas de doenças naturais (emergentes, reemergentes ou enzoóticas) e experimentais; especialmente que ocorrem em território brasileiro. A submissão de artigos sobre doenças de animais em outros países, bem como tópicos sobre doenças animais relacionados com saúde pública é encorajada. Patologia em seu sentido amplo é o carro-chefe da revista, incluindo diagnóstico laboratorial, epidemiologia, clínica, e outras áreas que se relacionam diretamente com a Saúde Única na qual a ciência laboratorial é utilizada como base de diagnósticos de doenças em programas de saúde animal. Os volumes da *Pesq. Vet. Bras.* são anuais, publicados em fluxo contínuo, divididos em três áreas: Doenças de Animais de Produção (LD), Doenças de Pequenos Animais (SA) e Medicina de Animais Selvagens (WM). Os trabalhos aceitos são publicados como Artigos Originais, Artigos de Revisão ou Tópicos de Interesse Geral; Relatos de Casos são aceitos apenas na área WM. As publicações visam um público que consiste em veterinários, patologistas, equipes de laboratório de diagnóstico veterinário, patologistas toxicológicos, patologistas comparativos, pesquisadores de patologia médica, cientistas ambientais e outros envolvidos em diagnóstico veterinário e pesquisas com animais domésticos e selvagens.

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I. Colégio Brasileiro de Patologia Animal.

Figura da capa: Depicting a Boxer's aging arc where senility marks the peak period for sarcomas. Highlighting breed susceptibility and infiltrative behavior, the art portrays the clinical path toward a late-life mesenchymal neoplasm diagnosis. (Karen Barcellos Silva, Andresa Guimarães, p. 122).

**IX SAMVET - Semana Acadêmica de Pós-
graduação em Medicina Veterinária
&
III SIMVET - Simpósio Internacional
de Tópicos Avançados em Medicina
Veterinária**

17 a 22 de agosto de 2026
Seropédica, RJ, Brasil

HISTÓRICO DOS EVENTOS

O Programa de Pós-Graduação em Medicina Veterinária – Patologia e Ciências Clínicas da Universidade Federal Rural do Rio de Janeiro (PPGMV/UFRRJ) tradicionalmente promove eventos, palestras, cursos, workshops e atividades científicas com o objetivo de ampliar a formação acadêmica e técnico-científica de seus discentes e promover a integração entre estudantes de graduação e pós-graduação, docentes, pesquisadores e profissionais da Medicina Veterinária.

A Semana Acadêmica da Pós-Graduação em Medicina Veterinária da UFRRJ (SAMVet) teve sua primeira edição em 2012 e, desde então, consolidou-se como uma importante iniciativa de discentes, docentes e da Coordenação do PPGMV. Ao longo de suas edições, o evento vem proporcionando um espaço de atualização científica, divulgação dos trabalhos desenvolvidos no âmbito da graduação e da pós-graduação e intercâmbio de experiências entre pesquisadores de diferentes instituições.

A Mostra de Trabalhos Científicos tornou-se um dos principais eixos da SAMVet, possibilitando a apresentação e divulgação de pesquisas nas diferentes áreas da Medicina Veterinária e estimulando a formação científica dos estudantes. Posteriormente, a programação foi ampliada com a incorporação da Mostra Cultural, fortalecendo a integração entre ciência, arte, cultura e divulgação científica.

Em 2022, foi criado o International Symposium on Advanced Topics in Veterinary Medicine (SIMVet), iniciativa que ampliou a internacionalização do evento e fortaleceu a interação do PPGMV/UFRRJ com pesquisadores e instituições nacionais e internacionais. Desde então, SAMVet e SIMVet vêm sendo realizados de forma integrada, reunindo palestras, apresentações científicas e atividades de formação teórica e prática em diferentes áreas da Medicina Veterinária.

Em 2024, ocorreu a edição conjunta da VIII SAMVet e do II SIMVet, em formato híbrido, reunindo cerca de 300 participantes, com a participação de palestrantes nacionais e internacionais. A programação contou com 9 workshops teórico-práticos, apresentação de 82 resumos científicos e realização da I Mostra Cultural, com trabalhos nas áreas de fotografia, poesia e artes plásticas. Os anais foram publicados como suplemento da revista Pesquisa Veterinária Brasileira, em acesso aberto.

Em 2026, a SAMVet chega à sua IX edição e o SIMVet à sua III edição, em uma edição comemorativa dos 20 anos do PPGMV/UFRRJ. O III SIMVet & IX SAMVet é realizado na Universidade Federal Rural do Rio de Janeiro, Campus Seropédica, entre 17 e 22 de agosto de 2026, reunindo estudantes de graduação e pós-graduação, docentes, pesquisadores e profissionais de diferentes instituições brasileiras e estrangeiras.

A edição de 2026 alcançou a expressiva marca de 162 trabalhos, sendo 143 trabalhos científicos e 19 trabalhos da Mostra Cultural, demonstrando o crescimento da participação acadêmica, científica e cultural e a consolidação do evento como espaço de divulgação e intercâmbio do conhecimento.

A programação científica contempla palestras, sessões de apresentação de trabalhos científicos em diferentes áreas da Medicina Veterinária, Mostra Cultural, atividades de divulgação científica e quatro workshops de formação avançada, com componentes teóricos e práticos.

Entre os workshops do III SIMVet estão Atualização em Medicina Equina – Biomecânica da Locomoção, abordando análise do movimento, claudicações, afecções podais, patologias musculares, eletromiografia e ferramentas aplicadas ao diagnóstico em equinos; Endoscopia de Trato Respiratório Superior de Pequenos Animais, com treinamento sobre indicações, equipamentos, interpretação de imagens e aplicação clínica da endoscopia; e Nefrologia e Urologia de Animais de Companhia, com conteúdos relacionados a afecções do sistema urinário, urolitíases, endoscopia urinária, técnicas minimamente invasivas e hemodiálise veterinária.

As atividades práticas incluem ainda treinamento Hands-On em Endoscopia do Trato Urinário e Hemodiálise Veterinária, ampliando a capacitação técnico-profissional dos participantes e proporcionando contato com técnicas e procedimentos especializados.

A realização de quatro workshops, associada à programação científica e cultural, reforça o caráter multidisciplinar do III SIMVet e da IX SAMVet e amplia as oportunidades de formação, atualização profissional e interação entre pesquisadores, estudantes e profissionais.

Ao longo de sua trajetória, a SAMVet e, posteriormente, o SIMVet vêm se consolidando como importantes espaços de ensino, pesquisa, extensão, internacionalização, inovação e divulgação científica. A integração entre estudantes, docentes, pesquisadores e profissionais de diferentes instituições brasileiras e estrangeiras fortalece a formação de recursos humanos, amplia redes de colaboração e reafirma o compromisso do PPGMV/UFRRJ com a excelência acadêmica e com o avanço da Medicina Veterinária.

III INTERNATIONAL SYMPOSIUM ON ADVANCED TOPICS IN VETERINARY MEDICINE – III SIMVet
IX SEMANA ACADÊMICA DA PÓS-GRADUAÇÃO EM MEDICINA VETERINÁRIA – IX SAMVet
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RESUMOS CIENTÍFICOS

ANIMAIS DE PRODUÇÃO

Neurostimulator-guided auricular locoregional block in a donkey undergoing the Zepp technique: a case report

1. Gorgita MGA, Mattos SS, Moyse JD, Salvado LG, Guimarães GP, Coelho CMM. *Pesquisa Veterinária Brasileira* 46(Supl.):6. Hospital Veterinário de Grandes Animais, Instituto de Veterinária, Universidade Federal Rural do Rio de Janeiro, Rodovia BR-465 Km 7, Seropédica, RJ 23890-000, Brasil. E-mail: marcelleegarcia@ufrj.br

This case report describes sedation combined with a neurostimulator-guided internal and external ear block for the surgical correction of auditory canal stenosis and fibrosis in an adult donkey weighing 190 kg, treated at the Large Animal Veterinary Hospital of “Universidade Federal Rural do Rio de Janeiro” (UFRRJ). The animal presented with chronic otitis media and underwent the Zepp technique, which consists of lateral resection of the vertical ear canal. The patient, classified as ASA 1 and subjected to a 12-hour fasting period, was sedated with xylazine at 1 mg/kg IV; anesthesia was induced with ketamine at 2 mg/kg combined with midazolam at 0.1 mg/kg and maintained with a triple drip solution (2 mg/mL ketamine; 50 mg/mL guaifenesin; 0.5 mg/mL xylazine). With the animal in lateral recumbency, the anatomical landmarks of the great auricular nerve and its branches were identified, located cranially and caudally to the cranial portion of the wings of the atlas, in the region of the ear base. The great auricular nerve block was performed without imaging guidance using 6 mL of 2% lidocaine. Subsequently, a complementary block was performed at the caudal base of the ear, targeting the auricular branches of the facial nerve and

the sensory contributions of the vagus nerve, located ventral to the parotid gland and cranial to the external auditory canal, between the mastoid process and the auricular cartilage. The needle was advanced parallel to the auditory canal near the parotid gland to a depth of approximately 2 cm. After identification of a motor response characterized by ear movement and contraction of adjacent facial muscles with an electrical current of 0.4 mA, 6 mL of 2% lidocaine was administered, totaling 12 mL of local anesthetic at the two injection sites. The neurostimulator-guided approach at the caudal base of the ear ensured greater precision, reducing the risk of intraparotid injection. As a result of the association of both techniques, desensitization of the branches of the great auricular nerve, the internal auricular branch, and the lateral auricular nerve was observed, allowing manipulation of the auditory canal. The procedure lasted approximately one and a half hours without complications, demonstrating the effectiveness of the anesthetic block performed, highlighting the novelty of this approach and reinforcing the importance of locoregional blocks as components of multimodal analgesia in donkeys and horses.

INDEX TERMS: Donkey, otitis, locoregional block, neurostimulator, equine anesthesia.

Comparison of thoracic-pulmonary ultrasonography and traditional semiological methods for early detection of bovine respiratory disease complex in dairy calves: a descriptive study

2. Cunha ACS, Palhano HB, Marques APL, Filho HJSB, Alves PAM, Fajardo RSL, Silva AF. *Pesquisa Veterinária Brasileira* 46(Supl.):6. Programa de Pós-Graduação em Medicina Veterinária, Instituto de Veterinária, Universidade Federal Rural do Rio de Janeiro, Rodovia BR-465 Km 7, Seropédica, RJ 23890-000, Brasil. E-mail: nnacarla.scunha@gmail.com

Respiratory diseases in cattle are a leading cause of morbidity and mortality in dairy calves during the birth, pre-weaning, and post-weaning phases, resulting in severe financial losses for farms worldwide. Due to its diverse multifactorial causes (such as housing types, overcrowding, inadequate transport, and poor management, among others) and the lack of a well-

defined diagnosis and etiology, it is also referred to as the bovine respiratory disease (BRD) complex. Thoracic ultrasonography (TUS) is a non-invasive diagnostic tool that is safe for both the operator and the patient, making it highly suitable for frequent use within routine farm operations. The main objective of this study was to evaluate TUS as an effective, safe, and highly reliable

diagnostic method for screening BRD, compared with traditional semiological methods (TSM) of diagnosis, such as auscultation, percussion, and rectal temperature measurement, across the year and under varying climatic conditions. The evaluations of the diagnostic methods were conducted by two separate groups of evaluators — one for TSM and another for TUS — with no communication between them during the screenings. These assessments were performed sequentially on 20 Girolando female calves at 7, 15, 30, 60, and 90 days of age for early detection of BRD, from September 2022 to February 2024. The animals were distributed into three age groups: G1 (7–30 days), G2 (31–60 days), and G3 (61–90 days). Pulmonary consolidation (PC) lesions were measured in centimeters and characterized by mean, standard deviation, and median. Statistical data were analyzed using GraphPad Prism 5 software. The D'Agostino & Pearson normality test was applied, followed by the unpaired Student's t-test ($p < 0.05$) to correlate the mean lesion size between two seasons (dry and rainy) from 2022 to 2023. ANOVA with Tukey's post-hoc test ($p < 0.05$) was used to compare

PC means between the annual dry and rainy periods. Additionally, sensitivity, specificity, positive and negative predictive values, and true prevalence were calculated to compare TSM and TUS. A total of 47 lung evaluations were obtained. TUS showed 91.5% (43/47) positive diagnoses for BRD and 8.5% (4/47) negative, whereas TSM detected only 31.9% (15/47) positive and 68.1% (32/47) negative. In total, TUS identified 106 PC lesions, with a higher frequency in the right and left cranial lobes (38 and 30 lesions; total = 68), followed by the right middle lobe and the caudal portion of the left cranial lobe (14 and 12), and a lower occurrence in the right and left caudal lobes (1 and 11; total = 12). The unpaired Student's t-test demonstrated that there was no statistically significant difference in the mean lesion sizes (cm) between the two seasonal climate groups (dry and rainy). The results showed a significant difference between the compared diagnostic methods, concluding that ultrasonography provided a higher detection rate for early detection of bovine respiratory disease.

INDEX TERMS: Bovine respiratory complex, pulmonary ultrasonography, dairy calves, early detection, semiology.

Silent circulation of *Toxoplasma gondii* in horses: serological evidence from southeastern Brazil

3. Fernandes TR, Almeida BG, Cavalheiro KM, Nascimento LO, Athayde-Gusmão AE, Coelho BP, Almeida FQ, Silva AF. *Pesquisa Veterinária Brasileira* 46(Supl.):7. Departamento de Medicina e Cirurgia Veterinária, Laboratório de Pesquisas em Saúde Equina, Instituto de Veterinária, Universidade Federal Rural do Rio de Janeiro, Rodovia BR-465 Km 7, Seropédica, RJ 23890-000, Brasil. E-mail: thainarodrigues@ufrj.br

Toxoplasma gondii is a zoonotic protozoan with worldwide distribution capable of infecting a wide range of animal species. Although infection by *T. gondii* is frequently subclinical in horses, neurological and ocular manifestations have been described and may negatively affect the welfare and performance of riding school horses. Considering the sanitary relevance of the infection and the scarcity of information regarding its occurrence in this population, the present study aimed to detect anti-*Toxoplasma gondii* antibodies in horses at a riding school through a serological analysis. Serum samples from 109 animals were tested using the modified agglutination test (MAT), adopting a cutoff titer of 1:25. Of the 109 samples evaluated, 9.17% (10/109) were seropositive. These findings indicate exposure of horses to *T. gondii*, demonstrating parasite circulation in this population. The presence of antibodies indicates

previous exposure to the agent but does not establish a direct association with clinical manifestations or impaired performance. Moreover, when present, clinical signs attributed to toxoplasmosis are generally nonspecific and may be confused with several other equine diseases, making it difficult to determine the actual impact of infection in these animals. The present study demonstrates the circulation of *T. gondii* among riding school horses. Further studies integrating serological, clinical, and epidemiological assessments are recommended to improve the understanding of toxoplasmosis epidemiology and its potential relevance to equine health. In addition, investigations focusing on risk factors and hygienic, sanitary, and feeding management practices are necessary to identify possible sources of exposure and support the implementation of more effective preventive measures.

INDEX TERMS: Epidemiology, equine disease, toxoplasmosis.

Kinematics and muscle function of horses' forelimbs on a treadmill

4. Nascimento LO, Tomaini MC, Moreira BC, Heck DPO, Lima LR, Marson RA, Almeida FQ. *Pesquisa Veterinária Brasileira* 46(Supl.):8. *Laboratório de Avaliação do Desempenho* de Equinos, Instituto de Veterinária, Universidade Federal Rural do Rio de Janeiro, Rodovia BR-465 Km 7, Seropédica, RJ 238900-000, Brasil. E-mail: luizaorioli@ufrj.br

Kinematics is the primary method for biomechanical assessment, and muscles are responsible for locomotion, so electromyography used in conjunction with kinematics can aid in equine biomechanics research. This study was carried out to evaluate the kinematic and surface electromyography of the equine forelimbs on a treadmill. Surface electromyography (sEMG) was performed bilaterally on the forelimb muscles in eleven Brazilian Sport Horses: extensor carpi radialis and flexor ulnaris lateralis. Disposable bipolar surface electrodes were positioned over each muscle. sEMG data were collected using the Miotool Fisio® system and processed using Miotec Suite 1.0 software. Kinematic analysis was conducted with GoPro video recordings to evaluate the carpal joint and analyzed using KINOVEA software. Stride analysis was divided into four phases: Moment 1 – full limb stance; Moment 2 – propulsion; Moment 3 – swing phase; and Moment 4 – ground contact. Data were tested for normality with the Shapiro-Wilk test and homogeneity of variances with the Levene test. Data were analyzed using split-plot repeated-measures ANOVA (gait and stride phase as fixed effects, horse as random effect), followed by Tukey's post hoc test ($p < 0.05$) with Kenward-Roger-adjusted denominator degrees of freedom. Pearson's correlation assessed EMG-kinematic associations for each gait and phase ($|r| \geq 0.30$). Kinematic analysis revealed that the carpal joint angle differed among stride phases at both the walk and trot ($p < 0.001$). The greatest carpal flexion occurred during the swing phase, with a mean angle of $120.7^\circ \pm 7.8^\circ$ at the walk and $101.5^\circ \pm 8.2^\circ$ at the trot, the latter being

significantly smaller, indicating greater flexion during trotting. During full stance and ground contact, joint angles approached $176\text{--}177^\circ$, demonstrating carpal extension during weight-bearing. sEMG activity of the mm. extensor carpi radialis increased by approximately 58%, from $15.86 \pm 2.89 \mu\text{V}$ at the walk to $25.09 \pm 6.02 \mu\text{V}$ at the trot, while mm. flexor ulnaris lateralis activity increased from $49.47 \pm 14.53 \mu\text{V}$ to $83.63 \pm 33.60 \mu\text{V}$, with no differences observed between the right and left limbs. During walking, the mm. extensor carpi radialis showed a positive correlation with the carpal angle during swing phase ($r = 0.45$), indicating that greater muscle recruitment coincided with larger carpal angles during swing phase, consistent with its extensor function. The mm. flexor ulnaris lateralis showed negative correlations during propulsion and ground contact phases ($r = -0.38$; $r = -0.39$), indicating increased activity during carpal flexion in these phases. At the trot, the mm. flexor ulnaris lateralis showed positive correlations during swing and ground contact phases ($r = 0.47$; $r = 0.60$), indicating that muscle recruitment progressively increased as the carpal angle increased during limb swing and ground contact, suggesting a stabilizing role during the transition between flexion and extension. It can be concluded that the mm. extensor carpi radialis act predominantly in carpal stabilization and extension. In contrast, the mm. flexor ulnaris lateralis contribute to eccentric control of flexion during the walk and to stabilization of extension during the trot, with both muscles exhibiting increased recruitment according to the biomechanical demands of locomotion.

INDEX TERMS: Equine, exercise physiology, locomotion, surface electromyography.

Ethical approval from Animal Ethics Committee (CEUA) protocol no. 0045042019.

Effects of *Rhipicephalus microplus* infestation on follicular dynamics in beef cows

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This study evaluated the effects of *Rhipicephalus microplus* infestation on follicular dynamics in Red Angus cows by assessing dominant follicle growth rate, timing of estrus expression, dominant follicle diameter at intravaginal device removal, and ovulatory follicle diameter. The study was conducted at the Experimental Farm of "Laboratório de Quimioterapia Experimental em Parasitologia Veterinária" (LQEPV)/"Centro de Pesquisa Clínica e Inovação Tecnológica em Medicina Veterinária"

(GRISIUS), "Universidade Federal Rural do Rio de Janeiro" (UFRRJ), Seropédica, Brazil. Twenty-four cows (10 purebred and 14 crossbred) were allocated into two groups according to body condition score, antral follicle count, and genetic background: Tick-Controlled Group (TCG), in which animals were treated with acaricide to prevent tick establishment, and an Infested Group (IG). On Day 0 (D0), all animals were free of ticks. From D+1 onward, all cows were challenged weekly with R.

microplus by applying 10,000 larvae per animal until D+82. On experimental days D+50 and D+71, when animals were at random stages of the estrous cycle, all cows underwent an estrus synchronization protocol consisting of insertion of an intravaginal device containing 1 g of progesterone and administration of 2 mg of estradiol benzoate. Seven days later, the device was removed, and 500 µg of sodium cloprostenol plus 0.5 mg of estradiol cypionate were administered. Following device removal, transrectal ultrasonographic examinations were performed every 24 h by the same operator until ovulation or follicular regression. Cows were not inseminated. Data were analyzed using Generalized Estimating Equations, including group, time, and their interaction, with animal as the repeated

measure and an exchangeable correlation structure. *R. microplus* infestation did not affect dominant follicle diameter at device removal (0.80 cm in IG and 0.83 cm in TCG). However, during the D+50 synchronization protocol, TCG cows exhibited a greater ovulatory follicle diameter than IG cows ($p < 0.05$). During the D+71 protocol, TCG cows showed a higher follicular growth rate compared with IG cows (2.1 vs 0.1 mm/day, respectively; $p < 0.05$). In addition, estrus expression occurred earlier in IG cows than in TCG cows (40 h vs. 48 h; $p < 0.05$). These results suggest that *R. microplus* infestation alters follicular dynamics by reducing follicular growth rate and advancing estrus expression, potentially leading to ovulation of smaller follicles.

INDEX TERMS: Cattle, tick, ectoparasites, follicle, reproduction.

Financial support from FAPUR and GRISIUS. Ethical approval from Animal Ethics Committee (CEUA) protocol no. 6823171224.

Productive performance of Angus cattle finished in a compost barn system with protein-energy supplementation compared with pasture-based systems described in the literature

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The efficiency of beef cattle production is strongly influenced by management, nutrition, and environmental conditions. In this context, Compost Barn, a housing system based on deep organic bedding subjected to periodic turning to promote composting, has been adopted to improve animal comfort and welfare while providing favorable conditions for productive performance. Despite its increasing adoption, information regarding the productive performance of Angus cattle during the finishing phase under tropical conditions remains limited. Therefore, this study aimed to evaluate the average daily gain (ADG) of Angus cattle finished in a Compost Barn system with protein-energy supplementation and compare the results with values reported in the literature for pasture-based production systems receiving comparable protein-energy supplementation. The study was conducted at Cananeia Farm, located in Vassouras, Rio de Janeiro, Brazil, from July 2023 to August 2024. A total of 112 Angus steers in the finishing phase were evaluated, generating 793 individual weight records. Animals remained in the Compost Barn finishing system for approximately 90 days. They were housed on deep organic bedding subjected to periodic turning. They received a diet consisting of corn silage (40%), high-moisture corn (45%), soybean meal (11%), and mineral supplement (4%), totaling 9 kg of dry matter per animal

per day, divided into two daily feedings. Average daily gain was calculated from individual weight records and compared, using a one-sample t-test ($p \leq 0.05$), with the literature reference value of 0.56 kg/day, reported for pasture-based finishing systems with comparable protein-energy supplementation. The observed ADG was 0.98 ± 0.27 kg/day, significantly higher than the literature reference ($p < 0.0001$). Monthly evaluations demonstrated consistent productive performance throughout the experimental period. Although individual variation in weight gain was observed, this variability reflected expected biological differences among animals, including genetic potential, feed efficiency, and growth rate, without compromising herd uniformity. The productive performance observed in this study suggests that the combination of protein-energy supplementation and the Compost Barn finishing system provided favorable conditions for weight gain during the finishing phase. Overall, the results indicate that Angus cattle finished under these conditions achieved greater average daily gain than values reported for comparable pasture-based production systems. These findings reinforce the productive potential of this finishing strategy and contribute to expanding knowledge on Angus cattle production under tropical conditions.

INDEX TERMS: Protein-energy supplementation, growth performance, beef cattle, nutritional management.

Effect of *Rhipicephalus microplus* infestation on oocyte quality in beef cows

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Brazil is one of the world leaders in the in vitro production of bovine embryos. Among the most important variables for the success of this biotechnology is oocyte quality, which is influenced by genetic and environmental factors that are still partially elucidated. Concurrently, *Rhipicephalus microplus* infestation represents one of the main obstacles to cattle productivity, with estimated losses of US\$ 3.24 billion. In this context, the present study aimed to evaluate the influence of *R. microplus* infestation on the oocyte quality of Red Angus and Red Angus crossbred bovine females. Twenty-four females (10 purebred – PB and 14 crossbred – CB) were used, maintained in an experimental system and distributed into two groups: Tick-Free Group (TFG) and Infested Group (IG). Each group consisted of five PB and seven CB cows, totaling 12 animals per group. The distribution was performed considering body condition score (BCS), antral follicle count (AFC), and genetic origin (PB or CB). The experiment was conducted from January to March 2026 at the “Centro de Pesquisa Clínica e Inovação Tecnológica em Medicina Veterinária” (GRISIUS) Experimental Farm at the “Universidade Federal Rural do Rio de Janeiro” (UFRRJ), in Seropédica, Brazil. On Day 0 (D0), all females were tick-free. Infestations were performed twice a week, starting on D+1, with the application of 10,000 *R. microplus* larvae per animal, until D+103; in both groups, the animals were restrained in a handling chute for one hour to ensure larval attachment. Follicular aspirations were performed at time points

D-1 (baseline, no infestation), D+65, D+84, and D+105 (infested). Oocyte classification was performed by a single experienced technician following the criteria established by the International Embryo Transfer Society (IETS). For oocyte quality, the composition of grades (1–4, ordered) was modeled using a cumulative logit mixed model (CLMM) with a random effect per animal. The distribution of grades was affected by group ($p = 0.013$), time ($p < 0.001$), and the interactions group×breed ($p = 0.007$) and group×time ($p < 0.001$). The odds ratios (OR) — TFG vs IG — indicate that the TFG showed a shift in composition toward better grades (1–2) up to D+84 (OR < 1; D+84: OR = 0.23, $p < 0.001$), reversing on D+105 (OR = 2.99, $p = 0.003$), when the TFG began to present poorer quality. The better oocyte quality observed in the TFG up to D+84 suggests that the absence of tick attachment provided more favorable physiological conditions for follicular and oocyte development. It is therefore presumed that females in the IG redirected part of their nutritional and energetic resources to defense mechanisms, tissue repair, and the stress response triggered by *R. microplus* spoliation. The inversion observed on D+105 indicates that uncontrolled factors or factors indirectly associated with the parasitic infestation may have contributed to the variation in oocyte quality. We conclude that *R. microplus* infestation negatively affects follicular development and oocyte quality, potentially compromising reproductive efficiency in beef cows.

INDEX TERMS: Ovum pickup, reproductive performance, stress.

Financial support from GRISIUS, FAPUR, and CAPES. Ethical approval from Animal Ethics Committee (CEUA) protocol no. 6823171224.

Hematology and blood biochemistry of broodmares and neonatal foals supplemented with probiotic and synbiotic

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The use of probiotics and synbiotics as feed additives in horse production has gained relevance due to their potential benefits on gut microbiota modulation and immune response. However, the effects of these additives on the hematological and biochemical profiles of broodmares and foals remain poorly understood, especially in breeds of economic importance such as the Mangalarga

Marchador in Brazil. This study aimed to evaluate the effects of probiotic and synbiotic supplementation on blood parameters of broodmares and nursing foals during the peripartum period. Fifteen Mangalarga Marchador mares and their foals were used, divided into three groups ($n = 5$): Control (oral aqueous solution), Probiotic (*Saccharomyces cerevisiae*, 15 g/animal/day), and

Synbiotic (*S. cerevisiae* + fructooligosaccharides/FOS at 0.07 g/kg BW). The experimental period lasted 180 days (90 days pre- and 90 days postpartum). Blood samples from mares were collected at -45, -30, and -15 days prepartum, at parturition, and at +30 days postpartum; foal samples were collected at 0, 10, 20, 30, 60, and 90 days of age. A completely randomized design with a split-plot arrangement was used, and data were analyzed by ANOVA followed by Tukey's test ($p < 0.05$). In mares, synbiotic supplementation increased hemoglobin and mean corpuscular hemoglobin concentration (MCHC) compared with the Probiotic Group (treatment effect, $p = 0.05$ and $p = 0.03$). Lymphocyte counts were also higher in synbiotic than in probiotic mares (treatment effect, $p = 0.04$), and total plasma protein was higher in both supplemented groups than in control mares (treatment effect, $p = 0.05$). Segmented neutrophils showed a treatment $\times$ time interaction ($p < 0.01$), with synbiotic mares reaching their highest values at parturition, exceeding both other groups. Aspartate aminotransferase (AST) and creatine kinase (CK) also showed treatment $\times$ time interactions: AST rose in synbiotic mares from -30 days through parturition, while CK increased sharply at parturition in control and synbiotic mares but stayed lower throughout in the Probiotic Group. Glucose, triglycerides, lactate,

creatinine, calcium, and urea likewise showed treatment $\times$ time interactions ($p < 0.05$), reflecting distinct peripartum patterns among groups. Phosphorus was higher in control mares (treatment effect, $p < 0.01$), GGT was higher in synbiotic mares (treatment effect, $p = 0.05$), and albumin rose from -15 days to parturition regardless of treatment (time effect, $p < 0.01$). In foals, *mean corpuscular volume* (MCV) showed a treatment $\times$ time interaction ($p < 0.01$), with control foals showing higher values at 30 days than the other groups. Leukocyte counts showed a treatment $\times$ time interaction ($p = 0.03$), with synbiotic foals increasing earlier (10 days) while control and probiotic foals peaked at 90 days. Mean corpuscular hemoglobin (MCH), lymphocytes, monocytes, and eosinophils all varied with age regardless of treatment (time effect, $p < 0.01$), with lymphocytes and monocytes rising from 60 days onward and eosinophils increasing at 90 days. In conclusion, synbiotic supplementation produced the most consistent hematological and biochemical changes in broodmares, including higher segmented neutrophils, lymphocyte counts, and gamma-glutamyl transferase (GGT) activity. In contrast, foal changes were driven mainly by age. These findings suggest that synbiotic supplementation modulates immune and metabolic responses in the peripartum period without compromising blood homeostasis.

INDEX TERMS: Clinical nutrition, gut microbiota, gastroenterology, horses.

Financial support from FAPERJ, CNPQ, and CAPES. Ethical approval from Animal Ethics Committee (CEUA) protocol no. 0113-01-2021.

Bovine colpocytology: quality of different staining protocols in estrous cycle monitoring

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Vaginal cytology is a non-invasive diagnostic tool that optimizes the efficiency of reproductive biotechnologies through morphophysiological monitoring of the estrous cycle in bovines, a species in which cellular variations are characteristically subtle. Diagnostic accuracy is directly linked to the pre-analytical phase. The objective of this study is to evaluate bovine colpocytology and the quality of different staining protocols for cycle monitoring. Six Girolando cows, belonging to the Farm School of the Veterinary Medicine Program at "Universidade Iguaçu" (UNIG), were used. Subsequently, colpocytological material was collected using a previously moistened sterile swab. The samples were stained using different staining methods: fast panoptic, Giemsa, May-Grünwald-Giemsa (MGG), and rose bengal. On each slide, 200 cells were counted using optical microscopy (40x), allowing the visualization of different cell types. From the cell count, the following results were obtained: Cow 1 presented 77.5% intermediate cells, 17.5% superficial nucleated cells, 2.5% superficial anucleated cells, and 2.5% parabasal cells. Cow 2 presented 50% intermediate

cells, 30% superficial nucleated cells, 12.5% superficial anucleated cells, and 7.5% parabasal cells. Cow 3 presented 52.5% intermediate cells, 20% superficial nucleated cells, 18% parabasal cells, and 9.5% superficial anucleated cells. Cow 4 had 65% intermediate cells, 32.5% superficial nucleated cells, 2.5% parabasal cells, and 0% superficial anucleated cells. Cow 5 had 47.5% intermediate cells, 27.5% superficial nucleated cells, 20.5% parabasal cells, and 4.5% superficial anucleated cells. Finally, Cow 6 presented 65% parabasal cells, 30% intermediate cells, 5% superficial nucleated cells, and 0% superficial anucleated cells. Immediate chemical fixation with methanol minimized autolytic processes and overlapping artifacts. The diagnostic sensitivity of fast panoptic, Giemsa, MGG, and rose bengal counterstained with methylene blue was minimally analyzed. Cationic dyes resolved the nuclear architecture by binding to negative nucleic acids, while isolated anionic dyes, such as rose bengal, failed to evidence the nuclei due to electrostatic repulsion. Pure Giemsa frequently generated excessive precipitates; conversely, its diluted



preparation allowed for a balanced ion exchange. Fast Panoptic offered rapid execution for routine screening, while the MGG method demonstrated superior cytoplasmic distinction, vital for precise maturation quantification. Beyond staining efficacy, the descriptive quantitative analysis mapped the reproductive status by highlighting the specific cell types of each phase. It

is concluded that MGG provides excellent qualitative resolution for detailed morphophysiological studies, while fast panoptic is consolidated for field screening. The standardization of these analytical techniques optimizes laboratory precision, safely infers hormonal status, reduces interpretive biases, and provides support for clinical decision-making.

INDEX TERMS: Cytological evaluation, epithelial cells, reproductive biotechnology, reproductive physiology, vaginal cytology.

Ethical approval from Animal Ethics Committee (PEBIO/UNIG no. 43/2025).

The importance of preventive equine dentistry in sport horses

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Equine dentistry plays a fundamental role in maintaining oral health, welfare, and athletic performance in horses, allowing the early identification and correction of dental disorders that may impair mastication and cause discomfort and pain. The present retrospective study describes the main dental abnormalities observed in sport horses based on data collected during routine clinical dental examinations performed at an equestrian facility. It highlights the importance of preventive dental care for maintaining health and performance. Ten Brazilian Sport Horses, aged between 5 and 12 years, from an equestrian facility located in the metropolitan region of Rio de Janeiro, Brazil, and maintained under an intensive stabling management system, underwent clinical and dental examinations under sedation. Information regarding clinical history, owners' complaints, and dental findings was recorded during the examinations and subsequently analyzed. Oral evaluation included a complete inspection of the oral cavity, measurement of mandibular lateral excursion, and the identification of occlusal abnormalities. All evaluated animals presented dental abnormalities requiring corrective treatment. Excessive enamel points were observed in all ten horses

(100%). Additionally, ramps were identified in eight horses (80%), hooks in six (60%), excessive transverse ridges in four (40%), excessive incisor wear in three (30%), retained deciduous teeth in two (20%), and peripheral cemental fractures were observed in two horses (20%). Three horses (30%) presented mucosal lesions associated with occlusal irregularities. The main complaints reported by the owners included bit resistance, excessive head movement during exercise, and difficulty in performing turns during training sessions. Corrective odontoplasty was performed according to each animal's needs, including occlusal adjustment and removal of dental irregularities. Following treatment, improvement of the mandibular lateral excursion was observed in all evaluated horses. The results reinforce the importance of regular dental examinations as part of preventive equine healthcare. Many dental disorders may remain undiagnosed until they interfere with behavior, masticatory efficiency, or athletic performance. Therefore, regular dental evaluation and treatment are essential for maintaining health, quality of life, welfare, and performance in sport horses.

INDEX TERMS: Horses, equine dentistry, welfare, athletic performance, preventive care.

Preliminary evaluation of the use of homeopathy in the management of *Rhipicephalus microplus* in dairy cattle raised under an organic system in the municipality of Teresópolis/RJ

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The control of ectoparasites remains one of the main challenges in Brazilian cattle production due to its impact on animal health and productivity. Homeopathy has been

proposed as a sustainable alternative to conventional acaricides because it does not leave residues in food or the environment. Therefore, this study aimed to evaluate

Rhipicephalus microplus infestation in dairy cattle raised under an organic production system using the homeopathic product Parasit 100. This study presents partial results from a 12-month experiment conducted at Fazenda Vale das Palmeiras, located in the municipality of Teresópolis, Rio de Janeiro. Since the study was carried out without a control group, the results should be interpreted as preliminary and descriptive. From December 2025 to May 2026, corresponding to the first six months of the experiment, 28 female cattle of different age groups were evaluated. The parasitic load of *R. microplus* was determined monthly by manually counting the specimens present on the animals, and the results were recorded to monitor the infestation throughout the study. Treatment with the homeopathic medicine Parasit 100 was administered daily during morning and afternoon milkings, continuously throughout the experimental period. During the six months evaluated, 2,690 ticks were counted, with significant variations

observed between months. The highest infestation rates occurred in December (736 ticks) and April (960 ticks), while the lowest were recorded in January (152 ticks) and May (196 ticks). The observed fluctuations in infestation levels suggest the influence of factors such as seasonality and the parasite's biological cycle. Considering that homeopathic products are frequently described as treatments with gradual action, dependent on continuous and prolonged use, the results obtained so far do not allow definitive conclusions about their effectiveness. However, the reduction observed from April to May may indicate a possible trend of decreasing infestation, to be confirmed with the continuation of the experiment. Therefore, the results presented should be considered preliminary, and further analysis is necessary to complete the experimental period and conduct complementary analyses for a more consistent evaluation of the contribution of Parasit 100 in controlling *R. microplus* in organic production systems.

INDEX TERMS: Integrated parasite management, alternative therapy, tick infestation, organic livestock production, sustainable agriculture.

Postpartum uterine prolapse in a cow under extensive management: a clinical case report

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Uterine prolapse is considered one of the most important obstetric emergencies in cattle. It is characterized by partial or complete exteriorization of the uterus, usually occurring during the immediate postpartum period. This condition causes not only significant clinical impacts, but also important economic losses due to the risks of hemorrhage, secondary infections, reproductive disorders and reduced productivity in livestock production systems. The present study was conducted with the objective of reporting a clinical case of uterine prolapse in a beef cow with an estimated weight of 300 kg, raised under an extensive production system in the interior of the State of Rio de Janeiro, Brazil. An adult cow from a herd was examined with complete uterine prolapse approximately 12 hours after the delivery of a calf. The clinical evaluation revealed severe uterine edema, vascular congestion, slight bleeding, partially adherent cotyledons and environmental contamination of the exposed organ. Despite the severity of the condition, the calf was born alive, and the cow did not present extensive areas of tissue necrosis or significant systemic impairment. The treatment was successfully performed under field conditions and consisted of complete cleaning of the uterus using 0.9% sterile saline solution. Granulated sugar was applied to promote edema reduction and facilitate organ manipulation. In anesthesia, a caudal

epidural block was performed using xylazine at a dose of 0.75 mL associated with 2% lidocaine (7 mL) and the adhered placental tissues were carefully removed manually. Local hemostasis was achieved through continuous simple suture with the absorbable thread no. 0 (chrome category) of hemorrhagic areas. After the reduction of the edema, the uterus was correctly repositioned in the abdominal cavity, and containment sutures with nylon thread no. 2 (internally in a "U" pattern and externally in an "inverted U" pattern) were applied to avoid recurrence. In addition, the vaginal cavity was cleaned with sterile solution of 0.9% cold sodium chloride associated with benzylpenicillin procaine (12,000 UI/kg) and dihydrostreptomycin (5 mg/kg), where 15 mL were administered, and, at the end of the procedure, systemic antibiotic therapy with penicillin, at a dose of 3,600,000 UI/kg (15 mL), and anti-inflammatory with meloxicam 2%, at a dose of 7.5 mL, both intramuscularly. Clinical follow-up showed significant recovery, with no evidence of recurrence or relevant complications. The findings suggest that the preservation of uterine viability, along with the adoption of an appropriate therapeutic approach, may contribute to a successful recovery. It is concluded that timely veterinary intervention, adequate evaluation of tissue viability and the application of practical field techniques are essential for the successful management of postpartum uterine prolapse in cattle.

INDEX TERMS: Obstetric emergency, beef cattle, reproductive disorder, field, dystocia.



Multimodal rehabilitation of superficial digital flexor tendonitis in a sport horse: a case report

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Superficial digital flexor tendon (SDFT) tendonitis is one of the most common musculoskeletal disorders affecting athletic horses. It represents a major cause of reduced performance, prolonged rehabilitation, and premature retirement from sports activities. Due to the limited regenerative capacity of tendon tissue and the high recurrence rates associated with this condition, effective treatment remains a significant challenge in equine sports medicine. Current evidence suggests that multimodal rehabilitation protocols combining physical therapies and regenerative medicine may improve clinical recovery and support tendon healing. This study aimed to describe the clinical progression, therapeutic management, and outcome of a case of SDFT tendonitis in a show jumping horse, emphasizing the contribution of extracorporeal shock wave therapy (ESWT) within a multimodal rehabilitation protocol. This descriptive case report followed an adult athletic horse from February 2025 to February 2026 through periodic clinical examinations, musculoskeletal assessments, and ultrasonographic evaluations. Initial findings included postural asymmetry, cervical and lumbar mobility restrictions, muscular contractures, pain on palpation, and progressive locomotor dysfunction. Ultrasonographic examination confirmed an active tendon lesion characterized by hypoechoic areas, collagen fiber disorganization, and increased tendon cross-sectional area. The rehabilitation protocol was implemented sequentially. Initially, the horse underwent laser therapy, therapeutic ultrasound, pulsed electromagnetic field therapy (PEMF), chiropractic treatment, and controlled exercise management.

After persistent ultrasonographic evidence of tendon injury, platelet-rich plasma (PRP) was administered intralesionally. Subsequently, three extracorporeal shock wave therapy (ESWT) sessions were performed at approximately 15-day intervals while the remaining rehabilitation strategies were maintained. Clinical and ultrasonographic monitoring demonstrated progressive improvement throughout the treatment period. Following the introduction of PRP and ESWT into the rehabilitation protocol, the horse exhibited marked reduction in pain, complete resolution of lameness, improved locomotor comfort, progressive filling of the tendon defect, and better collagen fiber alignment on ultrasonography. These findings are consistent with previous reports describing the potential benefits of regenerative therapies associated with physical rehabilitation in promoting tendon repair and functional recovery in equine athletes. In conclusion, this case demonstrated a favorable clinical and ultrasonographic evolution during a multimodal rehabilitation program that included ESWT as one of its therapeutic components. Although the positive outcome suggests that the combined approach may have contributed to tendon healing and functional recovery, the specific contribution of each therapeutic modality cannot be determined from a single case report. Further controlled studies are required to establish better the role of ESWT within multimodal rehabilitation protocols for SDFT tendonitis in athletic horses. Long-term monitoring and gradual return to exercise remain essential due to the risk of recurrence associated with tendon injuries.

INDEX TERMS: Equine athlete, superficial digital flexor tendon, tendonitis, extracorporeal shock wave therapy, platelet-rich plasma, rehabilitation, tendon healing.

Fetoplacental circulatory insufficiency caused by umbilical cord tension in an Arabian mare

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Abortion is one of the most common causes of reproductive losses and economic damage in the equine industry, particularly when it affects mares of high genetic and zootechnical value. Although infectious diseases are frequently investigated as the primary causes of equine abortion, non-infectious conditions, particularly umbilical cord abnormalities, should also be considered because of their potential to compromise fetoplacental circulation, resulting in fetal hypoxia and intrauterine death. This study reports a case of abortion associated with excessive

umbilical cord elongation, with clinical and macroscopic findings suggestive of vascular torsion, in a multiparous Arabian mare whose pregnancy was achieved through artificial insemination. Pregnancy progressed uneventfully until the final trimester, when the mare developed muscle tremors, profuse sweating, tachycardia, restlessness, and agitation, rapidly progressing to spontaneous abortion. Supportive body cooling with abundant water was performed before fetal expulsion, which occurred without the need for obstetrical intervention. Gross examination of

the fetus, placenta, and fetal membranes revealed marked elongation of the umbilical cord, visually estimated at approximately two meters, representing the principal macroscopic abnormality identified. No remarkable macroscopic fetal abnormalities were observed. Clinical history and post-abortion gross findings suggested fetoplacental circulatory insufficiency, possibly associated with umbilical cord vascular torsion, leading to impaired fetal perfusion, hypoxia, and intrauterine death. Because ante mortem diagnosis of umbilical cord abnormalities is often challenging owing to nonspecific clinical manifestations, systematic post-abortion examination of the fetus, placenta, and umbilical cord was essential for establishing the etiological suspicion in this case. Post-abortion management included uterine lavage with lactated Ringer's solution to remove residual fetal debris, reduce uterine contamination, and promote uterine involution, followed by intrauterine gentamicin infusion (200 mL)

maintained for approximately 24 hours and repeated uterine lavage, oxytocin (1 mL IV) administered initially and after each lavage, and flunixin meglumine (1.1 mg/kg IV followed by 0.25 mg/kg IV every six hours for five days). Clinical evolution was favorable, with no evidence of retained fetal membranes, metritis, endotoxemia, or other complications, and adequate uterine involution was observed, demonstrating the effectiveness of early therapeutic intervention in preserving reproductive health. This case reinforces the importance of systematic post-abortion examination of the fetus, placenta, and umbilical cord for the etiological investigation of equine abortion. Umbilical cord abnormalities should be included among the differential diagnoses of late-term abortion, particularly in the absence of evidence of infectious disease, as their recognition may improve diagnostic accuracy and guide future reproductive management.

INDEX TERMS: Equine reproduction, spondylosis, fetal hypoxia, intrauterine death, artificial insemination, pregnancy loss, reproductive management.

Physiological responses of horses subjected to a treadmill adaptation protocol

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The adaptation of horses to treadmill exercise is an essential step for research and training, as it is related to the animal's ability to perform safe locomotion, ensuring welfare. The objective of this study was to evaluate a treadmill adaptation protocol and locomotion at walk, trot, and gallop. Sixteen clinically healthy adult Brazilian Sport Horses were divided into two groups: Group 1 (n = 8), horses with previous treadmill experience; Group 2 (n = 8), horses inexperienced with the treadmill. All animals underwent a standardized adaptation protocol composed of three sequential phases performed on different days. In Phase 1, horses were exposed to the laboratory and treadmill environment to promote habituation. In Phase 2, horses performed progressive locomotion on the treadmill at walk and trot. In Phase 3, horses performed treadmill locomotion with inclination and speed variation, reaching gallop at the end of the protocol. Physiological variables measured were mean heart rate, peak heart rate, RR interval variability, and duration of each phase. Horses were monitored with a heart rate monitor H10 (Polar®), and data were imported into Excel and analyzed in R using the Mann-Whitney test. Results demonstrated that in Phase 1 there were significant differences in all variables, with lower values in

experienced horses: duration (44 s vs 63 s), mean heart rate (61.5 bpm vs 72.5 bpm), peak heart rate (70 bpm vs 96.5 bpm), and mean RR interval (1025.5 ms vs 845.5 ms). In Phase 2, significant differences also were observed in mean heart rate (73 bpm vs 118.5 bpm), peak heart rate (91 bpm vs 153.5 bpm), and mean RR interval (783.5 ms vs 527 ms), while the duration did not differ between groups (243 s vs 322.5 s). In Phase 3, significant differences were observed in mean heart rate (84.5 bpm vs 111 bpm) and peak heart rate (106 bpm vs 153 bpm), but not in mean RR interval (732.5 ms vs 629.5 ms) or phase duration (234.5 s vs 321 s). At rest, no significant differences were observed between groups, with similar values: mean heart rate (32 bpm vs 35 bpm), peak heart rate (36.5 bpm vs 39.5 bpm), mean RR interval (1924.5 ms vs 1886.5 ms), and duration (60 s vs 60 s). These findings demonstrate that previous treadmill experience contributes to more efficient physiological responses during exercise. The results reinforce the importance of gradual and controlled adaptation protocols for inexperienced horses. In conclusion, experienced horses showed lower heart rate and higher RR intervals, indicating better adaptation to treadmill locomotion.

INDEX TERMS: Horse, stress, training.

Financial support from FAPERJ, CNPQ, and CAPES. Ethical approval from Animal Use Ethics Committee (CEUA) protocol no. 0045042019.

Surface electromyography and hindlimb kinematics in horses exercised on a treadmill

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This study aimed to evaluate the electromyographic and kinematic parameters of the equine hindlimb at walk (1.8 m/s) and trot (3.6 m/s) on a treadmill. Eleven Brazilian Sport Horses were used. Surface electromyography (sEMG) was applied bilaterally to the mm. tensor fasciae latae (TFL) and mm. biceps femoris (BF), using disposable bipolar surface electrodes longitudinally attached to the muscle bellies; data were collected with a Miotool Físio® system and processed with Miotec Suite 1.0 software. Kinematic analysis was performed using GoPro video recordings to assess the coxofemoral (hip) and femorotibial-patellar (FTP) joints, analyzed with KINOVEA software. The stride was divided into four phases: Phase 1 – full limb support on the ground; Phase 2 – propulsion; Phase 3 – swing; and Phase 4 – ground contact/landing. Data were expressed as mean $\pm$ standard deviation. Normality and variance homogeneity were assessed using the Shapiro-Wilk and Levene's tests, respectively. A split-plot repeated-measures ANOVA was used, with gait and stride phase as fixed effects and horse as a random effect, followed by Tukey's post hoc test and a Kenward-Roger adjustment for denominator degrees of freedom. Pearson's correlation assessed associations between EMG activity and joint kinematics per gait and phase, with $|r| \geq 0.30$ considered meaningful. Analyses were performed in RStudio 4.1, with $p < 0.05$ considered significant. At walk, the greatest hip angle occurred in full limb support (Phase 1, $87.9^\circ \pm 4.4^\circ$), with the smallest angles in propulsion and swing. At

trot, the smallest hip angle occurred in propulsion ($70.9^\circ \pm 3.3^\circ$). The FTP angle was highest in swing at walk ($136.5^\circ \pm 5.9^\circ$), whereas at trot the highest values occurred in propulsion and swing. Mm. tensor fasciae latae activity increased from $37.85 \pm 8.82 \mu V$ at walk to $55.52 \pm 21.19 \mu V$ at trot, and BF activity increased from $15.15 \pm 1.89 \mu V$ to $26.51 \pm 6.61 \mu V$ ($p < 0.001$). At walk, TFL was negatively correlated with the FTP joint in swing and landing ($r = -0.41$ and $r = -0.54$), indicating greater recruitment during FTP flexion, consistent with its role in stabilization and knee flexion control. BF was negatively correlated with the hip joint in full limb support and propulsion (Phases 1 and 2, $r = -0.33$ and $r = -0.42$), indicating higher activation during greater hip flexion in stance, reflecting its role in pelvic stabilization and eccentric hip control. At trot, TFL showed negative correlations with the FTP joint in Phases 1, 2, and 4, suggesting preferential recruitment during joint flexion, and a positive correlation in swing ($r = 0.54$), when the joint was in extension. BF showed moderate positive correlations with the hip joint in propulsion, swing, and landing ($r = 0.48, 0.42$, and 0.52), with the highest RMS in swing ($39.37 \pm 23.76 \mu V$), reflecting its contribution to hip extension during propulsion and swing. In conclusion, the TFL and BF play multifunctional roles, alternating between stabilization and propulsion depending on stride phase, with distinct recruitment patterns between gaits and higher neuromuscular demand at trot.

INDEX TERMS: Biomechanics, equine, training.

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PEQUENOS ANIMAIS

Dilated pore of Winer in a Dog

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Dilated pore of Winer (DPW) is a benign cystic follicular neoplasm originating from the hair follicle infundibular portion. Although commonly reported in humans, it has been described only sporadically

in animals. Clinically, DPW presents as a small cystic nodular lesion with a patent ostium communicating with the skin surface, allowing the extrusion of keratinous material of variable consistency. Histopathological



examination is required for definitive diagnosis and typically reveals a cystic invagination lined by irregular, hyperplastic stratified squamous epithelium with pronounced rete ridge formation, which transitions superficially to a thinner, more uniform epithelium resembling the normal follicular infundibulum. Surgical excision is the curative treatment, although recurrence may occur. This study describes a case of DPW in a mixed-breed dog presented to the Veterinary Hospital of the “Universidade Federal Rural do Rio de Janeiro” (UFRRJ), emphasizing its clinicopathological and histomorphological features. A 13-year-old intact male mixed-breed dog was presented with a history of three cutaneous nodules located in the right ventral cervical region, left flank, and skin overlying the left ischiatic tuberosity. Based on the clinical suspicion of follicular cysts, surgical excision of the nodules was performed. Tissue samples were fixed in 10% neutral-buffered formalin and submitted to the Histopathology Service of UFRRJ. Grossly, the cutaneous specimen from the left flank consisted of a soft, haired, non-ulcerated, 0.4-cm-diameter nodule. On the cut section, a cystic cavity containing black, pasty material was observed. Histologically, the dermis contained a focal, moderately well-demarcated cystic structure communicating with the epidermal surface through a patent ostium. The cystic lumen was filled with abundant lamellated amorphous eosinophilic-to-amphophilic keratinaceous material. The cyst wall was lined by irregular hyperplastic stratified squamous epithelium with a conspicuous granular layer and a regular basal contour. Adjacent to the lesion, there was a marked

inflammatory infiltrate composed predominantly of macrophages, lymphocytes, and plasma cells. Based on these findings, a morphological diagnosis of dilated pore of Winer was established. The remaining nodules were diagnosed as sweat gland ectasia and granulomatous dermatitis/panniculitis. Although relatively common in elderly humans, DPW remains exceedingly uncommon in veterinary medicine, with only a few feline cases and a single recent canine report described in the literature. The lesion described herein was morphologically consistent with previously reported cases and more closely resembled the human presentation than the feline counterpart, in which lesions are often firmer and more densely keratinized. The histopathological findings support the concept that DPW represents a distinct follicular entity rather than a simple comedo or infundibular follicular cyst. Despite partial histomorphological overlap with keratinizing infundibular acanthoma, the present lesion lacked the thick epithelial wall with radiating cords and trabeculae containing horn pearls that typify this neoplasm. The marked inflammatory infiltrate was most likely secondary to cyst rupture and extrusion of keratinaceous material into the surrounding dermis, a common feature in follicular cystic lesions. This report highlights the clinicopathological and histopathological characteristics of DPW in dogs and reinforces the importance of histopathological evaluation for definitive diagnosis. Moreover, DPW should be included in the differential diagnosis of cystic cutaneous neoplastic lesions in dogs.

INDEX TERMS: Dilated pore of Winer, canine, follicular neoplasm, follicular pathology, histopathology, skin neoplasm, veterinary pathology.

Iatrogenic gastroenteric ulcer associated with the use of nonsteroidal anti-inflammatory drugs in a domestic cat: case report

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Nonsteroidal anti-inflammatory drugs (NSAIDs) are widely used in veterinary medicine, and their indiscriminate use in cats can cause gastrointestinal irritation and perforation. This report describes a domestic cat undergoing long-term corticosteroid therapy that developed a gastroenteric ulcer associated with NSAID use. A 16-year-old female cat with a history of inflammatory bowel disease (IBD) controlled by oral prednisolone (1 mg/kg every 24 hours) was presented at a private clinic in Rio de Janeiro. On clinical examination, halitosis, dental calculus, gingivitis, and tissue proliferation in the oral cavity, accompanied by purulent discharge, were observed. Periodontal treatment was indicated. Extensive dental extraction prolonged the anesthetic procedure and resulted in

intraoperative hypotension (systolic blood pressure – SBP, 90 mmHg). Postoperatively, meloxicam (0.1 mg/kg) was administered subcutaneously (SC), as was cefovecin (8 mg/kg) diluted in 10 mL of lactated Ringer's solution; oral (PO) dipyrone (12.5 mg/kg) combined with tramadol hydrochloride (2 mg/kg) was prescribed every 12 hours (BID) for seven days, while corticosteroid therapy was maintained. Two days postoperatively, the cat exhibited hyporexia, nausea, and vomiting, progressing to lethargy, vocalization, and dyspnea, which prompted hospitalization. Physical examination showed pale mucous membranes, mydriasis, and SBP of 60 mmHg. Blood glucose was 252 mg/dL, and β -hydroxybutyrate concentration was 0.2 mmol/L. Complete blood count findings



demonstrated severe anemia (hematocrit 12% and hemoglobin 3.8 g/dL), which improved after blood transfusion, with a post-transfusion hematocrit of 29%. Abdominal ultrasonography demonstrated severe peritonitis, gastric inflammation, and edema, with possible neoplasia and enteropathy. Nasogastric decompression drained 40 mL of brownish fluid, corroborating the suspected gastric rupture; however, serial contrast radiographs showed no extravasation. Omeprazole (1 mg/kg, orally, twice daily) and sucralfate (250 mg/cat, orally, twice daily) were added to the treatment regimen. As prostration persisted, an exploratory laparotomy was indicated; however, the cat died. Necropsy confirmed a perforated gastroenteric ulcer in the pyloroduodenal region with diffuse peritonitis, and histopathological examination showed no evidence of neoplasia. NSAIDs inhibit cyclooxygenase enzymes, reducing the synthesis of prostaglandins, which play a key role in gastric mucosal protection. Cats exhibit slow clearance of NSAIDs due to a deficiency in glucuronidation; therefore, dosage and administration

must be adjusted to avoid adverse effects. The combination of NSAIDs and chronic corticosteroid therapy increases the risk of gastrointestinal ulceration by further reducing the synthesis of cytoprotective prostaglandins. Furthermore, NSAIDs should not be administered to hypovolemic or hypotensive cats, and the episode of intraoperative hypotension may have also contributed to the development of the perforated ulcer. The minimum effective dose of meloxicam is 0.2 mg/kg for a single administration and 0.025 to 0.05 mg/kg for four days. The dose was within the recommended range, suggesting that factors other than dosage contributed to the gastrointestinal perforation. This case suggests that gastroenteric perforation was likely a multifactorial event involving chronic corticosteroid therapy, intraoperative hypotension, and NSAID administration. Therefore, NSAID administration during the immediate postoperative period should be based on clinical assessment to minimize the risk of gastroenteric perforation.

INDEX TERMS: Perioperative hypotension, corticosteroid therapy, gastrointestinal perforation, felines.

Transient myocarditis associated with inflammatory conditions: a case series in domestic cats

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Transient myocardial thickening (TMT) associated with congestive heart failure (CHF) is a condition that mimics hypertrophic cardiomyopathy and has been reported in young cats. Similar to humans, TMT is associated with myocardial edema, and acute myocarditis is considered the main proposed mechanism underlying this condition in cats. A systemic inflammatory state appears to trigger an inflammatory myocardial phenotype in felines. The aim of this case series is to describe severe cardiovascular abnormalities associated with inflammatory conditions in three domestic cats. In Case 1, a young female cat presented with feline fibroadenomatous mammary hyperplasia (FFMH) associated with previous contraceptive use and subsequently developed CHF during treatment. Echocardiographic findings included pulmonary edema, biatrial enlargement, and pericardial effusion, with complete resolution of the cardiac abnormalities after clinical stabilization of the mammary condition. In Case 2, a young pregnant queen, also with a history of contraceptive use and FFMH, developed CHF during the postoperative period following therapeutic ovariectomy. Cardiac abnormalities included biatrial enlargement, left ventricular hypertrophy, and mitral and tricuspid valve regurgitation. The patient showed a favorable clinical response to the instituted cardiac therapy. In Case 3, a senior cat with multiple

comorbidities, including inflammatory enteropathy, pancreatic disease, and cholangitis, presented with recurrent episodes of dyspnea associated with pleural effusion and pulmonary edema. Cardiac evaluation revealed dilation of all four cardiac chambers without echocardiographic criteria consistent with classical feline cardiomyopathies; therefore, the condition was classified as unclassified cardiomyopathy. Moreover, previous cardiac examinations showed no noteworthy abnormalities. Myocarditis in cats has previously been described in association with SARS-CoV-2 infection and feline infectious peritonitis (FIP), with the identification of inflammatory markers within the myocardium, supporting a link between systemic inflammation and myocardial injury. To date, there are no reports in the literature describing feline mammary fibroepithelial hyperplasia (FMFH) as a triggering factor for transient myocardial thickening (TMT). However, the reversible nature of the cardiac alterations observed and their occurrence in more than one case raise the possibility that the inflammatory state associated with FMFH may have contributed to the myocardial injury observed in Cases 1 and 2. In human medicine, the association between inflammatory bowel disease (IBD) and cardiovascular disease is well established, with chronic systemic inflammation playing a central role. In cats, chronic pancreatitis has been described as a systemic



disease associated with increased concentrations of inflammatory markers within the myocardium. Therefore, the absence of clinically significant abnormalities on previous echocardiographic examinations, together with the serial radiographic findings obtained throughout clinical follow-up, supports the hypothesis that the cardiac alterations

observed were associated with a systemic inflammatory state secondary to IBD and pancreatitis. Collectively, these cases highlight the association between systemic inflammatory diseases and the development of cardiac abnormalities in cats, emphasizing the potential for cardiovascular complications in feline patients affected by inflammatory disorders.

INDEX TERMS: Feline, transient myocardial thickening, systemic inflammation, feline mammary fibroepithelial hyperplasia, pancreatitis, inflammatory bowel disease.

Clinicopathological findings and diagnostic challenges in a canine neoplasm suggestive of granulocytic sarcoma

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Granulocytic sarcoma is a rare neoplasm composed of immature myeloid and hematopoietic precursor cells arising outside the bone marrow and peripheral blood. Although well recognized in human medicine, it remains poorly described in veterinary medicine. It represents a diagnostic challenge because of its variable clinical presentation and marked morphological overlap with other round cell neoplasms. A 13-year-old mixed-breed female dog presented with a one-year history of a crusting lesion affecting the left nostril and progressive multifocal depigmentation of the lips, followed by progressive swelling of the left hemiface with marked edema of the upper lip for approximately 25 days. Clinical examination also revealed a slightly raised plaque-like lesion with focal ulceration in the ventral cervical region and moderate enlargement of the left submandibular lymph node before treatment with clindamycin and prednisone. Cytology of the cervical lesion was inconclusive, suggesting either a polymorphonuclear-rich inflammatory process or, more likely, a round cell neoplasm, particularly lymphoma. The dog subsequently developed marked dysphagia, hyporexia, sporadic vomiting, and an estimated 15-kg weight loss, progressing to acute clinical deterioration and spontaneous death. Necropsy was performed at the "Setor de Anatomia Patológica" (SAP) of the "Universidade Federal Rural do Rio de Janeiro" (UFRRJ). Gross examination revealed marked enlargement of the submandibular and cervical lymph nodes with multifocal to coalescing white infiltrative nodules compressing the pharynx and larynx. The tonsils were enlarged, firm, and white. A diffuse thoracic mass adhered to the great vessels at the heart base and extended along the musculature dorsal to the trachea. Additional

white nodules were present in the interventricular septum, liver, and cervical and facial musculature. Representative tissues were routinely processed for histopathology and stained with hematoxylin and eosin (HE). Microscopically, affected tissues exhibited dense infiltration by round to pleomorphic neoplastic cells with scant lightly eosinophilic cytoplasm and oval, reniform, or cleaved nuclei. Numerous mitotic figures were observed in the tonsils. Infiltrated musculature showed extensive coagulative necrosis with marked neutrophilic, eosinophilic, and macrophagic infiltrates. Immunohistochemistry (IHC) using anti-CD3 and anti-CD79 antibodies showed negative immunolabeling, excluding mature T- and B-cell lymphoma. Based on the histomorphological findings, the lesion was considered a poorly differentiated neoplasm suggestive of granulocytic sarcoma. Nevertheless, other aggressive infiltrative neoplasms with similar anaplastic morphology, including histiocytic sarcoma and anaplastic extramedullary plasmacytoma, remain important microscopic differential diagnoses. However, the absence of a broader immunohistochemical panel, including myeloid (CD11b, CD14) and hematopoietic precursor (CD34) markers, precluded definitive confirmation of the neoplastic lineage. Furthermore, the lack of hematological and bone marrow evaluation prevented the exclusion of concomitant or secondary acute myeloid leukemia. These findings highlight the diagnostic complexity of granulocytic neoplasms in veterinary medicine and emphasize the importance of integrating clinicopathological, histomorphological, and immunophenotypic findings for accurate characterization of neoplasms derived from myeloid and hematopoietic precursor cells.

INDEX TERMS: Round cell tumors, myeloid sarcoma, hematopoietic neoplasm, differential diagnosis, immunohistochemistry, dog, veterinary pathology.



Crossed fused renal ectopia in a cat

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Crossed fused renal ectopia is a congenital anomaly in which an ectopic kidney crosses the midline and becomes partially fused with the contralateral orthotopic kidney. This condition is rare in animals and more common in humans. This report aimed to present a case of crossed fused renal ectopia in a young domestic cat. A young male feline was found dead and submitted for post mortem examination at the “Setor de Anatomia Patológica” (SAP) of the “Universidade Federal Rural do Rio de Janeiro” (UFRRJ). During necropsy, multiple organs were sampled in sterile microtubes and forwarded for the feline leukemia virus (FeLV) molecular examination. Grossly, all pulmonary lobes had multifocal to coalescent, irregular, dark-red, firm areas. The kidneys were located in the left antimere plane, measuring 7 × 3 × 1.5 cm, characterized by extensive fusion of both kidneys forming a single renal mass with two independent renal pelves positioned opposite each other. Besides, bilateral cryptorchidism and hydrothorax were also noted. Representative tissue samples were routinely processed for histopathology, sectioned at 3 µm, and stained with hematoxylin and eosin (HE). Microscopically, there are no significant

changes in the crossed-fused kidney. A marked hypertrophy of the smooth muscle of the pulmonary arteries and a moderate decrease in the white pulp of the spleen were noted. Although frequently clinically silent, this congenital anomaly may be associated with other developmental abnormalities. In the present case, cryptorchidism was also observed, reinforcing the possibility of concurrent congenital defects. Additionally, fused kidneys may predispose affected animals to secondary complications, including recurrent urinary tract infections and urolithiasis, although these alterations were not observed in the present case. Despite splenic white pulp depletion, PCR analysis was negative for FeLV. This case confirms that feline crossed fused renal ectopia can remain morphologically preserved, representing an incidental finding entirely unrelated to the cause of death. The underlying cause of this lesion could not be determined in the present case and warrants further elucidation. Recognizing this syndromic association with other congenital abnormalities is vital for veterinary pathologists to avoid misinterpreting ectopic fusion as renal agenesis or neoplasia.

INDEX TERMS: Congenital abnormality, urinary tract, cryptorchidism, feline medicine, developmental defect, necropsy.

Juvenile pubic symphysiodesis as a prophylactic strategy for canine hip dysplasia: a case report

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Canine hip dysplasia (CHD) is the most prevalent non-traumatic orthopedic condition in small animal practice, characterized by a polygenic and multifactorial etiology, whose pathophysiological outcome invariably culminates in the development of degenerative joint disease (DJD) and osteoarthritis (OA). The progression of CHD is modulated by the interaction between genetic and environmental factors, including nutritional management, flooring surface type, and intensity of physical activity during the critical growth period. This study aimed to report the clinical case of a 13-week-old, 10.2 kg female Golden Retriever admitted for specialized orthopedic evaluation with a history of intermittent lameness, a bunny-hopping gait, and pain on deep bilateral palpation of the hip region. The initial conventional radiographic study was within normal parameters, a result consistent with the recognized

diagnostic limitations of the extended ventrodorsal projection in skeletally immature patients, where tensioning of the joint capsule masks passive laxity. Given the discordance between clinical signs and radiographic findings, the University of Pennsylvania Hip Improvement Program (PennHIP) method was performed under sedation, allowing for the objective quantification of joint laxity using the distraction index (DI). The results revealed a DI of 0.76 for the right limb and 0.60 for the left limb. According to PennHIP literature, a DI greater than 0.30 indicates increased joint laxity and susceptibility to osteoarthritis; for the Golden Retriever breed, these values are markedly above established thresholds and breed averages, characterizing critical joint instability. This procedure consists of the thermally induced ablation — via electrocautery at 40 W — of the growth cartilage of



the pubic symphysis, promoting its premature closure. This mechanism restricts ventral pelvic growth while the dorsal portion continues to develop, resulting in acetabular ventroversion and increased coverage of the femoral head. Radiographic follow-up performed 13 months after surgery demonstrated a significant increase in acetabular coverage of the femoral heads, without evidence of clinically relevant OA. Throughout the follow-up, a multimodal protocol with physiotherapy and chondroprotective nutraceuticals was instituted. Although DI values exceeded the threshold ideally recommended by the literature (0.4–0.6), the favorable clinical evolution suggests that *juvenile pubic symphysiodesis* (JPS) may offer clinical benefit

even in scenarios of critical instability, provided that the intervention is performed within the appropriate age window. However, a limitation of this case report is the concurrent institution of physiotherapy and chondroprotective nutraceutical supplementation, which makes it challenging to determine whether the positive clinical outcome occurred exclusively due to the surgical procedure. It is concluded that the integration of the PennHIP method as an early predictive tool and the timely performance of JPS constitute an effective prophylactic strategy to delay the progression of DJD and ensure the patient's long-term quality of life. Multimodal management is crucial for sustained biomechanical stability.

INDEX TERMS: Joint laxity, acetabular ventroversion, distraction index, degenerative joint disease, early diagnosis.

Abdominal urethrostomy in a young male cat with perineal fistula secondary to trauma: a case report

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Urethral obstruction is a life-threatening emergency in male cats and may result from urolithiasis, urethral plugs, idiopathic inflammation, or trauma. When urethral obstruction is associated with urethral rupture, urine extravasation into adjacent tissues may lead to perineal fistulas, cellulitis, abscesses, and systemic complications, including azotemia and electrolyte imbalances. Traumatic urethral injuries represent a particular clinical challenge because extensive tissue necrosis may preclude conventional surgical approaches, requiring salvage procedures. Prepubic urethrostomy is an alternative technique for cases in which the penile urethra is irreversibly compromised, allowing restoration of urinary flow through exteriorization of the proximal urethra cranial to the pubis. This report describes the clinical management of a three-month-old intact male domestic shorthair cat weighing 1.1 kg that was presented to a private veterinary clinic in Rio de Janeiro, Brasil, after vehicular trauma. Physical examination revealed a perineal wound with early tissue necrosis, a left-sided urinary fistula, and mild bladder distension suggestive of urethral rupture. Laboratory findings included leukocytosis and biochemical evidence of post-renal azotemia, with serum creatinine and urea concentrations of 2.6 mg/dL and 67 mg/dL, respectively. Urethral catheterization was unsuccessful because of extensive penile urethral damage, making perineal urethrostomy unfeasible. After clinical stabilization, the patient underwent prepubic urethrostomy combined with penectomy under general anesthesia. A ventral

caudal midline incision was performed, the proximal urethra was mobilized and sutured to the abdominal wall using 4-0 polyglactin 910, and penectomy was completed with anatomical layered closure. During hospitalization, the patient received antimicrobial therapy (ceftriaxone and metronidazole), multimodal analgesia (methadone, dipyrone, and ketamine), and anti-inflammatory treatment with meloxicam as part of the postoperative management. A urethral catheter was maintained for 72 hours to reduce the risk of stomal stenosis. Local postoperative care included irrigation of the stoma with sterile saline solution and 1% chlorhexidine, daily dressing changes, and continuous use of an Elizabethan collar. The patient was discharged without complications, maintaining adequate urination through the stoma, and complete wound healing was confirmed at the 60-day follow-up evaluation. According to the guardian, only mild, occasional urinary incontinence during periods of excitement was observed. The favorable outcome observed in this case is consistent with previous reports describing prepubic urethrostomy as a salvage technique for feline patients with irreversible penile urethral damage. The absence of stomal stenosis and infection may be associated with meticulous surgical technique and careful postoperative management. Therefore, when appropriately indicated and combined with rigorous postoperative care, prepubic urethrostomy may represent an effective and safe salvage option for restoring urinary function and improving the quality of life of cats with severe traumatic urethral injuries.

INDEX TERMS: Feline, prepubic urethrostomy, left-sided urinary fistula, urethral trauma, surgery.

Tibial plateau angle and tibial anatomical-mechanical axis angle in dogs with and without cranial cruciate ligament rupture: a radiographic cross-sectional study

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Cranial cruciate ligament (CrCL) rupture is one of the most prevalent orthopedic conditions in dogs, representing the leading cause of degenerative joint disease of the stifle. Unlike acute traumatic rupture observed in humans, CrCL insufficiency in dogs follows a multifactorial degenerative pathway in which abnormal tibial conformation — particularly increased tibial plateau angle (TPA) and tibial anatomical-mechanical axis angle (AMA) — is considered a significant biomechanical predisposing factor, as these geometrical parameters generate excessive cranial tibial thrust under axial loading. Accurate preoperative radiographic measurement of TPA is essential for planning tibial osteotomy procedures, especially tibial plateau leveling osteotomy (TPLO), which remains the gold-standard surgical technique. The aim of this study was to evaluate and compare TPA and AMA values in dogs with and without CrCL rupture seen at the “Policlínica Escola de Medicina Veterinária” of “Universidade Estácio de Sá” (UNESA), Rio de Janeiro, Brazil. A cross-sectional observational study was conducted from August 2024 to July 2025. Twenty-four dogs of varying breeds, body weight, sex, and age underwent standardized mediolateral stifle radiographs. CrCL rupture was confirmed by orthopedic examination (positive cranial drawer test and/or tibial compression test). TPA and AMA measurements were performed using the V Pop Pro software. Of the 24 animals evaluated, 19 (79.2%) had confirmed CrCL rupture and five (20.8%) remained unaffected, a sample imbalance that reflects the spontaneous clinical routine of the institution. Breeds most frequently represented in the CrCL group were undefined breed (n = 4), Yorkshire

Terrier (n = 4), and Pit Bull (n = 3), reflecting the mixed-breed urban population attended at the institution. Data were analyzed using descriptive statistics. In dogs with CrCL rupture, mean TPA was $27.86^\circ \pm 3.52^\circ$ and mean AMA was $4.73^\circ \pm 1.84^\circ$; in unaffected dogs, values were $27.36^\circ \pm 2.11^\circ$ and $5.12^\circ \pm 3.54^\circ$, respectively. The maximum TPA recorded was 35° in a Yorkshire Terrier, and the maximum AMA was 8.3° recorded in both a Yorkshire Terrier and an American Bully. Small-breed dogs (body weight < 13 kg) with CrCL rupture presented a mean TPA of $29.47^\circ \pm 3.44^\circ$ and mean AMA of $4.98^\circ \pm 2.20^\circ$, corroborating the higher conformational abnormality and ligament injury predisposition described for this size group. Although both TPA and AMA were numerically higher in the CrCL-positive group, the small sample size and the reduced control group limited formal inferential statistical analysis, though indicating a trend toward higher angles in affected stifles. Notably, all AMA values in both groups exceeded the 1.87° threshold previously reported as predictive of CrCL rupture, including dogs without confirmed ligament injury, suggesting that concomitant risk factors may modulate the expression of biomechanical predisposition. These findings reinforce that combined radiographic assessment of TPA and AMA provides clinically relevant information for surgical planning and risk stratification in canine stifle disease, and suggest that small-breed dogs with elevated tibial conformation angles may benefit from preventive orthopedic monitoring, despite the need for larger prospective samples to confirm these observations.

INDEX TERMS: Biomechanics, canine orthopedics, degenerative joint disease, stifle, tibial osteotomy.

Endophthalmitis associated with *Sporothrix schenckii* infection in a dog: a case report

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Endophthalmitis is a severe inflammation affecting the interior of the globe and may lead to blindness and consequent enucleation. Several microorganisms are involved in the etiopathogenesis of the disease and may infect patients through surgical procedures, trauma or

systemic infections. The aim of this abstract is to report a case of endophthalmitis secondary to sporotrichosis in a dog, addressing enucleation as part of the therapeutic approach adopted. A 4-year-old intact female dog weighing 5.5 kg was admitted to the “Hospital



Veterinário de Pequenos Animais” of the “Universidade Federal Rural do Rio de Janeiro” (UFRRJ). Historically, on day 0, the patient exhibited blepharospasm, pruritus, epiphora, and pain in the right eye (RE). Physical examination revealed pododermatitis in the right pelvic limb, complete corneal disruption in the RE, and non-ulcerative keratitis in the left eye (LE). Conjunctival hyperemia, ocular discharge, corneal opacity, and absence of visual acuity were observed bilaterally. Based on these findings, a diagnosis of endophthalmitis was established, and treatment with doxycycline and dexpanthenol was initiated. On day 14, due to a lack of therapeutic response, the patient was referred for surgical enucleation of the RE. On day 31, enucleation of the RE was performed. Evaluation of the LE on the day of surgery revealed signs of acute uveitis; therefore, 1% prednisolone eye drops (one drop BID for 7 days) were prescribed. On day 38, healing of the RE surgical site was observed; however, diffuse uveitis, corneal edema, and opacity were noted in the LE. Oral prednisolone (half a tablet SID for 5 days) and dexpanthenol eye drops (one drop BID for 7 days) were prescribed. On day 45, the LE showed slight improvement, and the previous treatment was maintained. On day 88, the patient developed a hemorrhagic mass in the LE, hyperemic mucous membranes, and severe pain. Enucleation of

the LE was recommended but was only performed on day 115. The enucleated tissue was submitted for histopathology and fungal culture. The culture revealed the presence of a fungus belonging to the *Sporothrix schenckii* complex. On day 130, during follow-up evaluation, the patient presented with sneezing, foamy nasal discharge, cutaneous nodules, and edematous, stenotic nostrils. Treatment with itraconazole (10 mg/kg, orally, SID) and intranasal clotrimazole spray was instituted for 60 days. By day 199, clinical improvement was observed, and treatment was extended for an additional 60 days. Although the cutaneous form of canine sporotrichosis is the most common presentation, ocular involvement has been reported, including uveitis and conjunctival granulomatous lesions associated with hyperemia, discharge, and edema. In the present case, the patient exhibited bilateral ocular involvement with progressive endophthalmitis. Furthermore, the history of cutaneous lesions combined with the lack of response to previous treatment suggests a correlation between the clinical presentation and infection by the *S. schenckii* complex. Thus, fungal isolation was essential for diagnostic confirmation and the establishment of appropriate antifungal therapy. This report highlights the importance of sporotrichosis as a differential diagnosis for chronic ocular disorders in dogs.

INDEX TERMS: Sporotrichosis, enucleation, fungal infection.

Use of posaconazole and intralesional amphotericin B as treatment of atypical aggressive cryptococcal infection in a domestic cat

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Cryptococcosis is a systemic mycosis caused by the fungi *Cryptococcus* spp., particularly *Cryptococcus gattii* and *Cryptococcus neoformans*, mainly characterized by upper respiratory tract signs. This report aims to describe an atypical aggressive manifestation of cryptococcosis in a domestic cat, with emphasis on the therapeutic approach. A three-year-old intact male cat weighing 2.920 kg was evaluated. The animal was rescued and examined at an external clinic three months before presentation due to a large spherical cranial mass that obstructed vision. Cytology was suggestive of *Cryptococcus* spp. infection. Oral itraconazole (100 mg/cat/day) was prescribed; however, clinical response was ineffective. On day 0, the cat presented with an ulcerated cranial mass measuring 62.3 mm and 31.5 mm along its largest axes. Anemia and lymphocytopenia were revealed through hematological assessment. Feline immunodeficiency virus (FIV) antibodies were detected. Cryptococcosis was confirmed by fungal culture, histopathology and RT-PCR of the mass fragment. Thus, oral posaconazole (15 mg/kg, every 24 hours for the first 7 days,

subsequently reduced to 7.5 mg/kg) and terbinafine (30 mg/kg, every 24 hours) were prescribed for 120 days. On day 28, mild clinical response and reduced granuloma ulceration were observed. On day 38, the cat presented with weight loss and persistent anemia was revealed through hematological analysis. The feline was hospitalized and underwent blood transfusion. An intralesional amphotericin B (AMB) protocol (0.5 mg/kg) was established, followed by subcutaneous administration of 80 mL of glucose-saline solution (50 mL of 25% glucose added to 450 mL of 0.45% NaCl solution) for three days, every seven days. Symmetric dimethylarginine, urea and creatinine were assessed before each intralesional AMB application to monitor renal function. Gradual weight gain and granuloma reduction were observed throughout treatment. On day 62, three-quarters of the mass was surgically excised, as its location precluded complete removal. Thereafter, intralesional AMB administration was maintained every 21 days, posaconazole was replaced by fluconazole (FCZ) (15 mg/kg), and terbinafine was discontinued. Although mild to moderate anemia is a common finding

in cryptococcosis, the development of an extremely aggressive local granuloma is rarely described, which highlights the unusual presentation observed in this case. Additionally, FIV-infected cats may develop a more severe clinical presentation and require extended therapy, as noted in this report. Whereas posaconazole possesses potent antifungal activity and is a choice when itraconazole is not effective, as noted in this report through clinical improvement, fluconazole has a more favorable safety profile of all the azoles, with significantly lower hepatotoxicity. FCZ combined with AMB is the first-line treatment for severe cases

of cryptococcosis, as in the present case. Moreover, intralesional therapy is important because antifungal agents may not penetrate well into poorly perfused tissues, which is highlighted by significant granuloma reduction after intralesional AMB was initiated in this report. Furthermore, since AMB is nephrotoxic, the administration was followed by glucose-saline fluid therapy to enhance drug elimination. In conclusion, prolonged multimodal therapy associated with intensive patient monitoring was efficient in this case of atypical aggressive cryptococcosis.

INDEX TERMS: Cryptococcosis, fungal granuloma, multimodal therapy.

Antimicrobial prescription profile in small animal practice: a retrospective One Health-oriented study

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Antimicrobial resistance is a major One Health concern, and appropriate prescribing in companion-animal practice is essential to preserve antimicrobial efficacy. This retrospective study characterized systemic antimicrobial prescriptions for dogs and cats attended at a small animal clinical service and identified practical targets for antimicrobial stewardship. Medical records from January 2023 to December 2025 were retrospectively reviewed. Records were eligible when at least one systemic antimicrobial had been prescribed during clinical care. For each prescription, the following information was extracted: species, main clinical indication, antimicrobial class, whether treatment was empirical or guided by culture and susceptibility testing, route of administration, treatment duration, use of monotherapy or combination therapy, microbiological testing, and short-term clinical outcome. Prescriptions were analyzed descriptively to determine the frequency of use of each antimicrobial class and to identify patterns associated with diagnostic support and follow-up documentation. A total of 128 antimicrobial prescriptions were included. Dogs accounted for 95/128 (74.2%) cases, whereas cats accounted for 33/128 (25.8%). Empirical treatment was recorded in 108/128 (84.4%) prescriptions, indicating that most antimicrobial decisions were based on the initial clinical assessment rather than microbiological confirmation. Dermatological disorders were the most frequent indications (36/128, 28.1%), followed by respiratory diseases (27/128, 21.1%), urinary tract disorders (22/128, 17.2%), and gastrointestinal conditions (14/128, 10.9%). The remaining prescriptions were associated with other

clinical presentations recorded in the medical files. Potentiated beta-lactams were the most commonly prescribed antimicrobials (40/128, 31.3%), followed by cephalosporins (25/128, 19.5%), doxycycline (19/128, 14.8%), metronidazole (16/128, 12.5%), and fluoroquinolones (14/128, 10.9%). Monotherapy was used in 93/128 (72.7%) cases, while 35/128 (27.3%) involved combination therapy, mainly in patients with severe clinical presentation or infections whose etiology remained undefined at the time of prescription. Oral administration predominated (101/128, 78.9%), and the mean treatment duration was 10.6 days. Culture and susceptibility testing was requested in 23/128 (18.0%) cases, particularly in recurrent, refractory, or hospitalized patients. Thus, although microbiological investigation was used in situations in which it was clinically more strongly indicated, its overall frequency was low relative to the total number of prescriptions. Clinical improvement at the first reassessment was documented in 92/128 (71.9%) records. Recurrence within 60 days was reported in 22/128 (17.2%) cases, highlighting the importance of reassessment and of recording subsequent clinical evolution when evaluating the appropriateness and effectiveness of empirical treatment. Antimicrobial use in this service was predominantly empirical, with limited culture and susceptibility testing. Standardized prescribing protocols, earlier microbiological investigation in selected cases, systematic reassessment, and continuing education should be prioritized to support rational antimicrobial use and antimicrobial stewardship in small animal practice.

INDEX TERMS: Antimicrobial stewardship, antimicrobial resistance, One Health, dogs, cats, small animal practice, retrospective study.

Clinical and radiographic profile of cats with suspected or confirmed feline asthma: a retrospective study

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Feline asthma is a common inflammatory lower airway disorder that may present with chronic cough, wheezing, expiratory effort, or acute respiratory distress. Thoracic radiography is widely used as an initial diagnostic tool, although radiographic patterns are not pathognomonic and must be interpreted with clinical findings. This retrospective descriptive study characterized the clinical and radiographic profile of cats with suspected or confirmed feline asthma evaluated at a veterinary teaching hospital from January 2020 to December 2025. Medical records and thoracic radiographs were reviewed, and cats were included when they had compatible respiratory signs, diagnostic-quality thoracic radiographs, and clinical follow-up sufficient to support a final diagnosis. Cats with heart failure, pleural effusion, pulmonary neoplasia, or confirmed infectious pneumonia were excluded. A total of 64 cats were included, with a median age of 5.2 years (interquartile range – IQR, 2.9-8.1); 42 (65.6%) were neutered, 39 (60.9%) were female, and 49 (76.6%) were mixed-breed cats. The most frequent clinical signs were cough (51/64, 79.7%), wheezing or audible expiratory sounds (30/64, 46.9%), expiratory effort (26/64, 40.6%), and acute dyspnea (22/64, 34.4%). Potential environmental triggers, such as dust, aerosols, household

cleaning products, smoke, or recent litter changes, were recorded in 36/64 cats (56.3%). Radiographic evaluation showed a bronchial pattern in 47/64 cats (73.4%), pulmonary hyperinflation in 33/64 (51.6%), a bronchointerstitial pattern in 22/64 (34.4%), focal lobar atelectasis in 11/64 (17.2%), and mild or nonspecific findings in 8/64 (12.5%). Bronchoalveolar lavage was available in 18 cats, showing eosinophilic inflammation in 12 (66.7%), mixed inflammation in four (22.2%), and neutrophilic inflammation in two (11.1%). Bronchial pattern associated with hyperinflation was more frequent in cats with acute dyspnea than in cats with chronic cough alone (72.7% vs. 42.9%; $p = 0.026$). Clinical improvement within 30 days after anti-inflammatory therapy and/or bronchodilator support was documented in 50/58 cats with available follow-up (86.2%). These findings reinforce that thoracic radiography is valuable in the initial assessment of feline asthma, particularly when bronchial pattern and hyperinflation are present. However, the occurrence of mild or nonspecific radiographic findings supports the need to integrate imaging with history, physical examination, therapeutic response, and airway sampling when available.

INDEX TERMS: Feline asthma, cats, thoracic radiography, bronchial disease, respiratory medicine.

Sweat gland adenocarcinoma of the feline lip: a case report of surgical treatment assisted by intraoperative histopathology

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Sweat gland adenocarcinomas are rare malignant neoplasms in felines, arising from apocrine sweat glands and characterized by locally invasive behavior. Surgical excision with adequate margins is the treatment of choice; however, achieving wide margins may be challenging in anatomically and functionally important regions. In such cases, intraoperative histopathology can assist in determining the extent of resection. This report describes the use of intraoperative frozen-section histopathology to guide surgical margin widening in a cat undergoing re-excision following incomplete removal of a sweat gland adenocarcinoma. An 8-year-old spayed female cat weighing 5.5 kg was referred to the “Hospital Veterinário de Pequenos Animais” of the “Universidade Federal Rural do Rio de Janeiro” (UFRRJ), Brasil, 22 days after a nodulectomy of the left upper lip performed at another veterinary service. Histopathological examination had revealed a moderately differentiated sweat gland adenocarcinoma

composed of infiltrative tubular epithelial proliferation with occasional cellular atypia and incomplete surgical margins. Abdominal ultrasonography and thoracic radiography showed no evidence of metastatic disease. Following laboratory and cardiologic evaluation, the patient was deemed a suitable surgical candidate and underwent a left mandibular lymphadenectomy combined with surgical margin widening. During surgery, specimens from the surgical margins and the lymph node were submitted for intraoperative frozen-section evaluation, allowing immediate microscopic assessment. The analysis confirmed tumor-free margins, enabling the surgical margins to be limited to approximately 0.5 cm around the lesion rather than the standard 2–3 cm margins commonly recommended for malignant cutaneous tumors. Conventional histopathology subsequently confirmed fibrosis and the absence of neoplastic cells in all surgical margin samples, while the mandibular lymph node exhibited



reactive lymphoid hyperplasia without evidence of metastasis. The resulting surgical defect measured approximately 1 cm and was closed with 4-0 nylon sutures without tension. At 14 days postoperatively, the patient showed satisfactory wound healing with no complications. Positive margins identified after the initial procedure justified surgical reintervention to achieve adequate local control. However, because the lesion involved the left upper lip, extensive resection could have resulted in significant functional impairment. In this context, intraoperative histopathology allowed

a more precise definition of the resection boundaries, maximizing tissue preservation while maintaining oncologic surgical principles. Although frozen-section analysis has inherent limitations and its findings must be confirmed by conventional histopathology, it proved to be a valuable aid for intraoperative decision-making. This case highlights the importance of combining oncologic surgery with intraoperative histopathology to achieve complete tumor excision while preserving tissue in neoplasms affecting the oral cavity.

INDEX TERMS: Feline oncology, frozen section, margin assessment.

Disseminated histoplasmosis with bone marrow involvement in a dog and possible associated fungal infection in a human contact: a case report

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Histoplasmosis is a systemic disease caused by the dimorphic fungus *Histoplasma capsulatum*. Infection occurs through inhalation of environmental macroconidia, whose proliferation is favored by bat and bird droppings. After reaching the lungs, the fungus assumes a yeast form, is phagocytosed by macrophages, and may disseminate systemically. This study reports a case of disseminated histoplasmosis with bone marrow involvement in a dog with severe anemia and a possible association with fungal infection in a human contact. A 7-year-old intact male Pit Bull dog presenting with nodular and ulcerative skin lesions distributed throughout the body was examined at the Veterinary Hospital of the "Universidade Federal Rural do Rio de Janeiro" (UFRRJ). The animal had a history of empirical short-term itraconazole treatment two years earlier, with a moderate response; however, recurrence occurred after discontinuation of the medication. The owner reported the presence of bats in the patient's environment and previous contact with a human diagnosed with fungal pneumonia. Physical examination revealed a body condition score of 4/9, pale mucous membranes, generalized lymphadenomegaly, nail bed lesions, swelling of the nasal planum, ulcerative wounds, and disseminated nodules. Initial laboratory findings were consistent with severe normocytic normochromic anemia, with a hematocrit of 13% and hemoglobin concentration of 4.3 g/dL. Lymph node cytology revealed fungal granulomatous lymphadenitis, while skin scrapings demonstrated pyogranulomatous inflammation with yeast cells. The animal underwent blood transfusion, followed by collection of tissue fragments from ulcerative lesions for fungal culture and histopathological analysis. Itraconazole was prescribed at 10 mg/kg orally once daily. Fungal culture resulted

in the isolation and identification of *H. capsulatum*. Histopathological examination revealed numerous yeast cells, predominantly intracellular within macrophages. After 19 days of treatment, lesion improvement was observed. A follow-up complete blood count showed macrocytic hypochromic anemia, with a hematocrit of 15% and hemoglobin concentration of 4.5 g/dL, and the animal underwent a second blood transfusion. Polymerase chain reaction (PCR) performed on a bone marrow sample detected *Histoplasma* spp., confirming disseminated histoplasmosis as the probable cause of the anemia. Itraconazole therapy was maintained, and after 40 days, reevaluation showed lesion regression. Moderate anemia persisted, with a hematocrit of 22% and hemoglobin concentration of 7.1 g/dL. After 120 days of therapy, no abnormalities were observed on physical or hematological examinations. There is no evidence of zoonotic transmission of *H. capsulatum*, suggesting that the infection reported in the human contact was associated with shared environmental exposure. In this context, diagnosis in the dog acquires relevance from both clinical and epidemiological perspectives, as a potential indicator of environmental contamination. Furthermore, detection of *Histoplasma* spp. by PCR in bone marrow demonstrated important diagnostic value by confirming systemic dissemination, especially in the presence of persistent severe anemia. Although asymptomatic histoplasmosis is the most common presentation of the disease, this patient exhibited an atypical manifestation characterized by bone marrow involvement. This report highlights the importance of an integrated diagnostic approach and appropriate treatment in an uncommon presentation of canine histoplasmosis, as well as its relevance to One Health.

INDEX TERMS: *Histoplasma capsulatum*, systemic mycosis, zoonosis.

Plate dynamization after osteosynthesis of the radius and ulna in a toy-breed dog: a case report

31. Brum ACS, Massoleni MIG, Costa CAM, Moretz-Sohn EG, Silva RP, Vivas DG. *Pesquisa Veterinária Brasileira* 46(Supl.):27. Departamento de Cirurgia de Pequenos Animais, Universidade Estácio de Sá, Estrada da Boca do Mato 850, Vargem Pequena, Rio de Janeiro, RJ 22783-320, Brasil. E-mail: anacarolsbrum@gmail.com

Distal radius and ulna fractures in miniature dog breeds constitute one of the most challenging orthopedic conditions in small animal veterinary medicine due to reduced soft tissue coverage, limited periosteal vascularization, and the biomechanical characteristics of these bones, predisposing them to complications such as delayed union, nonunion, and stress-shielding osteopenia. This report describes the use of gradual plate dynamization to treat stress-shielding osteopenia after osteosynthesis. A two-year-old, 3.2 kg Yorkshire Terrier bitch underwent fixation of a transverse distal radial and ulnar diaphyseal fracture using a 1.5 mm titanium locking plate. Preoperative evaluation revealed no clinically relevant abnormalities. Immediate postoperative radiographs confirmed satisfactory fracture reduction and implant positioning. Serial radiographic evaluations performed at 30, 60, and 90 days demonstrated progressive reduction in bone radiodensity adjacent to the implant, compatible with stress-shielding osteopenia, accompanied by mild lameness. Plate dynamization was initiated by sequential

removal of the two central screws. Thirty days later, radiographic examination demonstrated improved bone radiodensity, allowing removal of the distal screws. Progressive fracture union was subsequently observed, together with restoration of limb function and absence of clinically significant lameness. The remaining implants were removed 90 days after plate dynamization, corresponding to 180 days after the initial surgery, without complications. Stress shielding is a clinically relevant complication following locking plate osteosynthesis in toy-breed dogs, highlighting the importance of serial radiographic monitoring for early diagnosis. In this case, gradual plate dynamization promoted progressive restoration of physiological mechanical loading, with radiographic improvement of bone quality and successful fracture healing. Although based on a single clinical case, this approach may represent an effective therapeutic strategy for selected patients with stress-shielding osteopenia after fracture fixation. Individualized biomechanical evaluation should be considered in each case.

INDEX TERMS: Stress shielding, bone healing, locking plate, postoperative osteopenia, bone remodeling.

Diagnostic challenge of canine sporotrichosis: confirmation by tissue fragment culture after negative initial examinations — case report

32. Lima YL, Santos BL, Albuquerque EC, Cerqueira LA, Monte CSLE, Alves CC, Figueiredo P, Alberigi B. *Pesquisa Veterinária Brasileira* 46(Supl.):27. Departamento de Medicina e Cirurgia Veterinária, Instituto de Veterinária, Universidade Federal Rural de Rio de Janeiro, Rodovia BR-465 Km 7, Seropédica, RJ 23890-000, Brasil. E-mail: yasminlopes13@ufrj.br

Sporotrichosis is an infectious disease caused by dimorphic fungi of the *Sporothrix schenckii* complex, particularly *Sporothrix brasiliensis* and is commonly associated with zoonotic outbreaks in Brasil. In dogs, the disease usually manifests as nodular or ulcerative cutaneous and subcutaneous lesions that may progress to respiratory signs. Diagnosis is based on identification of the agent by cytopathology, histopathology, or culture, the latter considered the gold standard. In dogs, diagnosis can be more challenging because of the lower fungal burden in lesions. This case report highlights the importance of appropriate biological sample selection for the diagnosis of canine sporotrichosis. A 12-year-old mixed-breed, neutered male dog with a history of outdoor access was examined at the Veterinary Hospital of the “Universidade Federal Rural do Rio de Janeiro” (UFRRJ). The patient presented an ulcerative lesion on the nasal bridge, bilateral enlargement of

the nostrils, abundant nasal discharge, inspiratory dyspnea, and episodes of sneezing. According to the owner, the patient had presented a similar condition approximately one year earlier, with clinical remission following a short course of empirical antifungal treatment. However, recurrence occurred, followed by gradual progression of the clinical signs. Initially, fine-needle aspiration and sterile swab collection of the lesion were performed for fungal and bacterial cultures. Cytopathology revealed active chronic inflammation without associated microorganisms. Mycological culture showed no growth, whereas bacterial culture yielded *Staphylococcus* spp., interpreted as a secondary bacterial infection. Therefore, an incisional biopsy was performed for histopathological examination and fungal culture of the tissue sample. Histopathological examination, as well as Grocott’s methenamine silver and Ziehl-Neelsen special stains for the detection of

fungal yeasts and acid-fast bacilli, respectively, did not reveal infectious agents. In contrast, mycological culture of the tissue fragment enabled isolation and identification of *Sporothrix* spp. Treatment with itraconazole (10 mg/kg, orally, SID) was instituted for an initial 60-day period. Significant clinical improvement of the cutaneous lesions was observed after 30 days of treatment, with complete remission after the initially prescribed 60-day period. In the present report, the diagnosis of canine sporotrichosis was challenging because the low fungal burden in canine lesions can limit the sensitivity of conventional diagnostic methods. Cytopathology revealed only active chronic inflammation, while mycological culture of the swab sample did not enable isolation of the agent. Although

histopathology is an important tool for investigating chronic ulcerative lesions, in this case it did not enable etiological identification even with special stains. In contrast, mycological culture of the tissue fragment obtained by biopsy enabled isolation of *Sporothrix* spp., demonstrating that biological sample selection was decisive for definitive diagnosis. Furthermore, the favorable response to itraconazole supported the diagnosis and reinforced the importance of etiological confirmation. This case demonstrates that initial negative results do not exclude canine sporotrichosis. It highlights appropriate biological sample selection as essential for improving diagnostic sensitivity and enabling timely institution of appropriate therapy.

INDEX TERMS: *Sporothrix brasiliensis*, biopsy, systemic mycosis.

Radiographic presentation of incomplete Cantrell syndrome in a domestic cat

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Cantrell's pentalogy is a rare congenital syndrome characterized by the presence of five specific defects in the closure of the thoracoabdominal midline: (1) a cleft sternum, (2) a midline abdominal wall defect, (3) an intracardiac anomaly, (4) a deficit of the anterior diaphragm and (5) a defect in the diaphragmatic pericardium. An incomplete expression comprehends various combinations of defects present but consistently includes a sternal abnormality. A sternal cleft is an exceedingly rare anomaly in veterinary medicine and pertains to a congenital malformation characterized by incomplete fusion of the midline sternebrae and the xiphoid process. A cleft sternum leaves the heart and great vessels unprotected and may occur concomitantly with diaphragmatic and peritoneopericardial hernias. The presenting report aims to describe the radiographic features of incomplete Cantrell's syndrome in a female short-haired domestic cat. Thoracic radiographs of an adult female cat of unknown age were received for radiographic evaluation. The animal had been referred for radiographic examination due to panting, with clinical suspicion of a possible diaphragmatic hernia. The images revealed fusion of the manubrium to the second sternebrae, and the remaining sternebrae were doubled and divergent, consistent with a cleft sternum. In the left lateral view, a cranial position and flattening of the diaphragmatic dome are observed. There is

increased pulmonary opacity, prominent in the right hemithorax, obliterating the visualization of the cardiac margins and the right hemidiaphragm. Images of gas opacity were also observed in the right hemithorax, suggesting the presence of abdominal viscera in the thoracic cavity (possibly intestinal loops, falciform fat, and parts of the stomach and liver due to the apparent cranial displacement of these structures in the lateral views) and possibly also into the pericardial cavity (peritoneopericardial hernia). The trachea is patent, without alteration in the dimensions of its lumen; however, it is dorsalized with a course parallel to the ventral surface of the thoracic vertebral bodies. In this case, the patient shows cranial abdominal hernia, peritoneopericardial hernia in addition to a cleft sternum, characterizing incomplete Cantrell syndrome. Because a cleft sternum may be related to congenital abnormalities and abdominal and diaphragmatic hernias, this finding should not be overlooked, and investigation of other structures such as the heart, pericardium, cranial ventral abdominal wall, diastasis of the rectus abdominis muscle, and sternal portion of the diaphragm is required. To our knowledge, this is the first description of the arrangement of the hemisternebrae in an "inverted Y"-shaped configuration, which differs from what was previously reported, where the sternebrae describe a "U" or "V"-shaped configuration.

INDEX TERMS: Veterinary diagnostic imaging, feline, congenital abnormalities, sternal cleft, peritoneopericardial diaphragmatic hernia, thoracic.

Surgical management of oral and palpebral melanoma in a dog using rostral maxillectomy and a superficial temporal artery flap: case report

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Melanoma is a malignant neoplasm of melanocytic origin that can affect cutaneous and mucosal structures. Among oral cavity neoplasms, it stands out for its highly aggressive behavior, characterized by infiltrative growth, high recurrence rates, and strong metastatic potential. It is frequently associated with a poor prognosis. The occurrence of melanomas in different concomitant anatomical sites is not commonly described, as these tumors are usually reported as primary lesions with specific locations, despite the possibility of multiple foci within the same region. Therefore, this study aims to report a case of sequential surgical excision in a dog affected by palpebral and oral melanoma, emphasizing the clinical-surgical management, diagnostic findings, and prognostic implications. A 10-year-old male mixed-breed dog weighing 25 kg was evaluated at the "Hospital Veterinário de Pequenos Animais" of the "Universidade Federal Rural do Rio de Janeiro" (UFRRJ), presenting a nodular formation in the right upper eyelid measuring 4 cm × 2 cm. In addition, an oral cavity neoplasm measuring 1.5 cm in diameter was identified. Cytological evaluation of both lesions was suggestive of melanoma, and surgical excision with safety margins was recommended, along with sentinel lymph node dissection for tumor staging. Imaging exams, including abdominal ultrasonography and thoracic radiography, showed no evidence of distant metastasis. The palpebral nodule was excised, followed by reconstruction using a right superficial temporal artery axial pattern flap to cover the defect. The tarsal plate was preserved to maintain the natural corneal protection provided by the tarsus and preserve eyelid function. A left rostral maxillectomy was also performed to remove

the maxillary segment from the left third upper incisor to the third premolar, associated with mandibular and retropharyngeal lymphadenectomy. No intraoperative or postoperative complications occurred, and healing was satisfactory. Histopathological analysis confirmed melanoma in both regions, as well as metastasis in the right submandibular lymph node. Due to lymph node metastatic staging and the aggressive nature of melanoma, initiation of a chemotherapy protocol was recommended. However, despite the indication, the patient did not undergo adjuvant treatment due to the owner's financial limitations. Therefore, despite satisfactory surgical recovery, imaging examinations performed three months after surgery revealed pulmonary nodules and splenic alterations suggestive of metastasis, as well as enlargement of peripheral lymph nodes. Despite disease progression, three months after the surgical procedure, the animal maintained quality of life, with no respiratory or feeding abnormalities. Oral melanoma in dogs is a neoplasm with high biological aggressiveness, mainly affecting elderly animals, with a higher incidence in dogs over 10 years of age, accounting for 30–40% of oral tumors in dogs. Effective local control was achieved through rostral maxillectomy and palpebral lesion excision for three months, despite the complexity of the surgical procedures. However, the lack of systemic treatment may have contributed to early disease progression, evidenced by suspected metastasis within a short period of time. Surgical treatment remains the main approach for local control, and rostral maxillectomy is indicated for tumors located in the rostral region of the maxilla, allowing removal with adequate margins.

INDEX TERMS: Reconstructive surgery, oral neoplasia, metastasis, canine melanoma, rostral maxillectomy, veterinary oncology.

Antimicrobial resistance surveillance in veterinary medicine: a six-year retrospective study in dogs and cats

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Antimicrobial resistance represents one of the major threats to global health. From the One Health perspective, in veterinary medicine, the frequent use of antimicrobials in companion animals contributes to the selection and dissemination of resistant bacteria. In this context, microbiological data from the Veterinary Hospital of "Universidade Federal Rural do Rio de Janeiro" (UFRRJ), collected from 2016 to 2021, were analyzed, focusing on the identification of bacterial resistance and multidrug resistance, since knowledge of local

antimicrobial resistance patterns is essential to guide clinical therapy and reduce therapeutic failures. A total of 2,022 clinical samples from dogs and cats processed by the Microbiological Diagnostic Sector of the Veterinary Hospital of UFRRJ from 2016 to 2021 were analyzed. The annual distribution was 471 in 2016, 485 in 2017, 424 in 2018, 355 in 2019, 134 in 2020, and 153 in 2021. The data were obtained from consolidated laboratory spreadsheets containing antimicrobial susceptibility testing (AST) results interpreted according to the 2026

BrCAST guidelines. Only valid bacterial isolates classified as susceptible, susceptible with increased exposure, or resistant were included. Multidrug resistance (MDR) was defined as resistance to three or more classes of antimicrobials. Comparative annual analyses were performed using the absolute frequency and percentage of isolates resistant to the main antimicrobials tested. Initially, it was possible to observe a marked increase in the multidrug resistance rate, rising from 36% in 2016 to a peak of 70.8% in 2018, followed by a reduction to 55% in 2019, 40% in 2020, and 46.3% in 2021. Antimicrobials in the fluoroquinolone class, especially enrofloxacin, showed high resistance rates throughout most of the period analyzed. Resistance to sulfamethoxazole-trimethoprim also remained consistently high. In contrast, first-generation β -lactams and aminoglycosides maintained moderate levels of susceptibility. The main bacterial species isolated were *Staphylococcus pseudintermedius*, *Escherichia coli*, *Klebsiella* spp., and *Enterobacter* spp., mainly associated with urinary, dermatological, and otological infections. The results highlight the increasing selective pressure exerted by

antimicrobial use in companion animal clinical practice, particularly on fluoroquinolones and sulfonamides. The high frequency of multidrug-resistant microorganisms reinforces the need to adopt antimicrobial stewardship programs consisting of strategies designed to promote the rational, responsible, and evidence-based use of antimicrobials, with the aim of maximizing therapeutic efficacy, reducing the emergence and spread of antimicrobial resistance, and preserving the effectiveness of these drugs for future generations. The reduction observed in multidrug resistance rates in 2020 and 2021 should be interpreted with caution, as this period coincided with the COVID-19 pandemic, which reduced the number of samples processed by the laboratory. Therefore, the decrease in MDR rates observed during these years may reflect, at least partially, the effects of the operational changes imposed by the pandemic, rather than necessarily indicating a sustained reduction in bacterial resistance. The persistence of high levels of resistance to sulfamethoxazole-trimethoprim and the maintenance of moderate to high resistance to other antimicrobial classes corroborate this interpretation.

INDEX TERMS: Bacteriology, One Health, companion animals, enrofloxacin, microbiological surveillance, fluoroquinolones, infectious diseases.

Evaluation of heart rate variability and cardiac rhythm in dogs with chronic bronchitis and mitral valve disease treated with aminophylline using 24-hour Holter monitoring

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Chronic bronchitis is a common respiratory disease in small-breed dogs, particularly in middle-aged and geriatric animals, often requiring long-term treatment with bronchodilators such as aminophylline. Despite its therapeutic benefits, aminophylline may induce adverse cardiovascular effects, including alterations in heart rate and cardiac rhythm, which may be especially concerning in dogs concurrently affected by myxomatous mitral valve disease (MMVD). MMVD is characterized by progressive degeneration of the mitral valve apparatus, resulting in mitral regurgitation and, in advanced stages, congestive heart failure (CHF). The onset of CHF triggers compensatory mechanisms, notably increased sympathetic activity and reduced parasympathetic tone, leading to changes in cardiac autonomic modulation that are reflected by a reduction in heart rate variability (HRV), an important indicator of autonomic function and cardiovascular health. Given the potential cardiovascular effects of aminophylline and the autonomic dysfunction already present in dogs with MMVD, this study aimed to evaluate the effects of aminophylline on heart rate variability and cardiac rhythm in dogs with chronic bronchitis and MMVD using 24-hour Holter monitoring. Eight animals were included in the study and underwent Holter monitoring on day

0; after removal, they started oral aminophylline every 12 hours at 10 mg/kg for 30 days, with re-evaluation on day 30. Clinical improvement was assessed through a clinical sign score (cough and respiratory effort), congestion indices, evaluation by the responsible veterinarian, and owner-reported outcomes. Holter monitoring was performed with the Nomad® device (Micromed). Parameters evaluated included minimum, average, and maximum heart rate, number of QRS complexes, and HRV in the time domain (SDNN, SDANN, SDNN index, rMSSD, and pNN50) and frequency domain (HF, LF, VLF, ULF, and LF/HF). Data were compared using the non-parametric Wilcoxon signed-rank test ($p < 0.05$), with medians and interquartile ranges calculated. There was a significant reduction in very low frequency (VLF) between D0 and D30 ($p = 0.017$), while the remaining HRV parameters showed no significant changes. Since VLF reflects slow regulatory mechanisms involving autonomic and neurohormonal influences, this finding suggests a modification of cardiovascular modulation; however, it should be interpreted with caution, as the physiological mechanisms underlying this component are not yet fully understood in dogs. Moreover, the absence of concomitant changes in the other HRV indices limits inference about sympathetic or

parasympathetic activity at that time point. Considering the clinical improvement observed in the animals, this finding may instead reflect reduced activation of the neurohormonal and autonomic mechanisms involved in long-term cardiovascular regulation. These results

reinforce the need for further studies with a larger sample size to clarify better the cardiovascular effects of aminophylline in dogs with chronic bronchitis and MMVD, and its real influence on heart rate variability and autonomic stability in these patients.

INDEX TERMS: Continuous electrocardiography, autonomic nervous system, bronchodilator therapy.

Evaluation of cardiovascular and laboratory parameters in dogs naturally infected with *Dirofilaria immitis*

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Canine heartworm (HTW), caused by the nematode *Dirofilaria immitis*, is an endemic parasitic disease in tropical and subtropical regions, with clinical presentation ranging from asymptomatic infection to severe cardiopulmonary disease and right-sided congestive heart failure. This study aimed to characterize the clinical, laboratory, and cardiovascular findings of dogs naturally infected with the parasite, attended at the Veterinary Clinic of “Universidade Veiga de Almeida”, Cabo Frio Campus. Thirteen dogs suspected of HTW were evaluated from August to November 2025, and all were seropositive by *enzyme-linked immunosorbent assay (ELISA)* for *D. immitis* antigen. Seven dogs were excluded due to comorbidities or concurrent medication use, and six dogs meeting the inclusion criteria were enrolled in the study. Most were mixed-breed, with a mean age of 6.6 ± 2.5 years, and diagnosis was an incidental finding during routine consultations. None of the owners used heartworm preventives, and some were unaware of the disease, despite the Região dos Lagos being an endemic area. Although only one owner reported coughing, all dogs had increased expiratory lung sounds on auscultation, suggesting respiratory compromise related to pulmonary vascular changes. Hematological alterations included thrombocytopenia with macroplatelets in three dogs, eosinophilia in two

dogs, and hypersegmented neutrophils in two dogs, consistent with chronic inflammation. Microfilariae were detected by the modified Knott test in only two dogs, reflecting the limited sensitivity of microfilaria detection in this sample. Biochemical changes included hyperglobulinemia in three dogs and elevated alanine aminotransferase (ALT) and creatinine in two dogs, suggestive of chronic inflammation with possible hepatic and renal involvement. Echocardiography revealed no significant cardiovascular alterations attributable to HTW, aside from the observation of adult worms in the pulmonary artery in one dog, a finding likely associated with the early stage of infection in this sample. These findings suggest that HTW may remain subclinical despite laboratory and respiratory alterations consistent with chronic disease, although the small sample size and the absence of a control group limit this interpretation. The high proportion of seropositive dogs and the lack of preventive use observed among these suspected cases reinforce the relevance of early diagnosis and owner awareness in this endemic region. The combined use of serological, laboratory, and echocardiographic evaluation may support earlier detection and management of canine dirofilariasis in endemic areas.

INDEX TERMS: Canine dirofilariasis, hematological alterations, cardiovascular findings.

Use of dapagliflozin as adjunctive therapy in a cat (*Felis catus*) with insulin-resistant diabetes mellitus: case report

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Feline diabetes mellitus (DM) is characterized by persistent hyperglycemia. Treatment relies on insulin therapy, dietary management, glycemic monitoring, and, more recently, sodium-glucose cotransporter 2

(SGLT2) inhibitors. This report describes a case of difficult-to-control insulin resistance in a domestic cat undergoing multimodal therapy. An 11-year-old, obese, neutered male cat presented with progressive weight



loss, dry feces, lameness, a plantigrade stance, and the triad of polyuria, polydipsia, and polyphagia, consistent with feline DM. Clinical suspicion was confirmed by persistent hyperglycemia and hyperfructosaminemia. A complete blood count revealed hemoconcentration due to dehydration and a stress leukogram. Serum biochemistry showed hypercholesterolemia and alterations consistent with a lipid metabolism disorder secondary to the underlying disease. Therapy with Lantus® insulin (3 IU BID), nutritional management, and increased water intake were initiated. Treatment was carried out in a home setting with periodic outpatient follow-up. After one month of treatment, hyperglycemia, hyperfructosaminemia, diabetic neuropathy, and nocturnal polyphagia persisted. Due to the unsatisfactory response, the insulin dose was increased to 4 IU BID, yet without adequate clinical resolution. This suggests that insulin therapy and nutritional management may be insufficient for glycemic control in some cats, particularly those with specific metabolic disorders and possible functional exhaustion of pancreatic β -cells. Given the persistent hyperglycemia, feline hypersomatotropism (feline acromegaly) was investigated as a possible comorbidity associated with resistance to glycemic control; however, the results were inconsistent with this endocrinopathy. Diabetic neuropathy is caused by chronic hyperglycemia, which leads to metabolic alterations and peripheral axonal damage, resulting in muscle weakness and a plantigrade stance. Forxiga® 10 mg ($\frac{1}{4}$ tablet once daily) was introduced as an adjunctive therapy. Following the introduction of dapagliflozin, the insulin

regimen was adjusted — reducing basal insulin to 1 IU once daily — due to progressive improvement in glycemic control. SGLT2 inhibitors affect renal tubular glucose reabsorption, promoting glucosuria and lowering blood glucose levels independently of insulin action. One month after the medication was introduced, clinical improvement was confirmed, evidenced by a reduction in diabetic neuropathy and improved metabolic control. The combination of long-acting insulin therapy and modern oral agents demonstrates potential benefits for glycemic control and the management of complications secondary to chronic hyperglycemia. Despite the satisfactory response, the use of dapagliflozin has limitations. The drug is not officially approved for veterinary use in Brazil and is administered off-label based on specialized literature. SGLT2 inhibitors are recommended for clinically stable patients with preserved food intake and residual pancreatic beta-cell function. Furthermore, there is a risk of euglycemic diabetic ketoacidosis, particularly in patients with anorexia or concurrent diseases. The resulting glucosuria can promote weight loss and cachexia, requiring continuous monitoring. In conclusion, multimodal therapeutic approaches may represent a promising alternative in selected cases of feline diabetes mellitus refractory to conventional treatment. In this report, the combination of insulin therapy, nutritional management, and dapagliflozin proved effective. However, as this is an individual observation, these findings should not be generalized; further studies are needed to evaluate safety and efficacy on a larger scale.

INDEX TERMS: SGLT2 inhibitor, multimodal therapy, persistent hyperglycemia, off-label treatment.

Congenital hypothyroidism in a cat with maintenance of euthyroidism after levothyroxine discontinuation: case report

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Congenital hypothyroidism (CH) is a rare endocrinopathy in felines characterized by a deficiency in thyroid hormone production during development, which can result in growth retardation, neurological alterations, and metabolic impairment. This report aims to describe the clinical and hormonal progression of a cat diagnosed with CH undergoing levothyroxine therapy, followed by the discontinuation of the aforementioned drug, including the maintenance of euthyroidism after treatment discontinuation. A 2-month-old intact female weighing 0.350 kg was presented with low weight gain, lethargy, growth retardation, and a retained kitten coat. Hormonal evaluation revealed a *thyroid-stimulating hormone* (TSH) level of 8.21 ng/mL (reference: 0.03–0.30) and total T4 of 6.0 ng/mL (reference: 15.0–30.0), compatible with CH. Treatment

was initiated with levothyroxine at 30 mcg/kg SID, initially in a compounded liquid formulation, with adjustments made according to weight gain. After one month of treatment, a weight gain of 240 g, increased activity, clinical improvement, and normalization of total T4, associated with a progressive reduction in TSH, were observed. At five months of age, the patient showed a weight gain of 970 g compared to the previous evaluation, behavior consistent with a healthy kitten, and a significant reduction in the phenotypic changes associated with CH, presenting a transient hormonal fluctuation with a mild reduction in total T4 levels and persistence of TSH above the reference range. At seven months, she weighed 2.22 kg with no clinical signs compatible with CH and normalized TSH and T4 levels, while maintaining continuous levothyroxine treatment.



At 14 months of age, during a routine re-evaluation, the owner reported spontaneous discontinuation of the medication three months prior, with no clinical recurrence. Hormonal tests demonstrated a total T4 of 22 ng/mL and TSH of 0.07 ng/mL, associated with the maintenance of proper physical and cognitive development. Given the clinical and laboratory stability, the decision was made not to reintroduce levothyroxine. The maintenance of euthyroidism after treatment discontinuation represents an uncommon finding

in the veterinary literature, potentially suggesting partial functional thyroid recovery or delayed gland maturation. It is concluded that CH should be considered in the differential diagnosis of developmental delay in young felines, with early diagnosis and treatment being essential for clinical improvement and proper development. However, as this is a single case report, additional studies are required to better understand the clinical and hormonal progression of these patients.

INDEX TERMS: Congenital hypothyroidism, levothyroxine, treatment discontinuation, euthyroidism, clinical stability.

Uterine STUMP granuloma causing ureteral obstruction and unilateral hydronephrosis in a female dog: diagnostic and surgical approach

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Ovariohysterectomy (OH) is one of the most frequently performed surgical procedures in small animal veterinary medicine, widely indicated for population control and prevention of reproductive tract diseases such as pyometra and uterine and ovarian masses. Although considered a safe technique, late complications can occur, including the formation of uterine stump granulomas, chronic inflammatory changes frequently associated with the presence of non-absorbable suture material, residual infection, or remnant ovarian syndrome. These lesions can remain asymptomatic for long periods, hindering early diagnosis. This study aimed to report the clinical, ultrasonographic, tomographic, surgical, and histopathological findings of a female dog with uterine stump granuloma associated with unilateral ureteral obstruction and secondary hydronephrosis, highlighting the importance of imaging diagnosis and surgical intervention. This report describes the case of a 12-year-old spayed mixed-breed female dog that underwent ovariohysterectomy approximately eight years prior and developed ureteral obstruction secondary to a uterine stump granuloma. During an ultrasound examination performed for oncological follow-up, a formation in the uterine stump was incidentally identified, with development of hydroureter and hydronephrosis on the left due to extrinsic compression of the ureter by the mass. Abdominal ultrasound was fundamental in detecting the initial changes, showing enlargement of the left kidney, dilation of the renal pelvis and ureter, as well as the close relationship between the mass and the affected ureter. However, due to the difficulty in precisely delimiting the origin and extent of the lesion, computed tomography was performed, allowing characterization of the lesion in the uterine STUMP region and confirmation

of ureteral involvement, demonstrating almost complete obstruction of the left ureter. The tomography proved essential for surgical planning. Given the severity of the condition, surgical intervention was chosen. The procedure consisted of complete resection of the mass associated with ureteroneocystostomy, a technique used to reimplant the ureter into the urinary bladder and restore urinary flow. During surgery, it was observed that the ureter passed directly through the mass. After removal of the lesion, a non-absorbable suture thread was identified inside, later confirmed by histopathological examination as the cause of a chronic pyogranulomatous inflammatory process associated with a foreign body. In the postoperative period, the patient presented favorable clinical evolution, remaining active and urinating normally. Serum biochemical parameters remained within reference ranges throughout follow-up, with no evidence of renal dysfunction. Ultrasound examinations performed after three days, thirty days, and seven months demonstrated progressive regression of hydronephrosis and hydroureter, evidencing satisfactory recovery of the urinary tract. It is concluded that uterine stump granulomas, although uncommon, can cause severe and silent ureteral obstruction years after OH. The combination of ultrasound and computed tomography was crucial for diagnosis and treatment planning. In this case, complete resection of the lesion associated with ureteroneocystostomy was associated with restoration of urinary flow and progressive regression of urinary tract abnormalities during follow-up. Furthermore, the patient maintained good clinical condition, normal renal biochemical parameters, and no postoperative complications throughout the follow-up period.

INDEX TERMS: Spayed female dogs, foreign body, ovariohysterectomy, renal pelvis, pyogranuloma, ureteroneocystostomy.

Canine stress during veterinary consultations: veterinarians' perceptions of its impact on clinical examination and professional safety

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Stress resulting from clinical restraint triggers neuroendocrine changes that distort essential physiological data — such as heart and respiratory rates — thereby compromising diagnostic accuracy. Furthermore, fear and anxiety reactions generated by negative experiences result in defensive behaviors that increase canine reactivity in subsequent consultations, hinder proper physical examination, and threaten staff safety. Therefore, this study aimed to evaluate the perception of small animal veterinarians regarding canine behavior during consultations and its impact on the well-being of both the patient and the professional. The research was conducted using an anonymous digital questionnaire (Google Forms). The instrument, developed by the authors, collected quantitative and qualitative data on the identification of behavioral signs of stress, the influence of these reactions on the conduct of the clinical examination, and the implications for the routine of care. A sample of 100 responding professionals was obtained. The emotional impact of attending to reactive canine patients, specifically those exhibiting fear, anxiety, or aggression (with each emotional manifestation described in the questionnaire via dog facial and body expressions for clarity) — categorizing the impact as: Tranquility (security in approaching), Distrust (self-reported apprehension), or Insecurity (impediment to solitary handling). The perception of semiological feasibility was measured in levels of complexity: Easy to Very Difficult. Additionally, the veterinarians' confidence index in the vital parameters of these patients and the epidemiological occurrence of occupational accidents were evaluated, discriminating between attempted

aggression and completed bites. The results revealed that the clinician's emotional state varies according to the patient's reactivity. Anxious dogs predominantly evoke "Tranquility" (65%) and rarely "Insecurity" (1%). In the face of fear, "Distrust" predominates (51%), with 43% of professionals remaining calm. Aggressiveness reduces "Tranquility" to 11% and increases "Insecurity" to 41%. The complexity of performing the physical examination on stressed animals was considered "Moderate" by 66% of the sample and "Easy" by only 5%. Consequently, significant clinical skepticism was observed, with 94% of veterinarians questioning the reliability of the vital parameters obtained during the examination of stressed dogs. Additionally, a high risk to professional physical integrity was evident: 95% reported a history of attempted bites and 65% suffered completed injuries. Among the participating professionals, 55% had up to 10 years of experience and 27% had over 20 years; regarding practice setting, 50% worked exclusively in a clinic, while 46% worked in both clinic and home-visit settings. The findings indicate that veterinarians perceive canine stress and reactivity as important factors affecting the feasibility of the clinical examination, confidence in semiological findings, and professional safety. The urgent need to implement ethological management strategies and environmental adjustments aimed at reducing fear and anxiety becomes evident. Professional training in animal behavior is essential to mitigate occupational bite risks, ensure accurate diagnoses, and fulfill the shared responsibility of providing humane and safe clinical care.

INDEX TERMS: Canine behavior, veterinary consultation, stress in dogs, veterinary safety.

Ethical approval from Research Ethics Committee (CAAE no. 90616025.8.0000.0311)

Urorectal septum malformation in a domestic cat: case report

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Urorectal septal malformations in cats are rare congenital defects resulting from abnormalities in cloacal development, which impair the separation of the gastrointestinal and urogenital systems and may lead to anorectal anomalies, such as anal atresia. These defects are associated with alterations in the "Sonic Hedgehog"

signaling pathway. This study reports a case of urorectal septal malformation with absent penile shaft development, a small glans and imperforate anus in a domestic cat, focusing on diagnosis and clinical-surgical management. A four-month-old domestic cat, initially presented as female by the owner, was admitted to the



Veterinary Hospital of the “Universidade Federal Rural do Rio de Janeiro” with a history of fecal impaction and abdominal distension. Physical examination revealed a low body condition score, abdominal distension, and a single perineal opening for the passage of feces and urine. Fecal impaction was removed using a glycerin and saline enema (5 ml/kg) followed by manual extraction. Contrast-enhanced abdominal radiography revealed findings suggestive of rectal imperforation. Initial clinical management included oral (PO) macrogol (4.25 g/cat) every 12 hours (BID), simethicone (75 mg/animal) PO every 8 hours, and a wet diet. Abdominal ultrasound revealed abnormalities consistent with suspected feline triad, perineal testicles, and absent uterus. Consequently, oral marbofloxacin (20 mg/kg, every 24 hours) was added to the treatment. Computed tomography showed a rectourethral fistula, characterized by the post-pelvic urethra opening directly into the rectum, with an absence of the penile urethra and stenosis of the terminal rectum. Surgery was performed nine weeks after diagnosis, consisting of a conventional orchiectomy and anatomical perineal reconstruction. After incising the imperforate anus, dissecting the rectum, and identifying the previously catheterized urethra, the gastrointestinal and urinary systems were separated. The original urethral orifice was preserved via a circumferential mucosal incision. To definitively separate the ducts and perform perineal reconstruction, two rotational skin flaps were created, followed by mucocutaneous suturing using

4-0 nylon. In the immediate postoperative period, the animal urinated normally and continued to pass soft stools; wet diet and macrogol were maintained until postoperative day 10. From day 14, the animal was fed dry food and maintained a normal daily bowel movement pattern without laxatives. Sutures were removed on day 21 with no complications. The testicles were submitted intact in 10% buffered formalin solution, and the histopathological examination revealed rare spermatocytes and spermatids, with no mature spermatozoa. The rectourethral fistula facilitated uro-gastrointestinal cross-contamination, contributing to multiple inflammatory processes. In comparison, early management with laxatives and a wet diet prevented megacolon; definitive resolution required surgery. Perineal reconstruction enabled the functional separation of the urinary and gastrointestinal systems while preserving the original urethral orifice and restoring normal defecation. Absence of scrotal gonads and abnormal urethral structure suggest a disorder of sexual development. These findings support the hypothesis of a disorder in cloacal formation and differentiation associated with the “Hedgehog” pathway. However, establishing this link requires specific genetic testing. This case highlights the complexity of urorectal septal malformations. Clinical management prevented disease progression, advanced imaging provided an accurate diagnosis, and surgical intervention successfully restored function and quality of life.

INDEX TERMS: Anorectal anomalies, urogenital septum, felines.

Hypothyroidism secondary to amiodarone in a dog: case report

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Amiodarone, an iodine-rich drug used to treat cardiac arrhythmias, causes alterations in thyroid function in approximately 50% of human users, potentially inducing both hypothyroidism and thyrotoxicosis. These disorders result from multiple mechanisms, such as iodine overload, inhibition of deiodinases, direct cytotoxicity to the thyroid, and interference with the action of thyroid hormones. Similar effects have been described in dogs, making amiodarone a recognized cause of secondary hypothyroidism in this species. Hypothyroidism in dogs is primarily caused by lymphocytic thyroiditis, which leads to thyroid hormone deficiency through immune-mediated destruction of thyroid follicles. Diagnosis is based on a combination of compatible clinical signs (anemia, lethargy, weight gain, dyslipidemia, obesity, recurrent dermatopathies) with reduced levels of total thyroxine (T4) and increased thyroid-stimulating hormone (TSH). The objective of this report is to describe amiodarone-induced hypothyroidism in a dog with heart

disease. A 12-year-old, male, neutered mixed-breed dog presented with altered thyroid hormone levels: elevated TSH (1.3; reference range: 0.05–0.5, chemiluminescence) and low free T4 via dialysis (0.75; reference range: 0.8–3.0, radioimmunoassay). The patient also exhibited obesity and hepatic steatosis, as well as anemia and dyslipidemia on routine check-up tests, confirming the suspicion of hypothyroidism. Furthermore, this dog presented a history of ventricular arrhythmia treated with amiodarone (4.5 mg/kg/day), which raised suspicion of medication involvement in the condition. The arrhythmia, classified as ventricular extrasystoles with an episode of ventricular tachycardia, was diagnosed by 24-hour Holter monitoring. Due to the impossibility of withdrawing the antiarrhythmic because of the severity of the cardiological condition, levothyroxine sodium supplementation (10 mcg/kg SID) was chosen, along with an ultrasound evaluation of the thyroid, which revealed asymmetry between the right and left lobes.



After 60 days of supplementation, TSH levels normalized (0.36, ref 0.05-0.5) and total T4 (2.51, ref 1.25-3.9), and the total glandular volume decreased (from 517.4 mm³ to 363.9 mm³). The patient also showed improvement in hepatic steatosis, confirmed by ultrasound examination, weight loss, and good arrhythmia control. The good clinical response to treatment with levothyroxine, in the absence of symptoms of iatrogenic hyperthyroidism or thyrotoxicosis, suggests the development of hypothyroidism after treatment with amiodarone. The inability to withdraw the antiarrhythmic drug created a diagnostic challenge, as the patient could represent either true hypothyroidism and arrhythmia as independent conditions, or euthyroid sick syndrome induced by

amiodarone, a state where thyroid hormone levels are altered in the absence of intrinsic thyroid disease. The adequate clinical and biochemical response to levothyroxine, with no signs of iatrogenic thyrotoxicosis, supported the diagnosis of true hypothyroidism, reinforcing both the importance of monitoring thyroid function in arrhythmic patients on amiodarone and the therapeutic value of levothyroxine as a diagnostic tool in ambiguous cases. The absence of thyroid scintigraphy, which would have allowed direct functional assessment of the gland, represents a limitation of this report; its use is recommended in future cases where drug-induced thyroid dysfunction cannot be excluded by withdrawal of the offending agent.

INDEX TERMS: Canine hypothyroidism, amiodarone, drug-induced hypothyroidism, adverse drug reaction, thyroid function, dog, case report.

Mosquito bite hypersensitivity in a domestic feline: case report and multimodal therapeutic approach

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Mosquito bite hypersensitivity (MBH) is an allergic dermatopathy included among the manifestations of the feline eosinophilic granuloma complex (FEGC). Its pathogenesis involves an IgE-mediated hypersensitivity reaction to antigens present in mosquito saliva, resulting in mast cell degranulation, intense recruitment of eosinophils, and subsequent tissue destruction. The clinical relevance of this condition is associated with the chronic and often severe nature of the lesions, as well as diagnostic and therapeutic challenges, which can lead to the prolonged use of systemic corticosteroids and increase the risk of adverse effects, such as diabetes mellitus and feline skin fragility syndrome. This study aims to report a case of MBH in a domestic feline (*Felis catus*), highlighting the efficacy of a prompt diagnostic approach and a multimodal therapeutic protocol. A four-year-old, mixed-breed female cat weighing 3 kg was presented to the dermatology service at "Universidade Estácio de Sá" (UNESA), Vargem Pequena/RJ, due to a lesion on the nasal bridge that had been progressing for three months, associated with intense cephalic pruritus. The animal had a previous diagnosis of MBH and showed an unsatisfactory response to treatment with prednisolone at a dose of 1 mg/kg, once daily. Upon dermatological examination, the lesion was found to be restricted to the face, affecting the nasal bridge. It was characterized by alopecia, edema, and draining fistulas, in addition to miliary dermatitis in the peripalpebral and perilabial regions. Cytology of the exudate from the fistulas revealed an absence of microorganisms and a predominantly eosinophilic inflammatory infiltrate,

compatible with FEGC lesions. A presumptive diagnosis was established based on the cytological findings and a history of environmental exposure in an area with a high mosquito infestation. The treatment consisted of the intramuscular administration of methylprednisolone acetate (2 mg/kg), in two applications 15 days apart. Simultaneously, topical therapy was instituted with mometasone furoate ointment 0.1%, applied twice daily, and an icaridin-based repellent 10%, applied to the head and pinnae twice daily, during the evening twilight period and four hours later. Icaridin was selected as it represents a low-toxicity repellent alternative for felines. After 17 days of treatment, remission of the nasal bridge fistulas and miliary dermatitis lesions was observed. The methylprednisolone acetate was discontinued, and the topical therapy was maintained. On the 35th day, hair regrowth on the nasal bridge began, and the application frequency of mometasone furoate was reduced to three times a week. Complete remission of the lesions occurred at 60 days, at which point the topical corticosteroid was discontinued, leaving only the use of icaridin. At re-evaluation three and six months post-treatment, the animal remained asymptomatic. The clinical and cytological findings, along with the therapeutic response, confirmed the diagnosis of MBH. Mosquito bite hypersensitivity must be considered in the differential diagnosis of facial eosinophilic lesions in felines. The combination of 10% icaridin and topical corticosteroid therapy proved effective and safe for disease control and relapse prevention.

INDEX TERMS: Allergic reaction, feline eosinophilic granuloma complex, icaridin, therapeutic approach, topical corticosteroid therapy.

Use of frunevetmab in a domestic cat with diabetic neuropathy: a case report

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Diabetic neuropathy (DN) manifests as a plantigrade stance and predicts a lower likelihood of diabetes mellitus (DM) remission. As glycemic control rarely reverses neuropathy, multimodal therapy is required. Frunevetmab is a promising option due to its action on a key pathogenic pathway, although its use in DN has not yet been reported. This case report describes its use as adjunctive therapy for DN in a domestic cat. An 11-year-old neutered male cat weighing 7.4 kg with inflammatory bowel disease was evaluated. The patient had been receiving prednisolone (0.5 mg/kg), orally, every 24 hours (SID), for two years. The cat presented with polyuria, polyphagia, and locomotor abnormalities. On day 0, the patient was overweight and showed a plantigrade stance, hyperglycemia (415 mg/dL), and a beta-hydroxybutyrate concentration of 0.3 mmol/L, findings consistent with DM secondary to prolonged glucocorticoid administration and associated DN. Urine examination identified a bacterial infection caused by *Proteus mirabilis* (> 100,000 CFU/mL). Chronic pancreatopathy was identified on ultrasonography. A continuous glucose monitor was placed, and treatment was initiated with insulin glargine (100 IU/mL) administered subcutaneously every 12 hours (BID) when blood glucose exceeded 250 mg/dL; pregabalin (1 mg/kg), orally, SID; marbofloxacin (2.75 mg/kg), orally, SID; weekly acupuncture sessions; and dietary management aimed at weight reduction. On day 14, the cat developed a Somogyi effect and persistent neurological signs. The insulin protocol was adjusted to 1 IU when blood glucose exceeded 200 mg/dL, and pregabalin was modified to 0.5 mg/kg, orally, BID. By day 30, the patient had not required

insulin administration for 12 days due to sustained euglycemia. However, the plantigrade stance persisted, although improvement in neuromuscular function was observed. Consequently, frunevetmab (1 mg/kg) was administered subcutaneously, with doses repeated every 30 days. Following administrations on days 60 and 90, neuropathy progressively improved. On day 130, after the final frunevetmab injection, no neuropathic abnormalities were detected. On day 190, no significant abnormalities were noted during physical examination, confirming diabetic remission and complete resolution of the neurological condition. Feline DN may occur secondary to prolonged glucocorticoid use associated with insulin resistance, as observed in this case. However, persistent neurological signs despite therapy reinforce the multifactorial nature of DN, involving metabolic and structural alterations in the peripheral nervous system. The locomotor improvement observed after the introduction of frunevetmab, a monoclonal antibody against nerve growth factor (NGF), may suggest a potential benefit of this pathway modulation in feline DN. However, the contribution of concomitant therapies cannot be excluded. While DN is associated with complex changes in neurotrophic pathways, the progressive locomotor recovery observed in this case may be related to attenuation of NGF-mediated nociceptive signaling and neural sensitization. Nevertheless, further studies are needed to assess the efficacy and safety of frunevetmab in feline DN. Frunevetmab administration was associated with complete remission of neurological signs in this patient. Thus, this therapy may represent a promising alternative for conditions beyond osteoarthritis.

INDEX TERMS: Diabetes mellitus, nerve growth factor, feline, monoclonal antibody.

Early diagnosis and remission of transient diabetes mellitus secondary to acute pancreatitis in a dog

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Acute pancreatitis is an inflammatory disorder of the exocrine pancreas that may impair endocrine pancreatic function because of the close anatomical and functional relationship between exocrine and endocrine tissues. Failure of protective mechanisms regulating digestive enzyme activation may result in pancreatic

autodigestion and injury to adjacent endocrine tissue, potentially compromising β -cell function. Although diabetes mellitus (DM) in dogs is traditionally considered irreversible, remission has been sporadically reported. Remission may occur when residual β -cell insulin-secreting capacity is sufficient to meet



metabolic demands, particularly following resolution of inflammation and glucotoxicity. Unlike in cats, where transient DM is a well-recognized clinical entity, spontaneous remission in dogs is exceptionally rare, underscoring the relevance of this report. We report the case of a 14-year-old female Yorkshire Terrier referred for evaluation of vomiting, anorexia, abdominal pain, polyuria, and polydipsia. Diagnostic evaluation included urinalysis, complete blood count, serum biochemistry, and abdominal ultrasonography. Treatment consisted of fluid therapy, analgesia, antiemetics, enteral nutritional support, and neutral protamine Hagedorn (NPH) insulin administration (0.7 IU/kg BID). Urinalysis revealed glucosuria and proteinuria. Hematological evaluation demonstrated leukocytosis with a left shift. Serum biochemistry revealed hyperglycemia (265 mg/dL), increased alkaline phosphatase (ALP; 1,209 U/L), alanine aminotransferase (ALT; 427 U/L), gamma-glutamyl transferase (GGT; 58 U/L), and total cholesterol (366 mg/dL). Abdominal ultrasonography identified pancreatic abnormalities consistent with acute pancreatitis. Persistent hyperglycemia with glucosuria prompted initiation of NPH insulin therapy in conjunction with treatment of pancreatitis. Glycemic monitoring using the FreeStyle Libre® continuous glucose monitoring system demonstrated a progressive decline in interstitial glucose concentrations, with the daily mean decreasing from 174 mg/dL at the

beginning of monitoring to predominantly 81–106 mg/dL over the following days, accompanied by a reduction in hyperglycemic spikes. By the end of the monitoring period, the mean interstitial glucose concentration was 102 mg/dL, with 95% of readings within the target range. Following clinical stabilization and successful treatment of pancreatitis, glycemic control progressively improved, allowing gradual insulin dose reduction to 0.1 IU/kg administered on alternate days and, ultimately, treatment discontinuation. Insulin therapy was discontinued three weeks after initiation, and the patient remained euglycemic throughout a one-year follow-up period. Although acute pancreatitis has been associated with secondary diabetes mellitus in dogs, complete remission is rarely documented. The progressive normalization of interstitial glucose concentrations observed in this patient suggests recovery of residual β -cell function following resolution of pancreatic inflammation and glucotoxicity. Continuous glucose monitoring was particularly valuable for documenting this transition and guiding safe insulin tapering. This case highlights the importance of distinguishing secondary diabetes mellitus from primary canine diabetes mellitus, as appropriate treatment of the underlying disease may allow complete remission and avoid unnecessary long-term insulin therapy.

INDEX TERMS: Continuous glucose monitoring, FreeStyle Libre®, interstitial glucose, β -cell recovery, glucotoxicity, insulin therapy.

Use of dapagliflozin associated with insulin therapy in a feline with diabetes mellitus: a case report

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Feline diabetes mellitus (FDM) is one of the most common endocrinopathies affecting domestic cats, with an increasing prevalence. Standard treatment consists of insulin therapy combined with dietary management. Although effective, this approach presents important challenges, including glycemic variability, frequent monitoring, daily subcutaneous injections, and the risk of clinical hypoglycemia. In this context, sodium-glucose cotransporter-2 (SGLT-2) inhibitors have emerged as an oral therapeutic alternative for FDM. Although their use is primarily recommended for newly diagnosed, clinically stable cats with blood β -hydroxybutyrate concentrations below 2.4 mg/dL, only three studies have evaluated the combination of SGLT-2 inhibitors with insulin therapy in previously diagnosed diabetic cats with inadequate glycemic control, reporting promising results. Therefore, this report describes the case of a domestic cat with long-standing FDM receiving insulin therapy and presenting inadequate glycemic control in which dapagliflozin was added to the treatment regimen.

A 12-year-old neutered male domestic shorthair cat diagnosed with diabetes mellitus 10 months earlier was receiving insulin glargine (100 IU/mL). The patient exhibited persistent clinical signs consistent with poorly controlled diabetes accompanied by marked glycemic variability. Screening examinations, including hematological and ultrasonographic evaluations, did not identify inflammatory diseases or other comorbidities, such as hyperthyroidism, capable of promoting insulin resistance and impairing glycemic control. Home blood glucose curves showed glucose concentrations of 314, 304, 245, and 278 mg/dL immediately before insulin administration and at 4, 8, and 12 hours after administration, respectively. After increasing the glargine dose to 4 IU/cat, glucose concentrations were 256, 204, 39, and 135 mg/dL at the same time points. Dapagliflozin (2.5 mg/cat orally once daily) was then introduced in combination with insulin therapy (3 IU/cat subcutaneously twice daily). Before treatment initiation, serum β -hydroxybutyrate concentration was

0.1 mg/dL, supporting the safe administration of the drug. Glycemic monitoring demonstrated a reduction in blood glucose concentrations from the first day of treatment, allowing gradual insulin dose reduction until complete discontinuation and maintenance with dapagliflozin alone. In addition, β -hydroxybutyrate concentrations remained stable throughout four weeks of follow-up. Blood glucose curves showed low glycemic variability over time, with values of 152, 105, 96, and 123 mg/dL at the same predefined time points. Clinical signs of FDM remained controlled throughout follow-up after the introduction of oral therapy. In this case, insulin therapy alone was associated with glycemic variability, including one hypoglycemic episode, whereas the addition of dapagliflozin resulted in

greater glycemic stability, one of the expected benefits of SGLT-2 inhibitors. These findings are consistent with the insulin-independent mechanism of action of this drug class, which lowers blood glucose concentrations while reducing the risk of hypoglycemia and glycemic variability. This case demonstrated the therapeutic success of the initial combination of dapagliflozin with insulin therapy despite the long-standing diagnosis of FDM, allowing insulin discontinuation while maintaining euglycemia, preventing further hypoglycemic episodes, and controlling clinical signs of diabetes. These findings support future prospective studies with larger sample sizes to evaluate further this therapeutic strategy for cats with poorly controlled diabetes mellitus.

INDEX TERMS: Hyperglycemia, SGLT-2 inhibitors, endocrinopathy.

Control of canine atopic dermatitis (CAD) with lokivetmab associated with an elimination diet: a case report

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Canine atopic dermatitis (CAD) is a chronic, pruritic, inflammatory skin disease frequently associated with genetic, environmental, and dietary factors. This study reports the case of a five-year-old female French Bulldog presented with recurrent chronic pruritus since 18 months of age. The animal had shown an unsatisfactory response to previous treatments with glucocorticoids and oclacitinib. The patient lived in an apartment under strict environmental control, with the use of hypoallergenic products. Throughout its life, the dog had been fed different super-premium diets containing various protein sources, including chicken, duck, lamb, fish, and salmon. At the time of evaluation, the patient was receiving a commercial hypoallergenic diet (Royal Canin® Hypoallergenic), formulated with hydrolyzed soy protein. Despite this dietary management, the dog continued to experience frequent episodes of intense pruritus. Dermatological examination revealed erythema, recurrent otitis, and lesions affecting the face, ear pinnae, axillary, abdominal, perianal, and interdigital regions. Pruritus intensity was scored as 8/10 using a visual analog scale, and the patient fulfilled all eight Favrot criteria. To rule out the main differential diagnoses, a complete blood count, superficial skin scraping, fungal culture, and bacterial culture were performed. The complete blood count results were within the reference range. Skin scraping and fungal culture were negative, ruling out ectoparasitic infestations and fungal skin diseases.

Bacterial culture from an interdigital swab yielded growth of *Escherichia coli*, consistent with a secondary bacterial skin infection. The patient was treated with Dermotrat ointment for 14 days, resulting in resolution of the secondary infection. The diagnosis of CAD was established by exclusion, together with the clinical findings and Favrot criteria. Treatment was initiated with monthly subcutaneous lokivetmab (30 mg), combined with a home-prepared elimination diet consisting of rice and pork as the novel protein source, as recommended by the veterinary dermatologist, since the patient had never previously been exposed to pork protein. After 30 days, a marked reduction in pruritus, improvement in skin and coat condition, and regression of cutaneous lesions were observed. Subsequently, food provocation tests were performed. Reintroduction of fish protein resulted in recurrence of pruritus after approximately one week, whereas the inclusion of egg triggered worsening of clinical signs within only two days. Removal of these proteins restored clinical stability. After 60 days of follow-up, the pruritus score decreased from 8 to 6, demonstrating significant clinical improvement. These findings highlight the importance of a multimodal approach in the management of CAD. The combination of lokivetmab and an elimination diet provided better control of clinical signs and reduced pruritus. It improved the patient's quality of life, while the food provocation tests confirmed the contribution of dietary allergens to disease exacerbation.

INDEX TERMS: Canine atopic dermatitis, lokivetmab, elimination diet, food hypersensitivity, veterinary dermatology.

Structured communication with cat owners in feline medicine: a retrospective study on therapeutic adherence

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Communication with cat owners is particularly important in feline medicine because transport-related stress, handling difficulties, uncertainty regarding medication administration, and limited understanding of chronic conditions may compromise treatment adherence and continuity of care. Although accessible explanations, active listening, pre-consultation guidance, and shared therapeutic planning are recommended in feline practice, their association with adherence and follow-up outcomes remains insufficiently documented in routine clinical settings. Therefore, this study aimed to evaluate the association between structured communication and therapeutic adherence, reassessment attendance, and owner satisfaction in feline consultations. A retrospective observational study was conducted using records from feline consultations performed from January 2022 to December 2024 at a feline-oriented veterinary service in Rio de Janeiro state, Brasil. Medical records and associated follow-up documents, including return visit forms, post-consultation satisfaction questionnaires, and notes regarding adherence to prescribed protocols, were reviewed. Consultations were included when the available documentation allowed classification of communication practices and assessment of the predefined outcomes. Records with insufficient information for communication classification or outcome assessment were excluded. Data were extracted using a standardized review form. Consultations were classified as involving structured communication when the record documented pre-consultation guidance on transport and environmental management, accessible explanations regarding diagnosis and treatment, active listening to owner concerns, shared therapeutic planning, and detailed follow-up guidance. Consultations without documentation of these elements were classified as non-structured. Complete adherence

was defined as completion of the prescribed therapeutic protocol without unadvised interruption or modification. The post-consultation questionnaire assessed owner perception of participation in clinical decision-making and overall satisfaction with the service. Proportions were compared using chi-square or Fisher's exact tests, and odds ratios (OR) with 95% confidence intervals (95% CI) were calculated. Among 214 eligible consultations, structured communication was documented in 146/214 cases (68.2%), whereas 68/214 (31.8%) were classified as non-structured. Complete adherence to the prescribed protocol was higher in consultations with structured communication than in those without it, occurring in 109/146 cases (74.7%) and 28/68 cases (41.2%), respectively (OR = 4.21; 95% CI: 2.29–7.75; $p < 0.001$). Reassessment attendance was also more frequent in the structured communication group, occurring in 89/146 cases (61.0%), compared with 19/68 cases (27.9%) in the non-structured group (OR = 4.03; 95% CI: 2.15–7.53; $p < 0.001$). Accordingly, post-consultation loss to follow-up decreased from 72.1% (49/68) to 39.0% (57/146), representing an absolute reduction of 33.1 percentage points and a relative reduction of 45.9%. Owner satisfaction was higher when structured communication was documented, with 130/146 owners (89.0%) rating the service as excellent, compared with 35/68 owners (51.5%) in the non-structured group (OR = 7.66; 95% CI: 3.79–15.49; $p < 0.001$). Conversely, owners who reported feeling blamed for the animal's condition were less likely to return for reassessment (OR = 0.31; 95% CI: 0.18–0.54). These findings support the clinical relevance of structured communication in feline medicine. Its systematic use may improve therapeutic adherence, increase reassessment attendance, reduce loss to follow-up, and strengthen owner satisfaction and continuity of care.

INDEX TERMS: Feline medicine, client communication, therapeutic adherence, shared decision-making, client satisfaction, follow-up.

Echocardiographic findings in cats with cardiac murmur: a retrospective study on clinical indications

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Cardiac murmurs are common findings in cats, but their clinical relevance varies from functional murmurs to structural heart disease. This retrospective observational study evaluated the frequency and type of echocardiographic abnormalities in cats with murmurs detected during routine clinical consultation or preanesthetic evaluation. Cats examined from January 2019 to June 2025 were included when a murmur was recorded in the medical file, and complete cardiologic

evaluation with echocardiography was performed within 60 days. Cats with a previous diagnosis of heart disease or incomplete murmur grading were excluded. Murmurs were graded from I to VI by clinicians trained in cardiovascular semiology. Echocardiography was performed without sedation, and left ventricular wall thickness, interventricular septum thickness, left atrium-to-aorta ratio, fractional shortening, left ventricular outflow tract gradient, and Doppler evidence of valvular

regurgitation were reviewed. Associations were tested using Fisher's exact test and univariate logistic regression. Fifty-two cats were included, with a median age of 4.8 years; 57.7% were males and 63.5% were domestic shorthair cats. Echocardiographic abnormalities were identified in 65.4% of cases. The most frequent findings were hypertrophic cardiomyopathy (34.6%), isolated left atrial remodeling (26.9%), dynamic left ventricular outflow tract obstruction without structural cardiomyopathy (13.5%), restrictive or intermediate cardiomyopathy (5.8%), and mild-to-moderate mitral regurgitation (7.7%). The proportion of relevant abnormalities increased with murmur intensity: 42.1% in grade I-II, 76.0% in grade III-IV, and 87.5% in grade V-VI murmurs. Murmur intensity equal to or higher than

grade III was significantly associated with structural heart disease (odds ratio = 4.62; 95% confidence interval, 1.54-14.8; $p = 0.007$). Relevant echocardiographic abnormalities were also present in 15 of 31 asymptomatic cats (48.4%). Findings were more frequent in cats with gallop rhythm, respiratory signs, predisposed breeds, and in preanesthetic evaluation of cats aged five years or older. The results support echocardiography as a priority in cats with moderate to intense murmurs, gallop rhythm, arrhythmia, respiratory signs, preanesthetic risk factors, predisposed breeds, or suspected cardiomyopathy or arterial thromboembolism. Objective clinical criteria may improve decision-making and make feline cardiac screening more rational and evidence-oriented.

INDEX TERMS: Feline cardiology, hypertrophic cardiomyopathy, pre-anesthetic evaluation, left atrial remodeling, structural heart disease.

Impact of ethylenediaminetetraacetic acid (EDTA)-induced hemodilution on canine hematocrit determined by microcentrifugation and automated impedance analysis

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Underfilling ethylenediaminetetraacetic acid (EDTA) tubes is a common occurrence in veterinary laboratory practice. It represents an important pre-analytical source of error that may compromise the reliability of hematological results and subsequent clinical decision-making. This study aimed to evaluate the impact of EDTA-induced hemodilution on canine hematocrit at different degrees of tube underfilling and to compare the magnitude of this effect between the microhematocrit method and an automated impedance-based hematology analyzer. Blood samples were collected from seven healthy dogs enrolled in the "Acolhimento e Monitoramento Animal" (Animal Care and Monitoring Project – AMA) at the "Universidade Federal Rural do Rio de Janeiro" (UFRRJ). Samples were distributed into K₃EDTA (liquid form) tubes containing five different blood volumes: 4.0 mL (control), 3.0 mL, 2.0 mL, 1.0 mL, and 0.5 mL. Hematocrit was determined by microcentrifugation and by the BC-2800 automated hematology analyzer (Mindray). Data were analyzed using the Friedman test followed by Dunn's post hoc test for each method separately, and the Wilcoxon paired test for comparisons between methods, with Bonferroni correction ($\alpha = 0.01$). Results were expressed as median and interquartile range, and analyses were performed using BioEstat 5.0. Microcentrifugation hematocrit values showed a progressive decrease as blood volume declined, with median values of 44%, 43%, 42%, 38%, and 35% for 4.0, 3.0, 2.0, 1.0, and 0.5 mL, respectively. Significant differences were observed for the comparisons 4.0 vs. 1.0 mL, 4.0 vs. 0.5 mL, and 3.0 vs. 0.5 mL ($p < 0.01$), indicating that excess EDTA begins to exert a relevant effect when blood volume is reduced to 1.0 mL or less. The BC-2800 analyzer also demonstrated a progressive

decrease in hematocrit values, with medians of 45.9%, 45.6%, 43.9%, 43.3%, and 42.7%, respectively; however, significant differences were detected only in comparisons involving the 0.5 mL volume. Relative to the control group, the percentage variation at 0.5 mL reached -20.5% for microcentrifugation and -7.0% for the BC-2800. The automated analyzer consistently overestimated hematocrit values across all volumes, with discrepancies ranging from 1.9 to 7.7 percentage points between methods and significant differences between methods at all evaluated blood volumes ($p < 0.01$). These findings demonstrate that both methods are affected by EDTA-induced hemodilution, although to different extents. As the reference method, microcentrifugation detected marked reductions beginning at 1.0 mL. In contrast, the BC-2800 substantially attenuated this effect because hematocrit is calculated indirectly by mean corpuscular volume (MCV) $\times$ red blood cell count (RBC). Therefore, impedance-based analyzers may create a false impression of analytical robustness, because, while in microcentrifugation the cells maintain the osmotic shrinkage caused by the hypertonic plasma, in impedance readings, exposure to the isotonic diluent promotes partial rehydration, thereby altering the final volume measured by the automated system, potentially masking clinically relevant pre-analytical errors. These results highlight the importance of strict blood volume control in veterinary hematology laboratories, particularly those relying exclusively on automated impedance analyzers. In underfilled EDTA samples, the complementary use of microcentrifugation and automated hematocrit determination may reduce the risk of misinterpretation of hematological results.

INDEX TERMS: Pre-analytical error, anticoagulant-to-blood ratio, hematology analyzer, quality control.

Tricuspid valve dysplasia associated with suspected pulmonary thromboembolism in a dog: a case report

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Tricuspid valve dysplasia is a congenital malformation characterized by anatomical abnormalities of the tricuspid valve that result in reduced leaflet mobility. Consequently, incomplete closure of the valve leaflets occurs, and the animal may progress to congestive heart failure. The objective of this report is to describe a case of tricuspid valve dysplasia associated with a suspected pulmonary thromboembolism in a female dog. A 4-year-old female Yorkshire Terrier, weighing 6.2 kg, was referred to a private veterinary clinic with a history of ascites, excessive fatigue, exercise intolerance, and coughing. On physical examination, the patient had normal mucous membrane color, a heart rate of 140 bpm, tachypnea, and cardiac auscultation revealing a grade V/VI systolic murmur over the tricuspid valve focus and a grade III/VI systolic murmur over the mitral valve focus. Furthermore, the patient exhibited a positive fluid wave test and ascites, with the drainage of 800 mL of free fluid from the abdominal cavity. Given the clinical presentation, complementary exams were performed for cardiological evaluation. The electrocardiogram revealed sinus arrhythmia and increased P-wave amplitude, suggestive of right atrial enlargement. The echocardiogram demonstrated severe tricuspid regurgitation, with a velocity of 350 cm/s, associated with dysplastic leaflets — the parietal leaflet being larger than the septal leaflet — in addition to right atrioventricular remodeling. A tricuspid annular plane systolic excursion (TAPSE) of 10 mm, dilation of the pulmonary trunk with an Ap/Ao ratio measuring 2.6, and reduced distensibility of the right pulmonary artery

branch were also observed. Thus, the animal was classified as having a high probability of pulmonary hypertension. Additionally, the pulmonary trunk presented an intraluminal echogenic structure suggestive of a thrombus, raising suspicion of possible pulmonary thromboembolism (PTE). Following diagnosis, treatment with pimobendan, benazepril, and furosemide was initiated. The patient was expected to return for reassessment and for the prescription of sildenafil and clopidogrel; however, the animal did not return for a follow-up evaluation, rendering it impossible to analyze the clinical response to the instituted therapy. Severe right atrial dilatation can cause endothelial injury and predispose to blood stasis, both of which may contribute to thrombus formation according to Virchow's triad. These thrombi can detach, embolize into the pulmonary circulation, and cause PTE. Thus, the presence of these structures may contribute to the development of pulmonary hypertension (PH), as observed in the present case. The echocardiographic alterations confirmed the diagnosis of PH, whereas definitive confirmation of pulmonary thromboembolism is generally achieved only at necropsy. Diagnosis in living patients is achieved through clinical analysis, history, and complementary examinations, as described in this report. This case illustrates the importance of considering tricuspid valve dysplasia as a differential diagnosis in the presence of a tricuspid valve murmur in dogs, enabling early diagnosis and therapeutic management to delay severe complications.

INDEX TERMS: Cardiology, congenital disease, echocardiogram, pulmonary hypertension.

Characterization of environmental factors related to the risk of Leishmaniasis transmission in companion animals: a descriptive study based on an epidemiological questionnaire

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Leishmaniasis is a disease caused by protozoa of the genus *Leishmania*, transmitted through the bite of infected female phlebotomine sandflies, mainly *Lutzomyia longipalpis*. Its occurrence is associated with environmental factors that favor the proliferation of phlebotomine sandflies. Identifying these factors contributes to disease surveillance and control strategies. In urban environments, companion animals, especially dogs, are important reservoirs of the infectious agent. Therefore, this study aimed to characterize, through descriptive statistical analysis, environmental factors

associated with the risk of leishmaniasis transmission based on data obtained from an epidemiological questionnaire applied to companion animal owners in Vassouras. A cross-sectional observational study was conducted with companion animal owners attending the Veterinary Hospital of the "Universidade de Vassouras" in June 2026. The sample consisted of owners of dogs and cats treated at the hospital, regardless of suspicion or confirmation of leishmaniasis, who voluntarily agreed to participate. Cats were included because they are closely associated with human environments, although their



role as reservoirs remains unclear compared with dogs, in which this function is established. Data were collected through an epidemiological questionnaire containing information about animal characteristics, owners, and household environmental conditions related to transmission risk. A total of 31 owners were interviewed, and results were analyzed using absolute and relative frequencies. The analysis showed a predominance of dogs, representing 80.6% (25/31) of the animals included. Among environmental factors evaluated, garbage or debris accumulation was reported in 25.8% (8/31) of households, while vacant lots near residences were reported by 9.7% (3/31) of participants. Regarding animal exposure, 35.5% (11/31) of animals slept outdoors or had frequent access to outdoor environments, representing the most frequent risk-related condition. Additionally, 29.0% (9/31) presented hunting habits and 16.1% (5/31) had contact with wild animals, variables evaluated due to possible interactions between domestic animals, wildlife, and environments with vector circulation, which may influence zoonotic disease transmission dynamics. Regarding clinical conditions, ticks were reported in 25.8% (8/31) of animals, chronic wounds in 12.9% (4/31), and gastrointestinal alterations in 9.7% (3/31). The presence

of ectoparasites was considered a complementary variable, as it may indicate environmental conditions favorable to disease transmission. Vulnerable groups were identified in households, including elderly individuals 22.6% (7/31), individuals undergoing medical treatment 12.9% (4/31), and children under five years old 6.5% (2/31), due to their increased susceptibility to complications associated with leishmaniasis. The results demonstrated a predominance of dogs and animals maintained in household environments; however, environmental and behavioral conditions, such as waste accumulation, contact with wild animals, and hunting habits, may contribute to zoonotic disease transmission. Although clinical signs showed low frequency, the presence of chronic wounds and ectoparasites reinforces the importance of epidemiological monitoring. The identification of vulnerable individuals highlights the relevance of integrating animal and human health according to the One Health concept. It is concluded that environmental and behavioral factors reinforce the importance of epidemiological surveillance, health education, and preventive measures for zoonosis control. Future studies with larger samples and analytical approaches are necessary to evaluate possible associations between these factors and the occurrence of leishmaniasis.

INDEX TERMS: Companion animals, epidemiological surveillance, epidemiology, One Health, public health, sandflies, veterinary medicine, zoonoses.

Case report of feline sporotrichosis associated with feline immunodeficiency virus (FIV) infection in Nova Iguaçu, Rio de Janeiro, Brasil

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Sporotrichosis is a zoonotic mycosis caused by fungi of the *Sporothrix schenckii* species complex, with *Sporothrix brasiliensis* being the predominant species responsible for outbreaks in Brasil. Domestic cats play a central role in the maintenance and transmission of the disease, which represents a major public health concern, particularly in the state of Rio de Janeiro. In felines, sporotrichosis is primarily characterized by ulcerative cutaneous lesions and may present a more severe clinical course in immunosuppressed animals. Coinfection with feline immunodeficiency virus (FIV) may exacerbate disease severity and impair therapeutic response. This study reports the clinical, diagnostic, and therapeutic management of sporotrichosis in an FIV-positive cat, highlighting its relevance within the One Health framework. A mixed-breed male cat, estimated to be 4–5 years old, rescued from the streets of Nova Iguaçu, Rio de Janeiro, Brasil, was presented in November 2024 with multiple ulcerative lesions affecting the face and limbs. The diagnosis was established by cytological examination, which revealed yeast-like structures consistent with *Sporothrix* spp., together with the epidemiological history of residence in an endemic area. Initial treatment consisted of

compounded itraconazole administered at 80 mg/day in combination with silymarin as a hepatoprotective agent. However, no significant clinical improvement was observed after more than one month of therapy. Due to the unsatisfactory response, the itraconazole dosage was increased to 100 mg/day using a commercial formulation, resulting in progressive healing of the lesions. Following clinical improvement, preoperative laboratory tests were performed before elective neutering. The complete blood count revealed a leukogram within the reference range and relative lymphocytopenia, findings consistent with FIV infection, which was confirmed by a positive Alere® rapid immunochromatographic test. Serum biochemistry demonstrated elevated alanine aminotransferase (ALT) activity, suggesting possible itraconazole-induced hepatotoxicity and supporting continued silymarin use. Increased serum urea concentration with normal creatinine levels suggested pre-renal azotemia, possibly associated with inadequate fasting or mild dehydration secondary to the chronic infectious process. In July 2025, the cat underwent neutering, and approximately one week after surgery, recurrence of the cutaneous lesions was observed. This relapse was likely associated

with surgical stress and immunosuppression, which may have promoted fungal reactivation, requiring reinstatement of antifungal therapy. Following treatment resumption and maintenance of the adjusted itraconazole dosage, progressive clinical improvement and complete healing of the lesions were achieved, allowing treatment discontinuation in November 2025. The total treatment period was approximately 12 months, exceeding the duration generally reported in immunocompetent cats and highlighting the impact of

FIV coinfection on disease progression and therapeutic response. At the time of writing, the patient remains clinically healthy, with no evidence of recurrence. This case emphasizes the importance of early diagnosis, long-term follow-up, and individualized therapeutic management in immunocompromised patients. Furthermore, it underscores the need for integrated One Health strategies to improve sporotrichosis control and reduce zoonotic transmission.

INDEX TERMS: *Felis catus*, zoonosis, One Health.

Acquired portosystemic shunt following chronic itraconazole administration for the treatment of histoplasmosis in a dog

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A portosystemic shunt is an anatomical anomaly characterized by an abnormal communication between the portal and systemic circulations, which may be either congenital or acquired. As a result, a significant portion of portal blood flow bypasses the liver. It enters the systemic circulation, impairing essential hepatic functions such as the metabolism and detoxification of harmful substances. The accumulation of these substances in the systemic circulation may lead to clinical signs ranging from nonspecific manifestations to neurological signs associated with hepatic encephalopathy. Acquired portosystemic shunts develop secondary to diseases or conditions that cause severe hepatic damage. Azole antifungal drugs, such as itraconazole, are generally considered safe in veterinary medicine; however, prolonged administration or high dosages may induce hepatotoxicity, potentially leading to hepatic fibrosis and, in severe cases, cirrhosis. Therefore, the objective of this study was to report a case of an acquired portosystemic shunt in a dog associated with chronic itraconazole administration for the treatment of histoplasmosis. A four-year-old intact male Pit Bull Terrier with a history of *Histoplasma capsulatum* infection treated with itraconazole (10 mg/kg BID) was admitted to the Veterinary Hospital of the "Universidade Federal Rural do Rio de Janeiro" (UFRRJ). One month prior to presentation, the patient developed recurrent episodes of severe pain accompanied by neurological signs, including compulsive pacing, vocalization, and restlessness. An emergency abdominal ultrasonographic examination revealed cholelithiasis, cholestasis, and cystitis. Urinalysis identified ammonium biurate crystals. Additionally, abdominal ultrasonography demonstrated anomalous vessels suggestive of an acquired portosystemic shunt, which

was subsequently confirmed by computed tomography. Serum biochemical analysis revealed increased alanine aminotransferase (ALT), aspartate aminotransferase (AST), and bile acid concentrations, consistent with chronic hepatopathy. These alterations had not been observed in previous ultrasonographic examinations, indicating that the condition was of recent onset. Furthermore, the patient's favorable clinical response to conservative medical management supported the diagnosis. The patient's clinical history and the presence of ammonium biurate crystals in the urine were key findings that guided the diagnostic investigation. Ammonium biurate crystals result from abnormalities in ammonia and uric acid metabolism and are commonly associated with severe hepatic dysfunction and portosystemic shunting. Their identification prompted a more thorough investigation for a possible acquired portosystemic shunt. Itraconazole is considered the treatment of choice for histoplasmosis, and therapy is typically prolonged, in this case remaining for 10 months. Chronic exposure to the drug may lead to saturation of hepatocellular metabolic pathways and cumulative hepatic injury. This factor may contribute to the development of chronic hepatopathy and the subsequent formation of an acquired portosystemic shunt. This case report highlights a rare and critical clinical scenario, demonstrating the potential association between prolonged itraconazole administration and severe hepatic injury, culminating in the development of acquired portosystemic shunts in a dog. Given the exceptional rarity of this manifestation, this report underscores the vital importance of periodic monitoring of liver enzymes and hepatic function during prolonged azole therapy, particularly when managing animals that present with neurological signs.

INDEX TERMS: Hepatic vascular disorders, antifungal toxicity, portal hypertension.

Mammary neoplasia in a male dog: a case report

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Mammary neoplasms are highly prevalent in female dogs but rare in males. The most commonly described histological types include adenoma, adenocarcinomas, and benign mixed tumors. They generally affect middle-aged to older dogs, with the caudal abdominal and inguinal mammary glands being the most frequently affected. Despite the possible association with testicular tumors secreting female hormones, the etiopathogenesis of these neoplasms in males remains incompletely understood. Given the rarity of this condition and the scarcity of literature, this report aims to describe a case of grade II papillary mammary carcinoma in a male dog treated at the Veterinary Hospital of the "Universidade Federal Rural do Rio de Janeiro" (UFRRJ). A 9-year-old neutered mixed-breed male dog was presented to the Oncology Service of the UFRRJ Veterinary Hospital due to a nodule in the region of the left cranial thoracic mammary gland, with a six-month history and measuring $3.2 \times 1.9 \times 1.1$ cm. The owner reported that the nodule presented episodes of ulceration and healing, as well as variations in size. Cytopathological examination was suggestive of mammary adenocarcinoma. For staging purposes, abdominal ultrasonography and thoracic radiography, in addition to preoperative examinations, were performed and revealed no relevant abnormalities. The animal subsequently underwent left cranial regional mastectomy and ipsilateral axillary lymphadenectomy. Histopathological analysis revealed a grade II papillary mammary carcinoma, with no lymph node metastasis. Immunohistochemistry (IHC) was recommended but declined by the owners. Historically, mammary tumors in male dogs have been associated with the hormonal influence of estrogen (E2) and progesterone

(P4), particularly in animals with testicular tumors secreting female hormones. In this case, the animal was neutered and had no history of gonadal neoplasms, which is consistent with recent studies demonstrating a low occurrence of concurrent testicular tumors, reduced immunolabeling for E2 and P4 receptors, and low serum concentrations of these hormones in male dogs with mammary neoplasia. Cytopathology was important to guide the diagnostic approach, differentiating mammary tumors from cutaneous tumors and justifying the preference for regional mastectomy. In female dogs, mammary nodules larger than 3 cm are associated with a poorer prognosis and often justify more extensive surgical procedures; however, there is no evidence supporting the application of the same criteria to males. Furthermore, the anatomical particularity resulting from the presence of the penis in the inguinal region may impair primary wound healing, increase surgical morbidity, and lead to the potential need for reconstructive procedures. Histopathology confirmed the mammary origin and malignant nature of the lesion, justifying the therapeutic approach adopted in this case. Despite the absence of metastasis, the malignant nature and histopathological grade of the tumor require oncological follow-up. IHC would be crucial for defining the molecular profile, establishing a more accurate prognosis, and guiding adjuvant therapies. The scarcity of literature limits the understanding of these neoplasms and reinforces the importance of this report. The anatomical particularities and the lack of well-established predictive and prognostic criteria for mammary neoplasms in males reinforce the need for studies on this condition to establish assertive therapeutic approaches.

INDEX TERMS: Canine, mammary tumor, carcinoma.

Grade II invasive solid papillary mammary carcinoma in a cat: a case report

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Mammary carcinoma is one of the primary neoplasms affecting felines, notable for its aggressive behavior, infiltrative growth, and high metastatic potential. Diagnosis involves clinical assessment, laboratory and imaging tests, cytology, and histopathological confirmation. Immunohistochemistry (IHC) serves as an important ancillary test, particularly for poorly differentiated neoplasms, aiding in the identification of tumor origin and the evaluation of prognostic biomarkers such as Ki-67, HER-2, estrogen receptor (ER), and progesterone receptor (PR). Staging using the TNM system guides prognosis and therapeutic management. Treatment relies primarily on mastectomy, with the indication for adjuvant chemotherapy determined on an individual basis according to histopathological findings, staging, and prognostic factors. This report describes a case of

Grade II solid papillary mammary carcinoma and Grade II invasive papillary mammary carcinoma in a 12-year-old spayed mixed-breed female cat. The animal was presented at a veterinary clinic in Mesquita, Rio de Janeiro, with a history of mammary gland enlargement observed over the previous month. Physical examination revealed a firm mass measuring approximately 0.7 cm, located between the M2 and M3 glands of the right mammary chain; the mass was mobile and showed no signs of adhesion, ulceration, or discharge, while other physiological parameters were within normal limits. Diagnostic procedures included a complete blood count (CBC), serum biochemistry (urea, creatinine, alanine aminotransferase – ALT, and alkaline phosphatase), fine-needle aspiration cytology (FNAC), thoracic radiography, and abdominal ultrasonography. Laboratory results showed leukocytosis due to neutrophilia,

mild eosinophilia, and hyperproteinemia, with no significant biochemical abnormalities, while imaging studies revealed no pulmonary or abdominal metastases. Cytological analysis yielded results suggestive of a lipoma. To establish a diagnosis, a unilateral mastectomy was performed in two surgical stages, involving the removal of the affected mammary chain and regional lymph nodes. The tissue was fixed in 10% formalin, routinely processed for histopathology, and stained with hematoxylin and eosin (HE). Microscopically, an infiltrative proliferation of neoplastic epithelial cells with moderate pleomorphism was observed; these cells were organized in papillary and solid patterns supported by a delicate fibrovascular stroma and exhibited vesicular nuclei, prominent nucleoli, and a mitotic index of nine mitoses/2.37 mm² in the M2/M3 region and five mitoses/2.37 mm² in the M3 region. These findings were consistent with Grade II solid papillary mammary carcinoma in the M2/M3 region and Grade II invasive papillary mammary carcinoma in the

M3 region. Surgical margins were free of neoplastic cells, regional lymph nodes showed no evidence of metastasis, and no vascular invasion was identified. IHC could not be performed. According to the TNM system, the case was classified as Stage I (T1N0M0). Following surgical recovery, a mastectomy of the contralateral mammary chain was performed, followed by adjuvant chemotherapy with carboplatin, totaling six sessions at 21-day intervals. The patient will remain under follow-up for three years, with semiannual imaging examinations showing no evidence of recurrence or metastasis. In conclusion, this case report highlights the potential for discordance between FNAC and histopathological examination in feline mammary neoplasia, with the definitive diagnosis established via histopathology. Following surgical treatment and adjuvant chemotherapy, the patient remains free of evidence of recurrence or metastasis and will continue to be monitored for three years.

INDEX TERMS: Mammary carcinoma, *Felis catus*, cytology, histopathology, chemotherapy.

Bilateral spontaneous chronic corneal epithelial defects (SCCEDs) in a french bulldog: a case report

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Ulcerative keratitis is one of the most common ophthalmic disorders in small animals. Spontaneous chronic corneal epithelial defect (SCCED) results from impaired adhesion between the corneal epithelium and stroma, leading to delayed corneal healing. Brachycephalic breeds, such as the French Bulldog, are predisposed to this condition because of anatomical abnormalities affecting the ocular surface. This study aimed to describe the clinical, diagnostic, and therapeutic aspects of a case of bilateral SCCED in a nine-year-old, spayed female French Bulldog weighing 12.8 kg. The patient was referred for persistent corneal ulceration in the left eye that had failed to respond to medical treatment. The initial therapeutic protocol included topical antibiotic, cycloplegic, and lubricating eye drops, together with systemic anti-inflammatory and analgesic medications. Ophthalmic examination revealed photophobia, blepharospasm, conjunctival hyperemia, and ocular discomfort. Fluorescein staining was positive in the left eye, and a complete ophthalmic examination ruled out trauma and other predisposing conditions, supporting the diagnosis of SCCED. Initial treatment consisted of corneal debridement using a sterile cotton swab under topical anesthesia, followed by topical moxifloxacin, atropine, ocular lubrication, systemic analgesia, and Elizabethan collar placement. Seventeen days later, the patient developed a similar lesion in the right eye. Ophthalmic examination confirmed bilateral SCCED. Repeat corneal debridement

and therapeutic contact lens placement were performed in both eyes; however, epithelial defects and ocular discomfort persisted. Owing to the refractory nature of the disease, surgical treatment consisting of diamond burr corneal debridement combined with grid keratotomy was performed. Debridement removed the non-adherent epithelium and regularized the corneal surface, whereas grid keratotomy enhanced epithelial adhesion to the underlying stroma, reducing the risk of recurrence. Postoperative corneal protection consisted of a third-eyelid flap in the right eye and a therapeutic contact lens in the left eye, preserving partial vision while minimizing the risk of lens displacement. Postoperative management included topical and systemic antibiotics, anti-inflammatory and analgesic drugs, and continuous ocular lubrication. Fourteen days after surgery, complete corneal healing, resolution of ocular pain, and bilateral negative fluorescein staining were observed. At one- and two-month follow-up examinations, the patient remained free of inflammation, pain, and recurrence. This report demonstrates the successful management of refractory bilateral SCCED in a French Bulldog, highlighting the importance of accurate diagnosis and supporting the combination of diamond burr corneal debridement, grid keratotomy, and corneal protection techniques as an effective therapeutic approach. The complete recovery observed reinforces the value of this strategy for improving therapeutic outcomes and patient welfare in brachycephalic dogs.

INDEX TERMS: Indolent corneal ulcer, spontaneous chronic corneal epithelial defect (SCCED), diamond burr corneal debridement, grid keratotomy, brachycephalic dog.

Characterization of sarcomas in dogs in Rio de Janeiro

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Sarcomas are malignant neoplasms of mesodermal origin that affect various mesenchymal tissues, with a high prevalence in cutaneous and subcutaneous tissues. They exhibit aggressive and highly infiltrative behavior. Although fine-needle aspiration cytology is widely used in clinical routine, histopathological analysis remains the gold standard, being essential for histological grading. This grading defines the metastatic potential and allows early diagnosis to guide the most appropriate therapeutic interventions for each case. In addition to histopathological analysis, characterizing the affected population is extremely important, as it allows classification of groups of animals with a greater predisposition to developing sarcomas. This study analyzed and characterized the profile of sarcomas in dogs diagnosed at a veterinary laboratory in Rio de Janeiro through a descriptive and retrospective study. A total of 7,562 histopathological reports of canine neoplasms performed from 2015 to 2024 in a clinical analysis laboratory in Rio de Janeiro were analyzed, of which 162 (2.1%) were diagnosed as sarcomas. To characterize the animals with sarcoma, identification parameters such as sex and age were evaluated, in addition to the most affected organ systems. Of the 162 sarcoma cases, 85 (52.47%) occurred in females and 76 (46.91%) in males, and in one case (0.62%), sex was not identified. Regarding age, elderly dogs (over seven years old) were the most affected, totaling 111 animals (68.52%), while adults (one to seven years old) totaled 51 animals (31.48%), and no puppies were affected. Regarding the systems affected, the historical high

prevalence of sarcoma in cutaneous and subcutaneous tissues proved relevant in the local sample, with the integumentary system being the most affected with 90 cases (55.5%), followed by the hematopoietic/lymphoid (11.7%) and oral/dental (11.1%) systems; the remaining 21.7% were found in the urogenital, gastrointestinal, mammary, skeletal muscle, and ocular systems. A significant limitation of this study was the inability to determine whether the involvement of the lymphoid tissue was primary or secondary. Since the research was based on laboratory data without access to the animals' full clinical history, it was not feasible to establish this distinction. Sarcoma occurrence was 2.1%, being similar to what is described in the literature. In a Pelotas (RS) survey, the occurrence of soft tissue sarcomas in dogs totaled 166 cases, representing approximately 2.02% of the 8,203 total diagnoses. Although the cited study focused specifically on soft tissue sarcomas, the observed frequencies remain similar. Regarding the affected system, the literature states that the cutaneous system is the most common, corroborating the findings; however, the hematopoietic and oral systems also showed a considerable occurrence, as seen in studies such as one conducted in Belém (PA), where the hemolymphatic system was the third most frequent neoplastic location (6.60%). In comparison, the oral cavity recorded 3.30% of occurrences. Thus, the data suggest a higher frequency in elderly dogs with sarcoma and although the skin is the primary target, the hematopoietic and oral systems play an important role in canine oncology in Rio de Janeiro labs.

INDEX TERMS: Canine neoplasms, tumors, retrospective study.

Correlation between vertebral heart size, echocardiographic variables, and clinical signs in dogs with structural heart disease: a retrospective study

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Thoracic radiography is widely available in small animal practice and is commonly used as an initial, low-cost method to investigate suspected cardiac disease. However, its interpretation can be influenced by thoracic conformation, radiographic positioning, technical acquisition, and the underlying cardiac disorder. This retrospective cross-sectional study evaluated the association between vertebral heart size (VHS), ultrasonographic markers of cardiac remodeling, and clinical presentation in dogs with structural heart

disease. Medical records from January 2020 to December 2025 were reviewed. Dogs were eligible when thoracic radiographs and cardiac ultrasonographic examinations had been performed within a maximum interval of 30 days. Dogs with severe positioning errors, incomplete medical records, or noncardiac causes of thoracic silhouette enlargement were excluded. Extracted data included sex, age, body-size category, cardiac diagnosis, VHS, left atrium-to-aorta ratio (LA/Ao), normalized left ventricular internal diameter in diastole (LVIDDN),



systolic-function variables, clinical status, and radiographic evidence of pulmonary venous congestion. Continuous variables were expressed as mean $\pm$ standard deviation, whereas categorical variables were expressed as absolute and relative frequencies. Correlations were assessed using Spearman's coefficient, and symptomatic and asymptomatic groups were compared using appropriate inferential tests. A total of 118 dogs were included. Mean age was 10.2 ± 3.1 years; 67/118 (56.8%) were female, and 51/118 (43.2%) were male. Seventy-four dogs (62.7%) weighed less than 10 kg. Myxomatous atrioventricular valve disease was the most frequent diagnosis (83/118, 70.3%), followed by dilated cardiomyopathy (12/118, 10.2%), mixed acquired atrioventricular valve disease (11/118, 9.3%), congenital heart disease (7/118, 5.9%), and other structural cardiopathies (5/118, 4.2%). Mean VHS was 11.8 ± 1.2 vertebrae, mean LA/Ao was 1.78 ± 0.46 , and mean LVIDDN was 1.75 ± 0.34 . VHS showed moderate positive correlations with LA/Ao (Spearman's $\rho = 0.56$; $p < 0.001$) and LVIDDN ($\rho = 0.61$; $p < 0.001$), but only a weak, nonsignificant correlation with systolic function ($\rho = -0.19$; $p = 0.08$). Symptomatic dogs ($n = 51$) had higher mean VHS values

than asymptomatic dogs (12.5 ± 1.1 vs. 11.3 ± 1.0 vertebrae; $p < 0.001$) and more frequently showed radiographic findings compatible with pulmonary venous congestion. A VHS cutoff > 11.5 vertebrae identified left atrial enlargement ($LA/Ao \geq 1.6$) with 78.1% sensitivity, 64.3% specificity, and an area under the receiver operating characteristic curve of 0.76. VHS was associated with cardiac remodeling and clinical signs and may be a useful adjunctive screening measure, particularly in settings in which comprehensive cardiac imaging is not immediately available. Nevertheless, the method has limited specificity, does not independently identify the chamber affected or the cause of cardiomegaly, and should not be interpreted as an isolated indicator of functional severity. Its retrospective design, heterogeneous cardiac diagnoses, possible variation in radiographic technique, and the interval between examinations may also have influenced the results. Therefore, VHS should be integrated with physical examination, thoracic radiographic findings, and comprehensive cardiac assessment, rather than used as a substitute for a cardiac ultrasonographic examination.

INDEX TERMS: Thoracic radiography, radiographic measurement, cardiac remodeling, dogs, cardiomegaly.

Malignant trichoepithelioma in a domestic cat: the importance of histopathology for diagnosis

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Trichoepithelioma, originating from hair follicle structures, is described as a rare neoplasm in felines. Due to its rarity and clinical similarity to other dermal conditions, the differential diagnosis includes infectious processes, follicular cysts and other cutaneous neoplasms, such as soft tissue sarcoma. The aim of this report was to describe a case of malignant trichoepithelioma in a domestic feline, emphasizing the essential role of histopathology in establishing the definitive diagnosis and guiding the therapeutic approach. A 15-year-old neutered mixed-breed cat presented with a nodular, ulcerated cutaneous lesion in the scapular region for approximately three months. Suspecting sporotrichosis, given the patient's outdoor access in an endemic region, the owner initiated empirical treatment with itraconazole on their own initiative. The animal was evaluated at an external veterinary service, where cytology was suggestive of sarcoma, leading to referral to the Oncology Service of the Veterinary Hospital of the "Universidade Federal Rural do Rio de Janeiro" (UFRRJ). Fungal and bacterial cultures yielded negative results, leading to discontinuation of antifungal treatment. A second cytopathological evaluation also returned findings suggestive of sarcoma, reinforcing concern regarding the malignant nature

of the neoplasm. The lesion was nodular, ulcerated, measuring less than 1 cm, dorsal to the left scapula, superficial and not adhered to deeper tissues, with pruritus and pain on palpation. Oncological staging with thoracic radiographs, abdominal ultrasonography and hematological evaluation revealed no distant metastasis or other clinically significant findings. Given the cytological and microbiological results and the atypical clinical presentation, an excisional biopsy with surgical margins was performed. Macroscopic examination revealed an elevated ulcerated lesion, measuring 0.7 x 0.7 cm. Histopathological examination revealed infiltrative neoplastic proliferation from superficial to deep dermis, with cells in variably sized islands supported by abundant collagenous stroma. The neoplastic cells were basaloid, small, with indistinct borders, scant eosinophilic cytoplasm, and round to oval paracentral nuclei with speckled chromatin. Extensive areas of strongly eosinophilic concentric material (keratin) and ghost cells were present. The mitotic index was two figures per high-power field (400x) in 2.37 mm², with focal epidermal ulceration and neutrophilic infiltrate. The surgical margins were clear. Regional lymphadenectomy was recommended but declined by the owner; oncological follow-up every

three months in the first year and every six months in the second was instituted, with thoracic radiographs and abdominal ultrasonography. This case illustrates the diagnostic challenge of cutaneous lesions in felines when cytological findings are discordant with the clinical presentation. Although cytology suggested sarcoma in two evaluations, histopathology provided the definitive diagnosis of malignant trichoepithelioma. This discrepancy may be attributed to pleomorphic basaloid cells, which cytologically mimic sarcoma

cells, making tissue architectural evaluation essential. The distinction between benign and malignant forms is established histologically by cellular atypia, tissue infiltration, and increased mitotic activity. This case reinforces the importance of correlating clinical and complementary findings, highlighting histopathology as the definitive diagnostic method for cutaneous neoplasms with atypical presentations, particularly in regions where infectious diseases may initially misdirect the clinical investigation.

INDEX TERMS: Feline oncology, skin neoplasm, hair follicle tumor, trichoepithelioma, histopathology, cytology, sarcoma, sporotrichosis, differential diagnosis.

Incidental ultrasonographic finding of ileal intestinal duplication in an asymptomatic adult cat: a case report

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Alimentary tract duplications are rare congenital anomalies characterized by tubular structures adjacent to the intestinal lumen that may occur anywhere along the gastrointestinal tract. However, ileal involvement is exceptionally rare in cats. This report describes the incidental ultrasonographic diagnosis of an intestinal duplication in an asymptomatic eight-year-old spayed female domestic shorthair cat. The patient was presented for evaluation of excessive licking of the abdominal region. No gastrointestinal signs were reported. Physical examination revealed a firm abdominal mass cranial to the urinary bladder. Abdominal ultrasonography demonstrated a mildly thickened ileal wall with preserved layering, containing a tubular structure within its dorsal wall near the ileocolic junction, exhibiting an architecture similar to that of the distal ileum. This finding was consistent with the double-wall sign, characterized by an inner hyperechoic interface (mucosa/submucosa) surrounded by an outer hypoechoic layer (smooth muscle), mimicking the native intestinal wall signature. The cecum showed mild wall thickening and hypoechogenicity, compatible with typhlitis. A hyperechoic mesentery and a small volume of free abdominal fluid suggested localized peritonitis. In addition, marked splenomegaly with heterogeneous parenchyma was observed, resulting in caudal displacement of the left kidney and creating the appearance of a focal abdominal mass, suggestive of severe splenic disease, possibly of neoplastic origin. Mild enlargement of the hepatic and ileocecal lymph nodes, as well as marked jejunal lymphadenomegaly, were also identified. Hematological evaluation revealed leukopenia, thrombocytopenia, and prolonged coagulation times. The patient received a blood

transfusion and subsequently underwent splenectomy. During surgery, the spleen was markedly enlarged, friable, and exhibited moderate hemorrhage upon manipulation, although hemodynamic parameters remained stable throughout the procedure. An area suggestive of intestinal lymphomatosis was also observed along the mesenteric border. Histopathological examination revealed splenic white pulp hyperplasia and fibrotic changes within a lymph node. Postoperatively, hematological parameters stabilized, with normalization of the platelet count and mild regenerative anemia. Two months after surgery, the patient remained clinically stable, active, normorexic, and free of gastrointestinal signs. Follow-up ultrasonography revealed mild diffuse intestinal thickening with muscularis layer thickening, moderate jejunal lymphadenopathy, localized mesenteric inflammation, and persistence of the previously described intestinal duplication. This anomaly in adult cats is considered atypical, as most reported cases occur in young animals. Although obstructive gastrointestinal signs are commonly associated with this condition, this case highlights the possibility of incidental diagnosis in asymptomatic patients. While histopathology remains the gold standard for definitive diagnosis, ultrasonography is the preferred imaging modality for presumptive diagnosis because it allows minimally invasive identification of the double-wall sign, characterized by the typical stratification of the intestinal wall. This report reinforces the importance of ultrasonography as a sensitive diagnostic tool for detecting intestinal duplication in cats, even in late-onset and asymptomatic presentations.

INDEX TERMS: Congenital anomalies, double-wall sign, alimentary tract, ileocolic junction.

Application of the Vet BLUE protocol in dogs and cats with respiratory distress: diagnostic usefulness in veterinary emergency practice

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Point-of-care lung ultrasound has become an important bedside tool for the rapid assessment of small animals with respiratory distress, particularly when handling, transport, or radiographic positioning may worsen clinical instability. This retrospective observational study evaluated the diagnostic usefulness and clinical impact of the veterinary bedside lung ultrasound exam (Vet BLUE) in dogs and cats admitted to an emergency service with respiratory compromise. Medical records from January 2021 to December 2025 were reviewed, and patients were included when they presented with tachypnea, dyspnea, orthopnea, increased respiratory effort, or hypoxemia and underwent Vet BLUE during admission or immediately after initial stabilization. Patients with incomplete records or absence of a final or presumptive cardiopulmonary diagnosis were excluded. Ninety-six patients were included, comprising 62 dogs (64.6%) and 34 cats (35.4%), with a median age of 8.3 years (interquartile range – IQR, 4.6–11.7). Final or presumptive diagnoses included cardiogenic pulmonary edema (28/96, 29.2%), pleural effusion (18/96, 18.8%), pneumonia or bronchopneumonia (16/96, 16.7%), obstructive lower airway disease or feline asthma (14/96, 14.6%), pneumothorax (7/96, 7.3%), pulmonary neoplasia (5/96,

5.2%), and other causes (8/96, 8.3%). Diffuse B-lines in three or more scanned regions were associated with cardiogenic pulmonary edema, with 85.7% sensitivity, 78.6% specificity, and an area under the curve of 0.82. Pleural effusion was detected ultrasonographically in 17/18 affected patients (94.4%), and the absence of lung sliding with a lung point was identified in 6/7 patients with pneumothorax (85.7%). Focal subpleural consolidations were more frequent in pneumonia/bronchopneumonia than in other diagnoses (62.5% vs. 18.8%; $p = 0.004$). The Vet BLUE findings contributed to immediate clinical decision-making in 57/96 patients (59.4%), including prioritization of oxygen therapy, thoracocentesis, diuretic therapy, antimicrobial investigation, and selection of complementary imaging. Median time to complete the protocol was four minutes (IQR, 3–6). These findings indicate that Vet BLUE is a practical and clinically useful triage method in dogs and cats with respiratory distress, especially for differentiating diffuse interstitial-alveolar patterns, pleural space disease, and focal pulmonary lesions. Nevertheless, it should be interpreted together with physical examination, history, and complementary diagnostic methods, rather than as a standalone test.

INDEX TERMS: Thoracic imaging, lung ultrasound, emergency medicine, point-of-care, cardiogenic edema.

Survey of diagnostic practices and preventive measures for canine visceral leishmaniasis in veterinary clinics in Rio de Janeiro

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Canine visceral leishmaniasis (CVL) is a zoonotic disease of major public health importance in Brasil, caused by protozoa of the genus *Leishmania* and primarily transmitted by infected phlebotomine sand flies. Despite advances in diagnostic methods and preventive strategies, early diagnosis and disease control remain challenging in veterinary practice. This study aimed to evaluate diagnostic approaches, preventive practices, and professional awareness regarding canine visceral leishmaniasis in veterinary clinics in Rio de Janeiro. A descriptive study with qualitative and quantitative approaches was conducted from February to April 2026 through visits to veterinary clinics and application of structured questionnaires to practicing veterinarians. Convenience sampling was adopted, including veterinarians who voluntarily agreed to participate during the data collection period. A minimum sample of 40 participants was previously established considering the feasibility and exploratory nature of the study, and 46 valid responses were obtained. In addition to data collection, an educational campaign

was carried out through the distribution of informational material addressing transmission, clinical manifestations, diagnosis, prevention, and epidemiological importance of the disease. A total of 46 veterinarians participated in the survey. Most respondents (45.7%) had less than two years of professional experience, while 69.6% worked primarily in small animal practice. Although 60.9% reported frequently attending suspected cases of leishmaniasis, 87.0% considered the diagnosis challenging in routine clinical practice. Regarding diagnostic resources, 84.8% reported using serological tests, including enzyme-linked immunosorbent assay (ELISA), *immunofluorescence antibody test (IFAT)*, or dual-path platform (DPP), while 80.4% had access to parasitological examinations and cytology. Molecular diagnosis by polymerase chain reaction (PCR) was used by 84.8% of respondents. Concerning preventive measures, 97.8% routinely advised pet owners about disease prevention and 89.1% recommended the use of insecticide-impregnated collars or topical repellents. However, 32.6% of participants

reported uncertainty regarding appropriate notification procedures for positive cases. Qualitative responses highlighted difficulties related to owner adherence to diagnostic testing, limited perception of disease severity, and financial barriers to confirmatory examinations. The educational action was positively received by professionals and promoted discussions regarding diagnostic challenges and preventive strategies. These findings demonstrate that although veterinarians recognize the importance of canine visceral leishmaniasis and have access to diagnostic tools,

significant gaps remain in disease notification, owner awareness, and early diagnosis. The variability observed in diagnostic and preventive practices may directly influence early case detection and the effectiveness of surveillance and disease control measures. Therefore, continued professional education and public awareness initiatives are essential to strengthen One Health strategies, improve epidemiological surveillance, and enhance canine visceral leishmaniasis control.

INDEX TERMS: Epidemiological surveillance, veterinary public health, health education, vector control, professional training, zoonotic diseases.

Perianal trichoblastoma in a dog: the contribution of frozen-section biopsy to intraoperative diagnosis and surgical decision-making

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Cutaneous and adnexal neoplasms represent one of the most frequently diagnosed tumors in dogs, accounting for a significant proportion of dermatological and oncological consultations. Among these tumors, trichoblastoma stands out as a benign adnexal neoplasm originating from the primitive hair germ and is one of the most common hair follicle tumors in dogs. Its preferential location includes the head, neck, and base of the ear, whereas presentations in caudal regions are considered uncommon. In the perianal region, the clinical suspicion usually focuses on hepatoid gland tumors or anal sac neoplasms, given the high frequency of these conditions at this anatomical site. For the diagnosis of cutaneous lesions, several techniques may be used, including cytopathological and histopathological analysis. Considering the suspicion of a cutaneous neoplasm, intraoperative biopsy may be indicated, since, according to the intraoperative diagnosis, margin enlargement can be assessed during the surgical procedure, allowing more accurate clinical decisions. The aim of this report was to describe an atypical case of perianal trichoblastoma in a dog and to highlight the contribution of cytopathology and intraoperative frozen-section biopsy to diagnosis and surgical decision-making. This report describes a dog presenting with a solitary, exophytic, alopecic nodule in the perianal region, with progressive growth over one year. Surgical excision of the mass was performed, and cytopathological evaluation and intraoperative frozen-section biopsy were requested. The first procedure consisted of sample collection by fine-needle aspiration (FNA), squash smear preparation on glass slides, and staining with rapid panoptic stain for cytological evaluation. Immediately after incision, fragments of the nodule were submitted to tissue freezing using a

refrigerant gas (R134A), sectioned with a microtome, and stained with toluidine blue for immediate evaluation by the pathologist present in the operating room. Cytology was indicative of benign epithelial proliferation, while frozen-section biopsy revealed a proliferation compatible with trichoblastoma. Therefore, a more conservative surgical approach was adopted, with removal of the nodule without additional techniques. The material was fixed in 10% neutral buffered formalin and submitted for histopathological analysis, following routine processing and hematoxylin and eosin staining. A well-demarcated and expansile proliferation was observed in the dermis, composed of cells arranged in cords, ribbons, and groups, with distinct cell borders, scant slightly eosinophilic cytoplasm, round to elongated nuclei, loose chromatin, and occasionally evident nucleoli, with mild anisocytosis, anisokaryosis, and pleomorphism, confirming the diagnosis of trichoblastoma. In the present case, the perianal location of the trichoblastoma was highly atypical. The literature emphasizes that early identification of benign neoplasms through intraoperative biopsy prevents unnecessary removal of large tissue extensions, which could occur if the mass were mistakenly treated as an invasive anal sac carcinoma. The diagnosis of trichoblastoma in the perianal region highlights that atypical locations may mimic neoplasms with distinct biological behavior. Frozen-section biopsy proved to be an indispensable ancillary diagnostic tool, allowing the surgeon to confirm the benign nature of the neoplasm in real time. This ensures a personalized, safe, and effective approach, avoiding both under-resection and unnecessary surgical radicality in cases of benign adnexal tumors located in uncommon sites.

INDEX TERMS: Veterinary oncology, canine, adnexal neoplasm, perianal region, veterinary cytopathology, frozen-section biopsy, surgical margin, differential diagnosis.

Main complications associated with subcutaneous ureteral bypass (SUB) implantation in domestic cats: a case series of 20 clinical cases

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Ureteral obstruction is a common condition in domestic cats that affects the upper urinary tract and is associated with high morbidity and mortality. It is characterized by partial or complete obstruction of the ureteral lumen caused by strictures, debris, blood clots and uroliths. Different therapeutic approaches may be employed for renal decompression, including both medical management and surgical techniques. Among the available options, the subcutaneous ureteral bypass (SUB) system has demonstrated promising outcomes. Therefore, the aim of this study was to describe and analyze the main complications associated with SUB implantation in domestic cats with ureteral obstruction. A retrospective analysis was conducted involving 20 cats, aged between 1 and 20 years, regardless of breed or sex, that underwent unilateral or bilateral SUB implantation at a feline referral clinic located in Rio de Janeiro, Brasil, from 2023 to 2026. Cats with ureteral obstruction confirmed by abdominal ultrasonography and monitored for 1 to 24 months were included in the study. Throughout the follow-up period, the main complications associated with the procedure were evaluated through the analysis of hematological parameters, diagnostic imaging findings, urinalysis, microbiological results, and instituted therapies. Among the findings, a higher frequency of affected females was observed (12/20, 60%) compared with males (8/20, 40%). In addition, 70% of cases were unilateral, and 30% were bilateral, values similar to those reported in previous studies. Intraoperative complications were identified in 65% of the cats, with the most frequent being the presence of capsular fluid (25%), followed by moderate to severe hemorrhage (16%) and other less prevalent alterations. Postoperative complications were common, with bacterial infection (55%), anemia (30%),

and device obstruction (25%) being the most frequently observed, followed by mineralization, catheter kinking, and clot formation (20% each). This study demonstrated a higher prevalence of bacterial infection than that reported in previous literature. This finding may be associated with characteristics of the studied population, case complexity, perioperative management, postoperative SUB maintenance, or other factors inherent to this retrospective case series. The most frequently isolated bacteria were coagulase-negative *Staphylococcus* spp., *Enterococcus faecalis*, and *Escherichia coli*, corroborating reports from previous studies. Among the antimicrobials demonstrating the highest susceptibility against coagulase-negative *Staphylococcus* spp. were amoxicillin-clavulanate, enrofloxacin, marbofloxacin, cephalexin, cefovecin, and meropenem. For *E. coli*, the most effective antimicrobials were meropenem, imipenem and ertapenem. For *E. faecalis*, the highest susceptibility was observed to amoxicillin-clavulanate and ampicillin. Eight cats (40%) presented positive urine cultures prior to the surgical procedure. This prevalence was higher than that reported in previous studies, which described a prevalence of 12.7%, with *E. coli* being the most commonly isolated microorganism. To the authors' knowledge, this study is the first to specifically address complications associated with SUB implantation in Brasil, particularly regarding the characterization of the bacterial agents involved and their regional antimicrobial susceptibility profiles. These findings contribute to a more targeted and evidence-based approach to antimicrobial therapy. Finally, further large-scale nationwide studies are warranted to establish the prevalence and profile of the main complications associated with this technique.

INDEX TERMS: Infection, bacteria, ureteral obstruction.

Characterization of sarcomas in dogs in Rio de Janeiro

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Sarcomas are malignant neoplasms of mesodermal origin that affect various mesenchymal tissues, with a high prevalence in cutaneous and subcutaneous tissues. They exhibit aggressive and highly infiltrative behavior. Although fine-needle aspiration cytology is widely used in clinical routine, histopathological analysis remains the gold standard, being essential for histological grading. This grading defines the metastatic potential and allows early diagnosis to guide the most appropriate therapeutic

interventions for each case. In addition to histopathological analysis, characterizing the affected population is extremely important, as it allows classification of groups of animals with a greater predisposition to developing sarcomas. This study analyzed and characterized the profile of sarcomas in dogs diagnosed at a veterinary laboratory in Rio de Janeiro through a descriptive and retrospective study. A total of 7,562 histopathological reports of canine neoplasms performed from 2015 to 2024 in a clinical

analysis laboratory in Rio de Janeiro were analyzed, of which 162 (2.1%) were diagnosed as sarcomas. To characterize the animals with sarcoma, identification parameters such as sex and age were evaluated, in addition to the most affected organ systems. Of the 162 sarcoma cases, 85 (52.47%) occurred in females and 76 (46.91%) in males, and in one case (0.62%), sex was not identified. Regarding age, elderly dogs (over seven years old) were the most affected, totaling 111 animals (68.52%), while adults (one to seven years old) totaled 51 animals (31.48%), and no puppies were affected. Regarding the systems affected, the historical high prevalence of sarcoma in cutaneous and subcutaneous tissues proved relevant in the local sample, with the integumentary system being the most affected with 90 cases (55.5%), followed by the hematopoietic/lymphoid (11.7%) and oral/dental (11.1%) systems; the remaining 21.7% were found in the urogenital, gastrointestinal, mammary, skeletal muscle, and ocular systems. A significant limitation of this study was the inability to determine whether the involvement of the lymphoid tissue was primary or secondary. Since

the research was based on laboratory data without access to the animals' full clinical history, it was not feasible to establish this distinction. Sarcoma occurrence was 2.1%, being similar to what is described in the literature. In a Pelotas/RS survey, the occurrence of soft tissue sarcomas in dogs totaled 166 cases, representing approximately 2.02% of the 8,203 total diagnoses. Although the cited study focused specifically on soft tissue sarcomas, the observed frequencies remain similar. Regarding the affected system, the literature states that the cutaneous system is the most common, corroborating the findings; however, the hematopoietic and oral systems also showed a considerable occurrence, as seen in studies such as one conducted in Belém/PA, where the hemolymphatic system was the third most frequent neoplastic location (6.60%). In comparison, the oral cavity recorded 3.30% of occurrences. Thus, the data suggest a higher frequency in elderly dogs with sarcoma and although the skin is the primary target, the hematopoietic and oral systems play an important role in canine oncology in Rio de Janeiro labs.

INDEX TERMS: Canine neoplasms, tumors, retrospective study.

Clinicopathological and ultrasonographic characterization of congenital hydrocephalus in a canine: a case report

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Hydrocephalus is a multifactorial neurological disorder characterized by the abnormal accumulation of cerebrospinal fluid (CSF) within the encephalic ventricular system, resulting from an imbalance between its production, circulation, and absorption, which leads to increased intracranial pressure, ventricular dilation, cerebral cortex compression, and parenchymal atrophy. This study reports the case of a mixed-breed female puppy, approximately two months old, admitted to the "Setor de Acolhimento e Monitoramento Animal" (AMA) at the "Universidade Federal Rural do Rio de Janeiro" (UFRRJ). Upon clinical examination, the patient exhibited an enlarged dome-shaped cranial vault, open fontanelles, strabismus, tremors, severe ataxia, disorientation, persistent vocalization, and an inability to maintain station or support her head. Complementary hematological evaluations revealed persistent severe thrombocytopenia (44,000 to 52,000/ μ L) and hypoproteinemia (4.9 to 5.4 g/dL). These findings may suggest a concurrent systemic condition, such as an underlying infectious or inflammatory process, which could have contributed to the clinical severity and should be considered in the clinicopathological interpretation of the case. The presumptive diagnosis was established by cranial radiography and transcranial ultrasonography, utilizing the temporal acoustic windows and the open fontanelle,

which evidenced marked ventricular dilation, reduction of cerebral convolutions, and increased intracranial anechoic content. Palliative therapy was instituted to reduce CSF production using omeprazole (2 mg/kg BID). Given the lack of a satisfactory initial therapeutic response, glucocorticoid therapy with prednisolone (1 mg/kg SID) was subsequently added to the protocol. After 14 days of the medical protocol, no significant clinical improvement was observed, and severe neurological signs persisted. Due to the unfavorable prognosis and severe impairment of quality of life, euthanasia was elected, based on the ethical principles of animal welfare. Gross necropsy confirmed the diagnosis of congenital hydrocephalus, revealing a severe reduction of the encephalic parenchyma with thinning of the cerebral tissue restricted to a thin layer, associated with a large volume of intracranial fluid with reddish coloration, indicative of secondary hemorrhage or a terminal procedural artifact. This case report highlights the relevance of transcranial ultrasonography as an accessible diagnostic tool in pediatric patients. It underscores the importance of integrating clinicopathological findings to suspect underlying systemic etiologies, while demonstrating that advanced-stage cases carry an unfavorable prognosis, reinforcing the importance of ethical decision-making when facing irreversible conditions.

INDEX TERMS: Cerebrospinal fluid, transcranial imaging, congenital anomaly, veterinary neurology, pediatric neonatology.



Presumptive diagnosis of uveodermatologic syndrome in an Akita dog: a case report

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The canine uveodermatologic syndrome (UDS) is a rare T-lymphocyte-mediated autoimmune inflammatory disorder targeting melanocytes or melanotic protein components in the uvea, skin, and mucous membranes. Clinical manifestations primarily include bilateral anterior uveitis or severe panuveitis, often associated with dermatological lesions and areas of depigmentation. Akitas are considered the breed most commonly affected. The objective of this work is to report the clinical presentation, treatment, and ophthalmic progression of a presumptive UDS case. A 7-year-old Akita dog was presented to the Veterinary Hospital of the "Universidade Federal Rural do Rio de Janeiro" (UFRRJ) with a primary complaint of vision loss, conjunctival hyperemia, glaucoma secondary to uveitis, and a one-month and one-week history of nasal depigmentation, having been partially treated for UDS. Initial ophthalmic examination revealed absent bilateral menace responses and pupillary light reflexes. Slit-lamp biomicroscopy demonstrated 360-degree iris bombé in both eyes (OU), aqueous flare, vitreous liquefaction, and severe ocular hypotony, measuring 3 mmHg in the right eye (OD) and 7 mmHg in the left eye (OS). Presumptive diagnosis of UDS was established based on clinical, ophthalmic, and dermatological findings, considering the well-known breed predisposition. Despite being the definitive diagnosis for uveodermatologic syndrome, histopathological examination was not performed due to the owner's refusal. A multimodal therapeutic protocol was initiated with systemic immunomodulation

using oral azathioprine and prednisolone in a gradual tapering schedule, combined with topical therapy using 1% brinzolamide, 1% prednisolone acetate, and 1% cyclosporine eye drops. The choice of the immunosuppressant azathioprine was made as recommended by the literature. The patient was monitored by the Ophthalmology Service residents for nine months, during which the animal showed progression of the clinical condition, developing irreversible chronic ocular sequelae due to the initial acute phase. These changes included posterior synechiae, dyscoria, leukocoria, mature bilateral cataracts, areas of retinal microdetachment, and early signs of phthisis bulbi, ultimately progressing to blindness. Discontinuation of the immunosuppressive therapy resulted in an acute recurrence of ophthalmic signs and mild recurrence of dermatological signs, which were controlled after reinstating oral and topical treatments. Dermatological alterations worsened progressively during clinical follow-up, characterized by perilabial and nasal depigmentation and alopecia. Despite the loss of vision, the therapeutic protocol successfully achieved clinical control, ocular comfort, and quality of life for the patient. This case demonstrates that early recognition of signs and immediate implementation of assertive immunosuppressive therapy are essential to control inflammation and minimize ocular damage. Despite proper treatment, the progression of the ophthalmic condition resulted in visual sequelae, reinforcing the necessity and importance of a specialized veterinary ophthalmologist in patient follow-up.

INDEX TERMS: Uveitis, depigmentation, dermatology, ophthalmology, retina.

Atypical extragenital transmissible venereal tumor in a prepubertal dog: a case report

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Transmissible venereal tumor (TVT) is a round cell neoplasm transmitted among dogs through the transfer of viable tumor cells, primarily during coitus or through direct contact with tumor lesions. It mainly affects young, non-neutered animals and is more frequently observed in regions with large populations of free-roaming dogs. The disease typically manifests in the external genitalia, forming ulcerated and highly vascularized masses, although extragenital presentations may also occur. Diagnosis is based on clinical history, physical examination, and cytology,

while imaging studies assist in determining the extent of the disease. The treatment of choice is chemotherapy with vincristine sulfate. This study reports an atypical case of extragenital TVT in a prepubertal female dog, emphasizing its diagnostic and therapeutic aspects. On January 16, 2026, a mixed-breed female dog, adopted in August 2025 at approximately one month of age, was presented with apathy, abdominal pain, and episodes of vomiting. Laboratory tests revealed leukocytosis with neutrophilia and monocytosis, compatible with an acute inflammatory process, as well as increased



aspartate aminotransferase (AST) activity. Abdominal ultrasonography demonstrated a reactive jejunal lymph node, left nephrolithiasis, splenomegaly, gastropathy, cholecystitis, diffuse hepatopathy, and enteritis. On the following day, giardiasis was confirmed by fecal parasitological examination. After clinical stabilization, the patient was discharged with supportive treatment. Subsequently, the dog developed vomiting associated with coughing, prompting thoracic radiography, which revealed multiple pulmonary nodules and displacement of the trachea. On February 7, 2026, the patient returned with worsening respiratory signs, including productive cough, mucopurulent ocular discharge, mild dyspnea, and hyperthermia. Additional examinations demonstrated an intensified inflammatory response. Thoracic radiography confirmed the persistence of pulmonary nodules and revealed an alveolar pattern consistent with secondary pneumonia, as well as moderate bronchopathy. Treatment was instituted with inhaled beclomethasone, nutritional supplementation, and ophthalmic medication. On March 21, 2026, the patient presented with lameness of the left thoracic limb. Radiographic evaluation revealed aggressive osteolysis of the distal ulna, raising suspicion of

either a neoplastic or inflammatory process. Given the previously identified pulmonary nodules, metastatic disease was considered. In April, nodular lesions developed in the oral cavity and periocular region. Fine-needle aspiration cytology (FNAC), fungal culture, and additional imaging examinations were performed. Although the fungal culture was negative, cytological evaluation revealed a round cell neoplasm highly suggestive of TVT. Following diagnosis, chemotherapy with vincristine sulfate was initiated (0.75 mg/m²; 0.39 mg IV weekly). After the first three treatment sessions, significant regression of the oral and facial lesions, marked clinical improvement, and progressive reduction of the pulmonary nodules were observed. The bone lesion also showed reparative progression, with callus formation and recovery of limb function. Despite the favorable therapeutic response, the owner failed to return after the third chemotherapy session, resulting in treatment discontinuation. This case demonstrates that TVT may occur in prepubertal patients and present with aggressive extragenital manifestations, highlighting the importance of early diagnosis, complete staging, and inclusion of TVT among the differential diagnoses of atypical presentations.

INDEX TERMS: *Canis familiaris*, round cell neoplasm, extragenital TVT, metastasis.

High seroprevalence of *Toxoplasma gondii* in domestic cats in the municipality of Rio de Janeiro

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Toxoplasma gondii is an apicomplexan protozoan capable of infecting humans, birds and terrestrial and aquatic mammals. Domestic and wild felids are the definitive hosts and play a fundamental role in the epidemiology of toxoplasmosis by shedding environmentally resistant oocysts in their feces, contributing to environmental contamination. Therefore, cats represent important reservoirs of the parasite. Hence, it is important to maintain epidemiological surveillance on these animals, as there is evidence that definitive hosts can eliminate oocysts in feces beyond the first infection in cases of immunosuppression or reinfection with genetically distinct strains. In this study, 1,296 blood samples from domestic cats from different neighborhoods in the municipality of Rio de Janeiro, Brasil, were evaluated. Samples were stratified according to the West, North, and South zones, with 425, 430 and 441, respectively, animals sampled in each region from 2022 to 2025. Serological analysis was performed using the modified agglutination test (MAT), with a cutoff point of 1:25; all samples were titrated up to 1:200 for the detection of anti-*T. gondii* IgG antibodies; samples reactive within this titration range will subsequently undergo further

serial titration up to the maximum dilution (1:3200), as planned for the second phase of the experiment. Molecular detection was carried out by quantitative polymerase chain reaction (qPCR) targeting the B1 gene, ovine brain tissue samples known to be positive for *T. gondii*, provided by "Universidade Federal de Santa Maria" (UFSM) and ultrapure water as a negative control. The sample size was reduced to 400 randomly selected samples. This selection was based on a sample proportionality calculation comparing the estimated population of the municipality of Rio de Janeiro to the population of each urban zone, using the most recent IBGE census of 2022. Epidemiological variables, including sex, age, breed, and geographic zone, were evaluated as potential risk factors using Pearson's χ^2 test with a 95% significance level ($p < 0.05$). Overall seropositivity was 61.34%, with the highest frequency observed in the North Zone (71.16%), followed by the South Zone (57.43%) and West Zone (55.45%), with significant differences among regions ($p < 0.001$). Antibody titers ranged from 1:25 to 1:200, with predominance of low titers. No significant associations were found between seropositivity and sex, age, or breed. All samples analyzed by qPCR were negative for



T. gondii DNA. These findings demonstrate widespread exposure of domestic cats to *T. gondii* throughout the municipality of Rio de Janeiro and reveal marked spatial heterogeneity, with higher exposure in the North Zone. The results reinforce the role of domestic

cats as sentinels regarding exposure to the parasite in urban environments and highlight the importance of integrated epidemiological surveillance strategies based on the One Health approach.

INDEX TERMS: Toxoplasmosis, One Health, sentinel animals, environmental contamination, modified agglutination test.

Monoclonality by PARR in a reactive lymph node of a dog

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Dogs presenting with lymphadenomegaly commonly have lymphoma and infectious diseases among their main differential diagnoses. Polymerase chain reaction for antigen receptor rearrangements (PARR), also referred to as clonality testing, is a molecular technique used to assess lymphocyte clonality. Monoclonal lymphocyte populations, derived from a single transformed cell, are generally associated with lymphoid neoplasia, whereas polyclonal populations are typically indicative of reactive lymphoid hyperplasia. This study describes a case of a monoclonal PARR result in a dog diagnosed with reactive lymphoid hyperplasia at the Veterinary Hospital of the “Universidade Federal Rural do Rio de Janeiro” (UFRRJ). A 1-year-old dog presented with popliteal lymphadenomegaly and was diagnosed cytologically with reactive lymphoid hyperplasia accompanied by marked plasmacytosis. Hematological analysis demonstrated thrombocytopenia ($108 \times 10^3/\mu\text{L}$), and the dog tested positive for *Ehrlichia canis* on the SNAP 4Dx Plus assay, with a previous history of treated ehrlichiosis. PARR analysis was performed using real-time polymerase chain reaction (PCR) with melting curve analysis on both lymph node aspirates and cytology slides. Canine B- and T-cell lymphoma samples confirmed by immunohistochemistry (IHC) were used as monoclonal controls for the assay. The analysis revealed B-cell clonality. The marked plasmacytosis observed in this case may explain the

B-cell clonality detected by PARR, as plasma cells represent terminally differentiated B lymphocytes, and their increased representation may have generated a monoclonal peak in the clonality assay. Therefore, cytological or histopathological evaluation should be performed prior to clonality testing to ensure that the cellular composition of the sample is considered during interpretation of monoclonal B-cell results. Benign monoclonal results in dogs with reactive lymphoid hyperplasia have been rarely reported and have occasionally been associated with canine ehrlichiosis. However, the mechanisms underlying this finding, the epidemiological characteristics of affected animals, and the true frequency of such occurrences remain poorly understood. The hematological abnormalities and the cytological and serological results suggest ongoing antigenic stimulation within the lymph node rather than a neoplastic process, suggesting that the monoclonal PARR result may represent a benign clonal lymphocyte expansion. These findings reinforce that monoclonal PARR results may occur in lymph nodes with morphological features consistent with reactive lymphoid hyperplasia. Recognition of this phenomenon is clinically important, as an erroneous diagnosis of lymphoma may result in unnecessary chemotherapy, whereas infectious or inflammatory conditions require substantially different therapeutic approaches.

INDEX TERMS: *Ehrlichia canis*, lymphoid hyperplasia, plasmacytosis, clonality testing.

Pemphigus foliaceus in a domestic feline (*Felis catus*): the importance of early diagnosis in therapeutic success

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Pemphigus foliaceus (PF) is the most frequently diagnosed autoimmune dermatosis in felines, characterized by the production of autoantibodies

directed against intercellular adhesion molecules of keratinocytes. The binding of these autoantibodies to desmosomal components triggers acantholysis, leading



to the loss of epidermal cohesion and the formation of superficial intraepidermal pustules. Although its etiopathogenesis remains incompletely understood, genetic factors, ultraviolet radiation exposure, drug administration, vaccine stimuli, and idiopathic mechanisms have been implicated in the genesis of the disease. Clinically, PF manifests as transient pustules, crusts, erythema, scaling, alopecia, erosions, and edema, typically distributed in a bilateral and symmetrical pattern. Lesions predominantly affect the face, pinnae, nasal planum, periocular region, and footpads, showing progressive evolution when adequate therapy is not instituted. Despite representing the most common cutaneous autoimmune disease in cats, its occurrence remains relatively uncommon in dermatological practice. This paper aims to report a case of PF in a domestic feline (*Felis catus*) treated at the “Universidade Estácio de Sá” (UNESA) Veterinary Polyclinic, Vargem Pequena/RJ, emphasizing the clinical, diagnostic, and therapeutic aspects of the disease. A mixed-breed, eight-year-old, 7.2 kg male cat was presented to the dermatology service with a 30-day history of skin disease. The patient was semi-restricted, normoactive, and normorexic, with no evident systemic abnormalities. Dermatological examination revealed erythema, scaling, and crusts on the nasal bridge extending to the nasal planum, scaling on the inner aspect of the pinnae, areas of erythema and alopecia around the nipples, and fissures and crusts involving all footpads. Lesions were distributed symmetrically. The presence of multifocal, symmetrical crusty-desquamative dermatitis involving the footpads

and nasal planum directed the clinical suspicion toward the pemphigus complex. However, dermatophytosis, superficial pyoderma, and allergic dermatitis were included as differential diagnoses. Histopathological examination of biopsies from the footpads, nasal bridge, and pinnae revealed: chronic-active, multifocal to diffuse, superficial pustular and crusty dermatitis, associated with acanthosis, orthokeratotic and parakeratotic hyperkeratosis, serocellular crust formation, basal cell vacuolization, inflammatory exocytosis, and the formation of superficial intraepidermal pustules composed predominantly of neutrophils. Periodic acid-Schiff (PAS) staining did not reveal fungal structures. Direct immunofluorescence, although highly specific for PF, was not performed due to its limited availability in veterinary medicine. The diagnostic conclusion of PF was based on the correlation of clinical and histopathological findings. Therapy was instituted with prednisolone (2 mg/kg SID), with significant clinical remission of the footpad and auricular lesions by the 20th day of treatment. Corticosteroid therapy will be tapered only after total remission of lesions and may be replaced by cyclosporine (7 mg/kg SID) to mitigate the adverse effects of long-term glucocorticoid use. Restriction of sun exposure was recommended, as it may have been the triggering factor for the PF. The rapid therapeutic response is attributed to the early diagnosis. Pemphigus foliaceus should be considered as a differential diagnosis in felines with multifocal crusty and desquamative dermatitis involving the footpads and mucocutaneous regions.

INDEX TERMS: Feline medicine, veterinary dermatology, autoimmune disease, corticosteroid therapy, histopathology, immunosuppression, skin.

Genetic analysis of the canine ear microbiome before and after antimicrobial therapy: applications of next-generation sequencing in the veterinary medicine field

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Advances in molecular biology techniques have expanded knowledge of the dynamics of microbial communities associated with infectious diseases in companion animals. In canine otitis externa, alterations in the ear microbiome play an important role in perpetuating the inflammatory and infectious process. This exploratory report evaluated changes in the ear microbiome of a 1-year-old male Shih-Tzu dog diagnosed with otitis externa, using next-generation sequencing to compare bacterial culture before and after antimicrobial treatment and highlight the contribution of molecular tools to microbiological diagnosis. The patient presented to the veterinary clinic with a purulent discharge from the left ear. Clinical examination revealed

desquamation, hyperkeratosis, hyperpigmentation, and mild erythema of the auricular pinnae, accompanied by pain upon manipulation. Otitis externa was diagnosed based on clinical and cytological findings, and samples for bacterial culture and microbiome sequencing were collected before treatment. The patient was treated with topical ciprofloxacin (Auritop®) for 30 days. At the follow-up visit, otitis externa had not completely resolved, although purulent discharge had decreased, and a second sample was collected. Microbiome characterization was performed using ear samples subjected to DNA extraction and next-generation sequencing, with library preparation by amplification of the 16S rDNA gene (Illumina, USA). Finally, statistical

and microbial diversity analyses were performed using the MicrobiomeAnalyst platform. The microbiological profiles obtained before and after therapy were evaluated for taxonomic composition and changes in microbial diversity observed after the therapeutic intervention. In parallel, bacterial identification was performed by matrix-assisted laser desorption/ionization time-of-flight mass spectrometry (MALDI-TOF MS) for comparative purposes. The predominant taxa identified in the external ear canals belonged mainly to the families Pseudomonadaceae, Corynebacteriaceae, Staphylococcaceae, Streptococcaceae, and Moraxellaceae. Notably, *Pseudomonas* spp. persisted throughout the study, as confirmed by bacterial culture performed on samples collected before and after treatment, as well as in the sequencing. The persistence of *Pseudomonas aeruginosa* after therapy confirms the relevance of this pathogen in canine otitis externa and emphasizes the need for targeted therapeutic strategies. Furthermore, the increase in microbial diversity observed after treatment suggests that clinical recovery is associated not only with pathogen reduction but also

with the restoration of balance within the microbial community. These results reinforce the potential of genomic analyses to improve the study of microbiota associated with disease conditions, contributing to the development of more precise therapeutic approaches in the veterinary field. Molecular analysis revealed significant differences in bacterial composition between the pre- and post-treatment periods, demonstrating the complexity of the ear microbiome. After therapy, a reduction in the relative abundance of bacterial groups potentially associated with the infection was observed, along with an increase in the participation of other taxa. Despite these changes, the bacterium *P. aeruginosa* remained one of the main components of the bacterial community after treatment, suggesting a high capacity for persistence and potential involvement in maintaining the clinical condition. Therefore, genetic sequencing provided a more comprehensive view of the microbial composition than culture-dependent techniques, allowing detection of microorganisms not recovered by conventional methods and a better understanding of the changes associated with the treatment.

INDEX TERMS: Next-generation sequencing, canine otitis externa, ear microbiome, *Pseudomonas aeruginosa*.

Otitis as a sign of underlying dermatopathy in dogs: a case series of first-visit patients at a veterinary dermatology outpatient clinic (2020–2025)

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Otitis externa is among the most frequent reasons for dermatological consultation in dogs and has a high prevalence, affecting 5% to 20% of the canine population. Anatomically, it can be classified as otitis externa, media, or interna, whereas, morphologically, it may present as eczematous-ceruminous, suppurative, or stenotic forms. The condition most frequently affects young adult dogs between three and five years of age. Regarding breed predisposition, brachycephalic dogs show greater susceptibility, notably the Shih Tzu and Pug; however, Labrador Retriever, Golden Retriever, and mixed-breed dogs are also frequently affected. From an epidemiological standpoint, there is a close relationship between otitis and dermatopathies, with allergic dermatopathies, especially canine atopic dermatitis and food hypersensitivity, accounting for approximately 75% of cases. Otitis externa is often interpreted as a primary and isolated condition, although, in most cases, it represents a secondary manifestation of underlying dermatopathies. Thus, inadequate control of the underlying skin disease is the main factor associated with the recurrence of otitis, making the identification and management of the primary cause essential for therapeutic success and relapse prevention. This study aimed to characterize otologic first-visit cases and their relationship with concomitant dermatopathies and the predominant morphological pattern. A retrospective

survey of dermatological records was carried out at “Universidade Estácio de Sá” (UNESA), Vargem Pequena Campus, from 2020 to 2025. Of the 1,038 appointments recorded, 444 were first-visit appointments; excluding follow-up visits, the sample comprised 206 dogs with otitis. Sex, breed, age, and anatomical and morphological classification of otitis, as well as concomitant dermatopathies, were evaluated descriptively; the association between the eczematous-ceruminous form and allergic disease was assessed using Fisher’s exact test ($p < 0.05$). Females were more frequently affected, at 59.2% (122/206). The most frequent concomitant dermatopathy was allergic disease, at 34.0% (70/206), followed by cases without an associated disease, at 30.1% (62/206), and *Malassezia* dermatitis, at 7.3% (15/206). The most affected breeds were mixed-breed dogs, at 23.8% (49/206), Shih Tzu, at 20.9% (43/206), and French Bulldog, at 6.8% (14/206). The most affected ages ranged from four to eight years, at 56.3% (116/206). Anatomically, otitis externa predominated, at 85.0% (175/206), and morphologically, the eczematous-ceruminous form predominated, at 65.0% (134/206), followed by the stenotic form, at 12.1% (25/206), and the suppurative form, at 8.7% (18/206); 14.1% (29/206) showed clinical signs of otitis (otic pruritus) but without morphological alterations. There was no statistically significant association between



the eczematous-ceruminous form and allergic disease (35.8%, 48/134 vs. 29.2%, 21/72; $p = 0.357$). These findings are consistent with the literature: otitis externa is commonly secondary to allergic dermatitis and *Malassezia* spp.; the higher frequency among mixed-breed dogs, Shih Tzu, and French Bulldogs corroborates the reported breed predisposition, particularly among brachycephalics, and the most affected age range is

close to the young adults described in the literature. It is concluded that otitis was predominantly associated with allergic dermatoses, with a predominantly eczematous-ceruminous pattern. Even without concomitant dermatological signs in 30.1% of cases, otitis should be interpreted as a secondary clinical manifestation, rather than a primary disease, frequently linked to allergic dermatopathies.

INDEX TERMS: Eczematous otitis, suppurative otitis, stenotic otitis, allergic otitis.

Anesthetic complications in osteosynthesis procedures in dogs and cats: a retrospective study of 34 cases

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Anesthesia in orthopedic surgical procedures represents a clinically relevant challenge in veterinary hospitals. Patients undergoing osteosynthesis frequently present systemic impairment secondary to trauma, while several drugs used in anesthetic protocols have the potential to induce cardiovascular and metabolic adverse effects. Osteosynthesis is among the most commonly performed procedures in small animal practice, and understanding the complications associated with these surgeries is essential for improving anesthetic safety and clinical outcomes. To identify and correlate the main anesthetic complications associated with osteosynthesis procedures, 34 anesthetic records of dogs and cats treated at the Veterinary Hospital of the "Universidade Federal Rural do Rio de Janeiro" were retrospectively reviewed. Data collected included species, American Society of Anesthesiologists (ASA) classification, anesthetic protocol, and the nature, frequency, and timing of recorded complications. All 34 patients were classified as ASA II. Anesthetic complications were identified in 70.6% of the procedures (24/34), with 20 cases occurring in dogs and four in cats. During the preoperative period, two dogs developed emesis after receiving morphine as premedication, with one case progressing to pulmonary aspiration. All remaining complications occurred during the maintenance phase of anesthesia, suggesting this period as the most vulnerable stage. Among the patients presenting complications, the most frequent events were cardiovascular and metabolic in nature, including bradycardia (41.6%), arterial hypertension (25%), hypothermia (25%), tachycardia (16.6%), arterial hypotension (12.5%), and intraoperative emesis (8.3%). Of particular relevance, one cat developed an idioventricular rhythm associated with severe bradycardia and hypotension during anesthetic

maintenance, requiring administration of scopolamine to reverse the conduction disturbance, highlighting the severity of arrhythmias that may occur in this surgical context. Analysis of the anesthetic protocols revealed associations consistent with the expected pharmacological effects of the administered agents and the observed hemodynamic complications. In cases of bradycardia, dexmedetomidine associated with methadone was the predominant premedication protocol. This association is compatible with reflex bradycardia secondary to peripheral vasoconstriction induced by α_2 -adrenergic agonists and increased vagal tone promoted by pure μ -opioid agonists, with scopolamine being the drug most commonly used for reversal in multiple patients. Furthermore, in cases of arterial hypertension, ketamine was present in all induction protocols. It was associated with dexmedetomidine in the premedication of most affected animals, a combination known to promote peripheral vasoconstriction and increased arterial blood pressure. Hypothermia was observed in both species and occurred predominantly in small-breed animals, especially Pinschers and Yorkshire Terriers. Recorded intraoperative temperatures ranged from 35.5 °C to 35.9 °C, a finding compatible with prolonged procedures performed without active thermal support. The results suggest that anesthetic complications in osteosynthesis procedures were frequently associated with the drugs employed, particularly those with recognized cardiovascular effects, and that the maintenance phase represents the period of greatest risk. Continuous monitoring and careful selection of anesthetic agents, considering their individual and combined adverse effects, are essential measures for the prevention and early management of complications during orthopedic procedures in small animals.

INDEX TERMS: Veterinary anesthesia, perioperative complications, orthopedic surgery, small animals, anesthetic monitoring.

Control of supraventricular tachycardia and reverse remodeling with ivabradine in a dog: case report

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Supraventricular tachycardia (SVT) is a tachyarrhythmia originating above the ventricles, characterized by premature depolarizations arising from atrial or junctional myocardial tissue. This arrhythmia can be secondary to myxomatous mitral valve disease (MMVD) and compromise cardiac output, thereby exacerbating heart failure in dogs. Conventional treatment with calcium channel blockers may be limited in geriatric dogs with multiple comorbidities due to refractoriness and the risk of negative inotropic effects. Ivabradine is an If current inhibitor in the sinoatrial node that has emerged as an alternative because it reduces heart rate (HR) while preserving myocardial contractility. The objective of this report was to describe the use of ivabradine in the treatment of refractory SVT in a dog with concurrent comorbidities. A 14-year-old, 4.5 kg, male Poodle diagnosed with MMVD (stage B2) and chronic kidney disease (CKD) was admitted to the Veterinary Hospital of the “Universidade Federal Rural do Rio de Janeiro” (UFRRJ). The initial electrocardiogram (ECG) revealed sustained SVT in an atrial rhythm with ectopic P waves originating from the floor of the right atrium, showing a mean HR of 200 beats per minute (bpm) and a systolic blood pressure of 190 mmHg. Echocardiography confirmed significant mitral regurgitation with left atrioventricular enlargement, presenting a left atrium-to-aorta ratio (LA:Ao) of 2.03. Baseline renal parameters showed a serum creatinine level of 2.08 mg/dL. The initial prescription consisted of pimobendan (0.25 mg/kg q12h) and digoxin (0.005 mg/kg q12h); however, due to the market shortage of digoxin, diltiazem was initiated at a dose of

1 mg/kg q8h. Despite dose titration of diltiazem up to 2 mg/kg q8h over three months, a satisfactory response was not achieved. The dog progressed to paroxysmal SVT, exhibiting peak HRs of 256 bpm and pulse dyssynchrony. Follow-up echocardiography revealed severe structural progression, characterized by mitral valve prolapse and chordae tendineae rupture. To avoid hemodynamic collapse and prevent further worsening of renal perfusion with higher doses of hypotensive agents, diltiazem was discontinued, and ivabradine was prescribed at 0.55 mg/kg q12h. Nine days after the medication switch, the ECG demonstrated conversion to an atrial rhythm with a mean HR of 102 bpm and adequate pulse synchrony; no SVT episodes were documented during the reassessment. The patient has been under follow-up for eight months, remaining hemodynamically stable despite concurrent systemic conditions. Follow-up echocardiography revealed preserved systolic function, with an ejection fraction of 95% and fractional shortening of 69%, alongside a reduction in cardiac chamber size, with the LA:Ao ratio decreasing to 1.20, suggesting reverse remodeling compared to baseline measurements. Renal parameters remained stable during follow-up, with a creatinine level of 1.33 mg/dL. In this case, ivabradine aided in achieving chronotropic control in the patient. By acting selectively without exerting a negative inotropic effect, the drug proved to be a viable alternative for nephropathic dogs refractory to conventional antiarrhythmics, potentially assisting in the reduction of myocardial overload and promoting longer survival with good quality of life in clinical practice.

INDEX TERMS: Veterinary cardiology, supraventricular tachycardia, ivabradine, reverse remodeling.

Retrospective study of indolent corneal ulcer in dogs treated at the Ophthalmology Service of the UFRRJ Veterinary Hospital in 2025: a case series

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Indolent corneal ulcer, or spontaneous chronic corneal epithelial defect (SCCED), is an ophthalmic condition characterized by failure of adhesion between the corneal epithelium and the underlying stroma, resulting in lesion persistence and delayed healing. Its etiopathogenesis is associated with defective basement

membrane and hemidesmosome alterations, structures responsible for epithelial adhesion to the anterior stroma. In dogs, this condition is more prevalent in middle-aged to older animals. It is associated with variable degrees of ocular discomfort, corneal neovascularization, and edema, requiring prolonged follow-up and serial

therapeutic interventions. The objective of this study was to describe the clinical, therapeutic, and outcome profile of dogs diagnosed with indolent corneal ulcer treated during 2025 at the Ophthalmology Service of the Veterinary Hospital of the “Universidade Federal Rural do Rio de Janeiro” (UFRRJ). A retrospective case series study was conducted through the analysis of clinical records. Data were collected regarding breed, sex, age, duration of clinical signs, laterality, recurrences, comorbidities, instituted treatment, procedures performed, healing time, and clinical outcome. During the study period, 569 appointments were recorded, of which 20 corresponded to cases of indolent corneal ulcer in dogs, representing 3.5% of the ophthalmic caseload in 2025. Twenty dogs were evaluated, totaling 29 affected eyes. Regarding ocular involvement, 11/29 eyes (37.9%) were associated with unilateral cases and 18/29 eyes (62.1%) with bilateral cases. Mixed-breed dogs and Yorkshire Terriers were the most represented, with 5/29 eyes each (17.2%), followed by French Bulldogs, with 4/29 eyes (13.8%), and Labradors, with 3/29 eyes (10.3%). Age ranged from 1 to 17 years, with an approximate mean of nine years, and lesion duration ranged from 30 to 90 days, with a mean of 43 days. The main therapeutic approach consisted of mechanical removal of the non-adherent epithelium through corneal debridement with a sterile cotton swab or flexible cotton-tipped applicator after

instillation of anesthetic eye drops containing 0.5% proxymetacaine hydrochloride. In refractory cases, diamond burr debridement was performed in 4/29 affected eyes (13.8%). Complementary procedures included epilation of distichiae, management of eyelid abnormalities, investigation of endocrinopathies, and surgical planning when necessary. Topical treatment was prescribed as support for corneal repair and included mainly tobramycin (23/29 eyes, 79.3%), sodium hyaluronate-based lubricants (18/29 eyes, 62.1%), and 1% atropine (12/29 eyes, 41.4%). In selected cases, ciprofloxacin, moxifloxacin hydrochloride, gatifloxacin, carbomer-based lubricant, tropicamide, non-steroidal anti-inflammatory drugs, tacrolimus, equine heterologous serum, and an Elizabethan collar were prescribed. Documented healing occurred in 25/29 eyes (86.2%). Recurrences after clinical improvement were observed in 4/29 eyes (13.8%), including contralateral involvement in 3/29 eyes (10.3%). The results demonstrated that SCCED presents variable clinical behavior and frequently requires active therapeutic management of the corneal epithelium. Cotton swab debridement was the main intervention, while topical therapy supported tissue repair. This study reinforces the importance of specialized ophthalmic evaluation, correction of predisposing factors, owner adherence to therapeutic recommendations, and serial ophthalmic follow-up.

INDEX TERMS: Basement membrane, corneal debridement, corneal wound healing, epithelial adhesion, ocular surface, superficial keratectomy, veterinary ophthalmology.

Electrocardiographic effects of aminophylline in dogs with bronchitis and mitral valve disease

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Increased longevity in companion animals raises the demand for geriatric care, with cardiorespiratory evaluations being highly prominent. Small breed dogs are predisposed to heart disease, especially mitral valve disease (MVD), which can alter autonomic control. The enlargement of cardiac chambers due to overload predisposes to arrhythmias. Chronic bronchitis, characterized by a persistent daily cough for more than two months without another clear etiology, is also common in elderly patients. Aminophylline is one of the main drugs prescribed for the treatment of this disease, but it has a positive chronotropic effect, which may alter cardiac variability and induce arrhythmias. Due to the arrhythmogenic potential of MVD and aminophylline, this study aims to correlate resting electrocardiographic (ECG) findings in dogs with chronic bronchitis and MVD before and after the use of the drug, identifying changes in heart rhythm and rate. Conducted since 2025 at the Veterinary Hospital of

“Universidade Federal Rural de Rio de Janeiro” (UFRRJ), the project adopts the following inclusion criteria: dogs with chronic bronchitis and MVD in stages B1, B2, and C. A resting ECG was performed before (D0) and after 30 days of treatment with aminophylline (10 mg/kg, every 12 hours). Parameters such as heart rates, wave amplitudes and durations (P, QRS, T), PR interval, and ST segment were evaluated. Statistical analysis used non-parametric tests (Wilcoxon for paired samples), adopting a significance level of 5% ($p < 0.05$). To date, eight dogs have been included (mean age of 8.5 years; four mixed-breed, three poodles, and one Yorkshire), all in stage B1 of MVD. The mean heart rate ranged from 152.5 (112–158) bpm (D0) to 145.5 (103–169) bpm (D30), without a significant reduction. The P wave amplitude decreased from 0.36 (0.195–0.44) mV to 37 (36–41) mV, while its duration increased from 35 (34–39) ms to 37 (35.5–41) ms. The QRS complex and the QT interval remained stable. The T wave amplitude

shifted from -0.215 (-0.48 to 0.295) mV to -0.075 (-0.21 to 0.145) mV, altering the repolarization vector. The electrical axes of the P wave and QRS underwent subtle variations. In the statistical comparison, only the P wave amplitude showed a significant variation ($p = 0.028$); the other parameters remained stable in the animals evaluated in the study. Despite the properties of aminophylline, there was no increase in the mean heart rate. The significant variation in P wave amplitude reflects atrial depolarization, suggesting a subtle modulation in electrical conduction. Since the dogs were in stage B1, discreet changes are expected, and the

stability of the parameters is consistent with this clinical profile. The small sample size at the present moment requires caution in interpreting the P wave, as it raises the risk of incidental findings in multiple comparisons. Thus, it is suggested that the positive chronotropic potential of aminophylline did not generate relevant changes in rhythm or ventricular conduction during the 30 days evaluated with ECG. However, the project remains ongoing to expand the sample size and provide greater statistical robustness. Furthermore, 24-hour ambulatory Holter monitoring is being conducted as a complementary analysis tool.

INDEX TERMS: Heart rate, heart rhythm, geriatric medicine, cardiorespiratory evaluation.

Endoscopic findings suggestive of sliding hiatal hernia in domestic cats: a potentially underdiagnosed condition — case reports

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Hiatal hernia is an uncommon condition in cats and is characterized by the displacement of the cardia and, occasionally, the gastric fundus through the esophageal hiatus. Type I (sliding) hiatal hernia is the most common form and may be congenital or acquired. Clinical signs are often intermittent and include regurgitation and vomiting, frequently associated with reflux esophagitis. Upper gastrointestinal endoscopy can identify abnormalities of the gastroesophageal junction, esophagitis, cardia incompetence, and protrusion of gastric mucosa into the esophageal lumen. Two domestic cats with a history of chronic gastrointestinal disease were evaluated at a feline specialty practice. The first case involved an eight-year-old neutered male cat with chronic vomiting and intermittent episodes of regurgitation of long duration, without changes in appetite. Physical examination findings were unremarkable. Complete blood count, serum biochemical profile, and total thyroxine concentration were within normal limits. Abdominal ultrasonography revealed focal thickening of the gastric fundus ranging from 0.41 to 0.45 cm, consistent with gastropathy. The cat underwent upper gastrointestinal endoscopy with collection of biopsy samples. Endoscopic examination revealed cardia incompetence associated with protrusion of gastric mucosa into the distal esophageal lumen and esophagitis. These findings were considered compatible with a suggestive diagnosis of sliding hiatal hernia. Histopathological examination of gastric and duodenal biopsies demonstrated mild lymphoplasmacytic infiltrates, consistent with concurrent chronic gastroenteropathy. The second case involved a 12-year-old neutered male cat seropositive for feline immunodeficiency virus antibodies, which presented for progressive weight loss and chronic

vomiting. Physical examination revealed a low body condition score (3/9) without other significant abnormalities. Hematologic evaluation showed marked neutrophilic leukocytosis and mild anemia, whereas serum hepatic and renal biochemical parameters were within reference intervals. Abdominal ultrasonography demonstrated moderate diffuse thickening of all small intestinal segments, ranging from 0.40 to 0.48 cm. Upper gastrointestinal endoscopy revealed findings similar to those observed in the first case, characterized by cardia incompetence associated with protrusion of gastric mucosa into the distal esophagus. Histopathology and immunohistochemistry (IHC) of intestinal biopsy specimens were consistent with lymphocytic duodenitis. There are limited data regarding the prevalence of hiatal hernia in domestic cats. The diagnosis can be challenging using any imaging modality, because type I hiatal hernias are intermittent and variable in severity, potentially leading to underestimation of this condition. In both cases, endoscopy was initially performed to investigate gastroenteric abnormalities detected by abdominal ultrasonography and to obtain histopathological samples. However, the procedure also allowed identification of abnormalities of the gastroesophageal junction that may have contributed to the observed clinical signs. These findings raise the possibility that anatomical or functional abnormalities of the cardia, including sliding hiatal hernia, may be more common than currently recognized in cats, particularly in patients with concurrent gastrointestinal disease. This report highlights that sliding hiatal hernia may be identified as an incidental finding during upper gastrointestinal endoscopy in cats undergoing investigation for chronic vomiting and regurgitation.

Transscleral laser cyclophotocoagulation as a surgical treatment for bilateral primary glaucoma in a Chow Chow: a case report

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Glaucoma represents a complex group of pathological changes characterized by elevated intraocular pressure (IOP), resulting in the loss of retinal ganglion cells (RGCs), degeneration of the optic nerve head (ONH) and retina, with subsequent intense pain. Glaucoma is classified as primary — typically hereditary and bilateral — or secondary, arising from conditions such as uveitis or lens dislocation. Chow Chows are highly predisposed to primary glaucoma, which is frequently refractory to clinical management. Surgical therapies are emerging as alternatives and are primarily aimed at pain control. Options in veterinary medicine range from enucleation and evisceration to chemical cycloablation and, more recently, glaucoma drainage devices (GDDs) and laser cyclophotocoagulation. Micropulse transscleral laser cyclophotocoagulation (MP-TSCP) stands out for promoting selective ablation of the ciliary body, thereby reducing aqueous humor production and IOP. A 9-year-old, 23-kg female Chow Chow was presented in April 2025 at the “Universidade Federal Rural do Rio de Janeiro” (UFRRJ) Veterinary Hospital with a 5-month history of blindness, conjunctival hyperemia, and corneal edema. On ophthalmic physical examination, the menace response and pupillary light reflexes (PLR) were absent in both eyes, and funduscopy revealed optic disc cupping and bilateral retinal vascular attenuation. Tonometry measured 76 mmHg in the right eye (OD) and 72 mmHg in the left eye (OS), markedly hypertensive relative to the physiological range (15 to 25 mmHg). An ocular ultrasound was performed to rule out intraocular neoplasia as a secondary cause; the diagnosis of bilateral primary glaucoma was confirmed by the combination of this test and the specific clinical findings. The initial

antiglaucoma treatment prescribed was multimodal, including prostaglandin analogs (latanoprost); carbonic anhydrase inhibitors (dorzolamide); NSAIDs (ketorolac trometamol); lubricants; and pregabalin, aimed at reducing aqueous humor production and increasing drainage, in addition to pain control. Despite maximum multimodal therapy and the use of other medications over the course of several months, clinical monitoring over 6 months revealed the refractory nature of the case, with IOP fluctuating at critical levels (63 OD/70 OS mmHg on April 30; 55 OD/68 OS mmHg on May 28; 30 OD/60 OS mmHg on September 17). The surgical procedure was performed eight months after the initial consultation. This specific timeframe was necessitated by the need to exhaust all pharmacological trials and by limited immediate access to the laser equipment. Furthermore, the choice of MP-TSCP over elective procedures for blind eyes, such as enucleation or evisceration, was driven by the owner’s explicit desire to preserve the globes. A common postoperative hypertensive spike (62 OD/39 OS mmHg) occurred immediately, managed by adjusting the protocol with prednisolone and brimonidine. In subsequent reevaluations in December, a progressive and consistent reduction was noted (60 OD/45 OS mmHg on the 10th and 44 OD/35 OS mmHg on the 17th). Finally, on January 6, 2026, the patient reached the target pressure of 23 OD/25 OS mmHg, maintaining stable IOP control (17 OD/16 OS mmHg) through the end of that month. It is concluded that MP-TSCP was effective in the short-term control of intraocular pressure and in maintaining comfort in a severely refractory case.

INDEX TERMS: Ophthalmic surgery, canine ophthalmology, ciliary body ablation, tonometry, MP-TSCP.

Pleuropericardial effusion and cardiac tamponade in a domestic dog: a case report

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Cardiac tamponade is an emergency condition characterized by the compression of the cardiac chambers caused by fluid accumulation, commonly in the pericardial sac. Diagnosis is made via echocardiogram, identifying anechoic fluid around the heart that causes collapse of the cardiac walls, compromising the

animal’s hemodynamics and leading to hypotension and syncope. The objective of this study is to describe the case of a domestic dog with cardiac tamponade secondary to pleural effusion. A four-year-old, mixed-breed male dog, weighing 13.3 kg, with a history of free-roaming access to the street and clinical signs of lethargy

and emesis, was admitted to the Internal Medicine Sector of the Small Animal Veterinary Hospital of the “Universidade Federal Rural de Rio de Janeiro” (UFRRJ). The complete blood count revealed severe anemia, thrombocytopenia, and the presence of microfilariae. Initially, treatment for hemoparasitosis was instituted with doxycycline and prednisolone. After 17 days of treatment without clinical improvement, the patient was referred to the Cardiology and Respiratory Diseases Sector for a general evaluation and complementary exams. Upon physical examination, the patient presented pale mucous membranes, 6% dehydration, a positive fluid wave test (piparote test), and muffled cardiorespiratory auscultation. The electrocardiogram indicated sinus arrhythmia, while the echocardiogram revealed cardiac tamponade due to a fluid collection not limited by the pericardial sac, which suggested pleural effusion. Approximately 700 mL of fluid was drained from both hemithoraces, and its analysis revealed a modified transudate. After 15 days, there was persistence of pleural effusion, though in a non-drainable amount, associated with pericardial effusion, generating mild cardiac tamponade, which resulted in 150 mL of drained fluid. Given the persistence of the clinical signs, an etiological investigation was initiated to determine the triggering factor of the presented symptoms. Serological screening performed using the

4Dx test confirmed positivity for *Dirofilaria immitis* and reactivity to *Ehrlichia canis* and *Anaplasma* spp. Subsequently, to verify structural changes or neoplasia that could justify the effusions, a thoracic radiographic examination was performed, which ruled out the presence of masses or tumors. Based on the findings and their incongruity with the symptomatology, the hypothesis of a possible inflammatory or infectious cause was raised. To understand the severe anemia and persistent thrombocytopenia, a polymerase chain reaction (PCR) for *Babesia vogeli* and serological tests (*dual path platform* – DPP, immunofluorescent antibody test – IFAT, and *enzyme-linked immunosorbent assay* – ELISA) for leishmaniasis were performed, all of which were negative. However, the diagnostic investigation was interrupted before its conclusion due to the owners’ financial limitations, which prevented the definitive identification of the etiological agent responsible for the formation of the effusions. Despite this limitation, corticosteroid therapy was temporarily associated with a reduction in pleural effusion and stabilization of the presented anemia. Therefore, this case demonstrated that massive pleural effusions may cause cardiac tamponade, leading to the hemodynamic instability observed in the patient, similarly to pericardial effusions.

INDEX TERMS: Cardiac tamponade, pericardial effusion, pleural effusion, *Dirofilaria immitis*, dog.

Partial visual recovery following retinal detachment secondary to systemic hypertension in a dog: a case report

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Systemic hypertension (SH) is an important cause of target-organ damage, affecting the kidneys, central nervous system, heart, and eyes. Ocular manifestations associated with SH may serve as sentinel findings for early disease detection. In dogs, hypertensive retinopathy is characterized by retinal vascular tortuosity, intraocular hemorrhages, subretinal edema, retinal detachment, and vision loss. Visual recovery following retinal reattachment is rarely described in the veterinary literature. The aim of this study is to report a case of partial retinal reattachment associated with control of SH and visual recovery in a female dog with retinopathy secondary to SH. A nine-year-old, 9-kg female Lhasa Apso dog was presented with a one-week history of divergent strabismus in the left eye (OS), without a history of trauma. Ophthalmic examination revealed divergent strabismus, serosanguineous discharge, conjunctival hyperemia, corneal neovascularization, corneal ulcerative keratitis, anterior synechia, scleral perforation, and absent menace response in OS. In the right eye (OD), absent menace response and reduced

pupillary light reflex were observed. Schirmer tear test results indicated decreased tear production (5 mm/min) in the right eye as well. Fundoscopic examination of OD revealed bullous retinal detachment associated with retinal hemorrhage. Intraocular pressure, measured by tonometry, was 8 mmHg in OD and 17 mmHg in OS. General physical examination identified a systolic blood pressure (SBP) of 170 mmHg, dehydration, and pale mucous membranes. The patient underwent a specialized cardiological assessment, where subsequent measurements confirmed persistent SH, with SBP values reaching 200 mmHg. Benazepril (0.5 mg/kg PO SID) was prescribed. Laboratory findings revealed non-regenerative normocytic normochromic anemia, thrombocytopenia, and positive serology for *Ehrlichia* spp. This infection was considered a possible contributing factor to the thrombocytopenia and retinal hemorrhage observed. Based on the ophthalmic findings and sustained elevation of SBP, a presumptive diagnosis of hypertensive retinopathy secondary to SH was established. Systemic treatment consisted of

doxycycline (5 mg/kg PO BID for 28 days), prednisolone (0.5 mg/kg PO SID for 7 days), and dipyrone (25 mg/kg PO TID for 5 days). Topical ophthalmic therapy included 1% prednisolone acetate TID for 10 days, 0.03% tacrolimus BID as continuous therapy in OD, moxifloxacin every 4 hours in OS, and 0.15% sodium hyaluronate in both eyes. After 40 days of treatment, partial retinal reattachment was observed in OD, accompanied by resolution of retinal hemorrhages and partial restoration of visual function, evidenced by a positive menace response and improvement of the pupillary light reflex. Thrombocytopenia improved, and blood pressure was successfully controlled. Due

to the severity of the lesions in OS, disease progression occurred, ultimately requiring enucleation at another veterinary facility. The underlying cause of SH remained undetermined because further diagnostic investigation was not pursued by the owner. This case demonstrates that early control of systemic hypertension combined with appropriate ophthalmic management may allow partial retinal reattachment and recovery of visual function, while the unfavorable outcome of the contralateral eye, which required enucleation, reinforces the importance of early diagnosis and control of SH in dogs presenting with acute retinal abnormalities.

INDEX TERMS: Ophthalmology, retinal reattachment, funduscopy, ocular disease, blood pressure.

Baseline serum cortisol in dogs with hyperadrenocorticism treated with trilostane alone or with melatonin: a preliminary comparative study

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Canine hyperadrenocorticism is a common endocrinopathy characterized by chronic hypersecretion of cortisol. Although essential for metabolic homeostasis and the stress response, excessive cortisol secretion causes polyuria, polydipsia, polyphagia, symmetrical alopecia, muscle weakness, and increased susceptibility to infections. Trilostane is the standard treatment, inhibiting cortisol synthesis; however, it requires frequent dose adjustments and hormonal monitoring, increasing treatment costs and reducing long-term adherence. In this context, baseline cortisol, measured at diagnosis before therapeutic intervention, is an inexpensive parameter with potential prognostic value. In parallel, melatonin, a hormone involved in circadian rhythm regulation, has been investigated as an adjuvant therapy in endocrine disorders. The objective of this study was to compare basal cortisol values at diagnosis between dogs with hyperadrenocorticism treated with trilostane alone or associated with melatonin, assessing baseline hormonal comparability between groups before treatment onset. Thirty-two dogs from a veterinary clinic affiliated with the "Universidade Federal Rural do Rio de Janeiro" (UFRRJ) with hyperadrenocorticism confirmed by hormonal testing (low-dose dexamethasone suppression test or ACTH stimulation test) and compatible clinical signs were evaluated. Only dogs followed for at least 180 days and initially treated with trilostane (0.5 mg/kg BID) were included ($n = 19$). In this retrospective study, treatment allocation reflected routine clinical practice and was determined by the attending veterinarian. Dogs were therefore classified into two groups according to the treatment received: trilostane alone ($n = 11$) and trilostane combined with melatonin

($n = 8$). Melatonin was administered at 1.5 mg/animal BID, initiated concomitantly with trilostane. Baseline cortisol concentrations were compared using the Mann-Whitney test, adopting a 5% significance level. The trilostane group presented a median baseline cortisol concentration of 7.10 $\mu\text{g/dL}$ (IQR: 2.75–11.40; mean: 8.71 $\mu\text{g/dL}$), whereas the trilostane plus melatonin group presented a median of 4.20 $\mu\text{g/dL}$ (IQR: 3.28–5.23; mean: 4.41 $\mu\text{g/dL}$). No statistically significant difference was observed between groups ($U = 54.5$; $p = 0.409$), with a small effect size ($r = 0.19$). Experimental studies suggest that melatonin may reduce cortisol secretion; however, clinical studies in dogs with spontaneous hyperadrenocorticism remain scarce. In the present study, no statistically significant difference in baseline cortisol was observed between groups, as expected, since melatonin administration was not based on the patients' baseline hormonal profile. Nevertheless, this finding suggests baseline comparability between groups before treatment and supports future comparative studies evaluating melatonin as an adjuvant therapy in canine hyperadrenocorticism. In conclusion, no statistically significant difference in baseline cortisol was observed in this small sample between dogs subsequently treated with trilostane alone or combined with melatonin. Furthermore, no statistically significant association was observed in this small sample between baseline cortisol and the need for trilostane dose adjustments (Spearman's $\rho = 0.07$; $p = 0.78$), regardless of treatment group, reinforcing that baseline cortisol, when considered in isolation, did not demonstrate prognostic value in this sample. The small sample size limits the generalizability of these findings, and larger studies are warranted.

INDEX TERMS: Hyperadrenocorticism, trilostane, melatonin, serum cortisol, dogs.

Exacerbation of clinical signs associated with environmental factors in a dog with tracheobronchomalacia: case report

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Chronic cough is a clinical sign frequently observed in veterinary medicine, which can be associated with respiratory, cardiovascular, or multifactorial conditions, making investigation essential. In patients with chronic respiratory diseases, exposure to environmental irritants can contribute to the exacerbation of clinical signs and hinder disease control. The present study aims to report the influence of environmental factors on the clinical evolution of a dog diagnosed with tracheobronchomalacia (TBM). A four-year-old male Pinscher dog, weighing 5.6 kg, with a body condition score of 7 on a scale of 1 to 9, and a history of chronic productive cough since its first year of life, was referred to the Veterinary Hospital of the "Universidade Federal Rural do Rio de Janeiro" (UFRRJ). According to the owner, the patient had been previously diagnosed with canine chronic bronchitis, showing partial improvement of clinical signs with the use of corticosteroids, but with recurrence of the cough after suspending the treatment. On physical examination, pulmonary auscultation revealed harsh respiratory sounds. Based on the clinical findings, a thoracic radiograph was requested for additional diagnostic evaluation; it showed narrowing of the carina and main bronchi in the left laterolateral view, suggestive of tracheobronchomalacia. Laryngotracheobronchoscopy revealed grade II tracheal collapse, grade II left bronchial collapse, and intense mucoid secretion. Based on the alterations observed in complementary exams and the clinical history, a diagnosis of tracheobronchomalacia was defined. Over the eight-month follow-up period, it was observed that coughing crises coincided with fires near the residence, exposure to strong odors, and climate changes. The

treatment was progressively adjusted, evolving from theophylline and intermittent nebulizations with beclomethasone to a multimodal protocol, to which prednisolone, formoterol combined with budesonide, salbutamol, codeine, and acetylcysteine were added, with dosage modification during periods of stability and intensification of crises. Concomitantly, a second radiographic exam showed a prominence in the right atrial topography suggestive of pulmonary hypertension, possibly secondary to chronic respiratory disease. However, echocardiography indicated a low probability of pulmonary hypertension and identified stage B1 myxomatous mitral valve disease, warranting joint cardiology follow-up. TBM is a disease characterized by the weakening of the tracheal and bronchial walls, leading to dynamic or static collapse. In general, TBM manifests as a result of concurrent conditions, such as heart disease and obesity, and after exposure to factors that worsen the condition. Environmental factors, including exposure to smoke and humidity, can act as airway irritants, favoring inflammatory processes that contribute to the exacerbation of clinical manifestations. Consequently, symptoms such as progressive cough and increased respiratory effort demonstrate that pollution and weather act as triggers that can transform a chronic condition into an acute respiratory crisis. The difficulty in stabilizing the patient during exposure to these irritants, even with the intensification of the therapeutic protocol, reiterates the negative impact of the environment on the disease. This case demonstrates that patient management must go beyond medication prescription, and should be considered an important component of clinical management.

INDEX TERMS: Tracheal collapse, respiratory diseases, chronic cough, tracheobronchomalacia, environmental factors, dog.

Six-minute walk test in dogs with myxomatous mitral valve disease: preliminary findings from ten cases

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The six-minute walk test (6MWT) is a functional tool for assessing patients with cardiorespiratory disease, providing a simple measure of exercise tolerance and physiological response to submaximal exertion. In dogs with myxomatous mitral valve disease (MMVD), it may complement clinical and echocardiographic

assessment, particularly for monitoring disease progression and therapeutic response. This preliminary study aimed to describe the use of the 6MWT in dogs with MMVD and to investigate its association with clinical and echocardiographic variables. Ten dogs with Doppler echocardiographic confirmation of MMVD



were prospectively evaluated: four were classified as stage B2 and six as compensated stage C. All dogs were clinically stable at the time of evaluation. The six stage C dogs had received stable cardiovascular therapy for at least 30 days before testing. All received pimobendan (0.25 mg/kg orally every 12 h); five received furosemide (1.0–2.0 mg/kg orally every 12 h), and one received torsemide (0.1 mg/kg orally every 24 h). Four dogs also received spironolactone (2.0 mg/kg orally every 24 h), and three received benazepril (0.25–0.5 mg/kg orally every 24 h). The 6MWT was performed in a flat, quiet, marked corridor. Total distance walked, heart rate, respiratory rate, peripheral oxygen saturation, and recovery time were assessed before the test, immediately after exercise, and 5 min later. Total walking distance ranged from 238 to 514 m, with a mean of 372 ± 91 m. Stage C dogs covered a shorter mean distance than stage B2 dogs (329 ± 72 m vs. 438 ± 64 m). Heart rate increased from 119 ± 18 to 157 ± 24 beats/min after testing ($p = 0.002$), whereas respiratory rate increased from 28 ± 6 to 47 ± 10 breaths/min ($p = 0.001$). Peripheral oxygen saturation remained above 94% in nine dogs; one dog showed a

transient reduction to 92%, followed by spontaneous recovery. Mean recovery time was 4.6 ± 1.8 min and was longer in stage C dogs. A negative correlation was identified between the left atrium-to-aorta ratio and total walking distance ($r = -0.70$; $p = 0.024$), whereas post-test respiratory rate was positively correlated with recovery time ($r = 0.73$; $p = 0.016$). No dog developed syncope or collapse, and no test was interrupted. Medication use, dosage, and duration of therapeutic stabilization were recorded because positive inotropic and diuretic drugs may affect exercise tolerance, total walking distance, and recovery time. Accordingly, findings in stage C dogs were interpreted in light of both disease severity and the potential effects of their treatment regimen. The 6MWT was safe, well tolerated, and able to demonstrate functional differences between dogs with different levels of clinical impairment. It may be a useful adjunct for functional monitoring in dogs with MMVD. However, larger studies with therapeutic stratification and longitudinal follow-up are needed to establish reference values and clarify the influence of cardiovascular medications on functional performance.

INDEX TERMS: Walk test, mitral valve disease, functional capacity, veterinary cardiology, dogs.

Ethical approval from Animal Use Ethics Committee of the Universidade de Vassouras (CEUA no. 041/2025).

Primary poorly differentiated renal carcinoma with sarcomatoid differentiation in a cat with chronic kidney disease: clinicopathological findings

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Primary renal tumors are uncommon in cats, accounting for less than 1% of all feline neoplasms. Renal carcinoma is the most frequently reported renal neoplasm, typically affecting middle-aged to older cats. Marked histological heterogeneity and poor cellular differentiation often complicate diagnosis, making immunohistochemistry (IHC) an important tool for tumor characterization. Given the scarcity of feline reports, this study describes the clinicopathological findings of a poorly differentiated primary renal carcinoma with sarcomatoid differentiation in a cat with chronic kidney disease (CKD). A 10-year-old mixed-breed female cat with CKD and seropositive for feline leukemia virus (FeLV) presented with progressive weight loss, vomiting, hyporexia, apathy, and marked pain on palpation of the right kidney. Ultrasonography revealed bilateral renomegaly, loss of corticomedullary distinction, heterogeneous echotexture, and renal pelvic dilation, with greater enlargement of the right kidney. Laboratory evaluation demonstrated progressive azotemia. Based on the clinical and imaging findings, a right nephrectomy was performed. Grossly, the kidney

was diffusely enlarged, firm, whitish, and irregular, with marked loss of normal architecture and an extensive central black cavitary area. Histologically, the renal parenchyma was extensively replaced by a densely cellular infiltrative neoplasm arranged in sheets and nests supported by a fibrovascular stroma. Neoplastic cells showed marked pleomorphism, eosinophilic cytoplasm, atypical nuclei, and multiple prominent nucleoli. Multifocal clear cell and extensive sarcomatoid differentiation, characterized by atypical spindle cells, were observed. Extensive necrosis, hemorrhage, neoplastic emboli, a high mitotic index, and residual dysplastic cortical tubules were also present. Due to poor cellular differentiation, immunohistochemistry using anti-pan-cytokeratin demonstrated multifocal cytoplasmic immunoreactivity, more evident in better-differentiated areas and weaker within sarcomatoid regions, consistent with progressive loss of epithelial differentiation. Although pan-cytokeratin confirmed the epithelial origin of the neoplasm, the absence of renal tubular markers such as PAX8, CD10, and napsin A represents a limitation. The clinical findings were

consistent with decompensated CKD. However, severe pain, renal enlargement, and marked loss of renal function were also associated with the neoplasm. Although the tumor may have contributed to these findings, concurrent CKD and other renal alterations cannot be excluded. Marked enlargement of the right kidney supported the presence of the neoplasm, while bilateral renomegaly suggested additional renal alterations. Gross abnormalities were also observed in the contralateral kidney, raising suspicion

of concurrent neoplastic involvement; however, histopathology was not performed, preventing confirmation. The absence of evidence of an extrarenal primary tumor, together with the histopathological and immunohistochemical findings, supported the diagnosis of poorly differentiated primary renal carcinoma with sarcomatoid differentiation. These findings describe a rare feline presentation and reinforce the importance of combining histopathology and IHC for accurate diagnosis.

INDEX TERMS: Veterinary nephrology, immunohistochemistry, neoplasia, carcinogenesis, feline medicine.

Neurogenic bladder in domestic cats: a six-month retrospective series of four cases

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Neurogenic bladder (NB) is a vesicosphincteric dysfunction resulting from lesions affecting the central or peripheral nervous system, leading to urinary dysfunction. Classified as a manifestation of neurologic lower urinary tract disease, it may be associated with different conditions. Nonetheless, its occurrence in domestic cats remains poorly documented in the veterinary literature. The objective of this study was to identify the main disorders related to NB in domestic cats by evaluating medical records from the Domestic Cats Medical Clinic Sector at the “Universidade Federal Rural do Rio de Janeiro” (UFRRJ) from December 2025 to June 2026. In Case 1, a 3-year-old neutered female cat positive for feline leukemia virus presented with progressive tetraparesis, urinary retention and incontinence secondary to cervicothoracic spinal cord lymphoma. After treatment with lomustine, prednisolone, prazosin and bethanechol, recovery of locomotor function and spontaneous urination was observed. In Case 2, a 10-year-old neutered male cat presented with paraplegia, tail plegia, and fecal and urinary incontinence after a fall. Radiographic findings suggested a bone fragment, focal bone proliferation or extruded mineralized disc material between the seventh lumbar (L7) and first sacral vertebra, in addition to a neoplastic process or chronic remodeling in L7. After treatment with enrofloxacin, prednisolone and prazosin, complete resolution of neurological signs and urinary and fecal dysfunction occurred. In Case 3, a 5-month-old intact male cat presented with fecal impaction, foul-smelling urine, tail paresis, absence of perineal reflex and anal tone, and fecal and urinary incontinence. Upon radiographic examination, misalignment of the fifth coccygeal vertebra was observed, compatible with a

traumatic lumbosacral lesion. Treatment with macrogol was instituted, and a bacterial culture was requested; however, no follow-up information was available. In Case 4, a 13-year-old neutered female cat had a history of fecal impaction, uncontrolled diabetes mellitus (DM), chronic kidney disease and indiscriminate use of aluminum hydroxide. Clinical examination revealed abdominal distension, abundant fecal material and bladder distension refractory to manual expression. An enema and urethral catheterization were performed, with prescriptions for potassium and macrogol supplementation and an exclusively wet diet. Due to persistent need for manual bladder expression, prazosin was prescribed for 15 days, resulting in return of spontaneous urination. Retrospective analysis identified four cases of NB: 50% of traumatic origin — predominant etiology among evaluated cases —, 25% associated with spinal cord neoplasia, and 25% with metabolic alterations due to DM. Cases 2 and 3 corroborate the literature, which describes traumatic lumbosacral lesions as important causes of bladder dysfunction due to impaired vesicosphincteric control and recognizes trauma as the main cause of spinal cord injury in cats. The lymphoma and DM cases correspond to the literature, highlighting these as possible conditions associated with NB. This study contributes to feline neurology by describing the main etiologies associated with NB in this case series, a topic largely unexplored in veterinary medicine. Analysis of these cases highlights trauma as an important cause of NB in the cats evaluated, reinforcing the importance of considering this condition in felines with spinal cord injury or metabolic disorders accompanied by urinary dysfunction.

INDEX TERMS: Lower urinary tract disease, urinary incontinence, spinal cord injury, feline medicine.

Resolution of severe ketoacidosis in a cat with suspected iatrogenic origin: case report

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Ketoacidosis is a metabolic emergency characterized by the accumulation of ketone bodies and consequent systemic acidosis. Although frequently associated with diabetes mellitus, it can also occur in situations of acute insulin resistance, severe metabolic stress, or secondary to the use of diabetogenic drugs, such as corticosteroids. In these cases, the utilization of fatty acids as an alternative energy source promotes increased production of ketone bodies — especially beta-hydroxybutyrate (BHB) — alongside significant fluid and electrolyte disturbances. Early recognition and the initiation of intensive therapy are crucial for reversing the condition, particularly when the precipitating cause is transient. This report describes the case of a seven-year-old male mixed-breed cat admitted with a history of persistent vomiting, hyporexia, and weight loss. Clinical examination revealed systolic hypotension (90 mmHg), hypothermia (37.0 °C), slightly dry and pale mucous membranes, and a depressed mental state. Diagnostic testing showed a blood glucose level of 300 mg/dL associated with severe ketonemia (BHB 7.3 mmol/L) and metabolic acidosis, confirming the diagnosis of ketoacidosis. However, the initial serum fructosamine concentration (351 µmol/L) was within reference ranges, suggesting an acute metabolic disorder rather than pre-existing chronic diabetes mellitus. Acute hepatic steatosis, changes consistent with renal inflammation, and severe

regenerative anemia — with a hematocrit drop to 13% necessitating transfusion support — were also observed. Treatment included insulin therapy with glargine insulin (0.25 IU/kg every 12 hours) and regular insulin (0.25 IU/kg every 4 hours), fluid therapy with lactated Ringer's solution, intensive potassium replacement due to severe hypokalemia (3.0 mmol/L), enteral nutritional support via nasogastric tube, hepatoprotective agents, antiemetics, antibiotic therapy, and supplemental oxygen. During the ten-day hospitalization, progressive clinical improvement, a reduction in BHB to 0.9 mmol/L, and stabilization of hemodynamic parameters were observed. The patient was discharged in good clinical condition; approximately twenty days after admission, blood glucose (75 mg/dL), fructosamine (182 µmol/L), and electrolyte levels were within reference ranges, with no need for continued insulin therapy. The absence of prior evidence of diabetes mellitus, the initial normal fructosamine concentration, and the rapid clinical remission support the hypothesis of a transient metabolic event, possibly associated with iatrogenic factors. This case demonstrates that an intensive approach focused on correcting metabolic abnormalities and providing systemic support can result in complete recovery and insulin independence in patients with ketoacidosis of potentially reversible etiology.

INDEX TERMS: Insulin therapy, beta-hydroxybutyrate, metabolic acidosis, hyperglycemia.

Renal secondary hyperparathyroidism in a dog: case report

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Renal secondary hyperparathyroidism in dogs is an uncommon disorder, present in 0.5%–3.0% of the canine population and with no direct breed predisposition; developing exclusively through mineral and electrolyte allostasis, it tends toward a silent clinical presentation, which contributes to its predominant effect on adult and geriatric patients (≥ 7 years). A complete diagnosis requires serum measurement of calcium, phosphorus, potassium, magnesium, and vitamin D, in addition to total protein and its fractions, urea, creatinine, alanine aminotransferase (ALT), aspartate aminotransferase (AST), and parathyroid hormone (PTH), ultrasonographic examination of renal and hepatic morphology, radiography for skeletal assessment, and biopsy for culture and histopathological analysis of bone tissue. Its management is merely palliative with regard to structural deformity, in some cases requiring

splinted bandages for orthopedic stability and dietary phosphorus restriction as the first-line measure for vitamin readjustment, with phosphate binders as possible adjuvants. This document aims to report a clinical case supported by the protocol and follow-up that are indispensable for altering the initial prognosis. A 13-year-old Mini-Poodle was presented to a private hospital with a home history of fatigue, appetite loss, and emesis, along with severe lameness in the left forelimb (LFL); a complete blood count was performed to rule out the possibility of anemia (showing only increased erythrocytes), biochemistry aimed at vitamin and endocrine imbalance (with reduced calcium and vitamin D and elevated phosphorus, potassium, and magnesium), and abdominal ultrasonography. A general orthopedic examination was carried out to investigate the locomotor instability, which revealed discomfort



and instability in the left thoracic limb. A radiograph of the limb was taken, confirming local fragility as well as bone and muscle loss. From this presentation, the association of hypocalcemia, hyperphosphatemia, hypovitaminosis D, and potassium and magnesium retention with the renal changes on ultrasonography and the bone resorption evidenced on radiography proved consistent with chronic kidney disease progressing to renal secondary hyperparathyroidism and fibrous osteodystrophy, with elevated PTH confirming the diagnosis. The erythrocytosis was interpreted as hemoconcentration secondary to dehydration from emesis and hyporexia. Dietary phosphorus restriction was instituted as first-line therapy, combined with fluid therapy to correct dehydration and electrolyte disturbances, analgesia, and orthopedic stabilization of the left thoracic limb with a bandage for immobilization

purposes. After these measures were instituted, the animal achieved clinical improvement related to homeostasis, evidenced by a new battery of tests and the eradication of the previous conditions. Being structural, the bone deformity carries a guarded prognosis and essentially palliative management, such that early mineral rebalancing and orthopedic support were decisive in modifying the initial prognosis. It is concluded that a complete diagnostic approach, followed by a directed therapeutic protocol and systematic follow-up, is indispensable for redirecting the prognosis of renal secondary hyperparathyroidism with bone involvement in clinical practice. The present report highlights the importance of monitoring disease while also making explicit an uncommon presentation within the small-animal clinical-orthopedic setting.

INDEX TERMS: Calcium, dog, hyperparathyroidism, orthopedic, phosphorus, PTH, renal, veterinary pathology.

Comparison between Vet BLUE findings and thoracic radiography in dogs with respiratory disease: a retrospective study

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Respiratory diseases in dogs may present overlapping clinical signs, including cough, tachypnea, dyspnea, and exercise intolerance, making the differentiation between chronic bronchial disease, pneumonia, and cardiogenic pulmonary edema challenging. Thoracic radiography remains widely used in clinical practice; however, lung ultrasound using the Vet BLUE protocol has emerged as a rapid, non-invasive, bedside diagnostic method. This study aimed to compare Vet BLUE findings with thoracic radiography in dogs with suspected respiratory disease and to evaluate their association with the final clinical diagnosis. A retrospective observational study was conducted using medical records from 64 dogs presented to a veterinary clinical service with suspected respiratory disease. Dogs were included only when physical examination, thoracic radiography, and standardized lung ultrasound using the Vet BLUE protocol had been performed during the same clinical episode, with a maximum interval of 12 hours between radiographic and ultrasonographic examinations. Records in which the interval exceeded 12 hours or in which marked clinical deterioration, potentially capable of modifying pulmonary findings, was documented between the examinations were excluded. Based on the combined clinical, radiographic, ultrasonographic, and complementary data, dogs were retrospectively classified into three main diagnostic groups: chronic bronchial disease ($n = 26$), pneumonia or bronchopneumonia ($n = 21$), and cardiogenic

pulmonary edema ($n = 17$). B-lines, lung-shred sign, subpleural consolidations, pleural irregularities, and the predominant radiographic pattern were evaluated. Agreement between methods was assessed using the kappa coefficient, while associations between ultrasonographic findings and final diagnosis were analyzed using chi-square or Fisher's exact test and logistic regression. Diffuse bilateral B-lines were more frequent in dogs with cardiogenic pulmonary edema (82.3%) than in those with pneumonia (33.3%) or chronic bronchial disease (15.4%; $p < 0.001$). Subpleural consolidations and the lung shred sign were more commonly detected in dogs with pneumonia or bronchopneumonia (71.4%; $p < 0.001$). Chronic bronchial disease was mainly associated with bronchial radiographic changes and lower ultrasonographic expression. Vet BLUE showed 85.7% sensitivity and 79.1% specificity for identifying clinically relevant peripheral pulmonary abnormalities, with moderate-to-substantial agreement with thoracic radiography ($\kappa = 0.68$). In logistic regression, the presence of subpleural consolidation increased the odds of pneumonia by 6.4 times (95% confidence interval: 2.1–19.6; $p = 0.001$). In conclusion, the Vet BLUE protocol showed good applicability as a complementary method to thoracic radiography in dogs with respiratory disease, particularly for identifying peripheral pulmonary abnormalities and supporting the initial differentiation between pneumonia and cardiogenic pulmonary edema.

INDEX TERMS: Lung ultrasound, Vet BLUE, thoracic radiography, respiratory disease, dogs.

Thoracic radiographic findings in cats with respiratory disease: a retrospective study on diagnostic patterns and limitations

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Respiratory disease is a frequent reason for feline veterinary care, and thoracic radiography remains one of the most accessible imaging methods for initial diagnostic assessment. This retrospective observational study described thoracic radiographic findings in cats with respiratory signs and evaluated associations between selected radiographic patterns and presumptive clinical diagnoses. Medical records and thoracic radiographs of cats examined from January 2020 to June 2025 at a veterinary teaching hospital were reviewed. Cases were included when clinical history, physical examination findings, a presumptive clinical diagnosis, and diagnostic-quality radiographs were available. Radiographs with limiting positioning errors, motion artifacts, or inadequate exposure were excluded. Images were reassessed in a standardized and blinded manner by two evaluators experienced in veterinary radiology. Radiographic findings were classified as bronchial, bronchointerstitial, interstitial, alveolar, vascular, pulmonary hyperinflation, pleural effusion, lymph node enlargement, cardiac silhouette change, pneumothorax, or pulmonary mass or nodule. Each cat was assigned to a single predominant presumptive diagnostic category based on the diagnosis recorded after completion of the clinical investigation; diagnoses supported by specific confirmatory tests were not available for all cases. Two hypothesis-driven comparisons were performed using Fisher's exact test: presence of a bronchial pattern versus a presumptive diagnosis of feline asthma or chronic bronchitis, and presence of a cranioventral alveolar pattern versus aspiration pneumonia or bronchopneumonia. Bonferroni correction was applied for these two comparisons, with statistical significance established at $p < 0.025$. Other radiographic patterns and diagnostic categories were analyzed descriptively. Thirty-four cats were included, with a median age of 5.1 years; 58.8%

were females, and 70.6% were domestic shorthair cats. The most common clinical signs were cough (64.7%), tachypnea (52.9%), dyspnea (47.1%), expiratory effort or wheezing (26.5%), fever (23.5%), and weight loss (20.6%). The main presumptive clinical diagnoses were feline asthma or chronic bronchitis (47.1%) and aspiration pneumonia or bronchopneumonia (26.5%); the remaining cats had other, less frequent presumptive diagnoses. The most frequent radiographic findings were bronchial pattern (67.6%), bronchointerstitial pattern (44.1%), pulmonary hyperinflation (38.2%), cranioventral alveolar pattern (23.5%), diffuse interstitial pattern (17.6%), pleural effusion (11.8%), and pulmonary mass or nodule (5.9%). Vascular abnormalities, lymph node enlargement, cardiac silhouette changes, and pneumothorax were uncommon and were evaluated descriptively. Discrete or nonspecific findings occurred in 17.6% of cases. Bronchial pattern was associated with feline asthma or chronic bronchitis ($p = 0.007$), whereas cranioventral alveolar pattern was associated with aspiration pneumonia or bronchopneumonia ($p = 0.012$); both associations remained significant after correction for multiple comparisons. Discordance occurred in five cats (14.7%). It was defined as the absence of the radiographic pattern prespecified as compatible with the assigned predominant diagnostic category or the predominance of a pattern more suggestive of another diagnostic category. In this population, bronchial and cranioventral alveolar patterns were associated with the corresponding presumptive clinical diagnostic categories. Nevertheless, overlapping, nonspecific, and discordant findings indicate that thoracic radiographs should be interpreted together with clinical history, physical examination, and complementary diagnostic tests rather than used as isolated disease-specific discriminators.

INDEX TERMS: Bronchial pattern, feline asthma, bronchopneumonia, presumptive diagnosis, respiratory disease, diagnostic imaging.

Neurological manifestations associated with *Toxoplasma gondii* infection in a dog: case report

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Toxoplasmosis is a parasitic disease of worldwide distribution caused by *Toxoplasma gondii*, an obligate intracellular protozoan transmitted primarily through

the ingestion of sporulated oocysts shed in the environment by felids, its definitive hosts. Dogs are intermediate hosts and rarely develop toxoplasmosis

as a primary disease, with clinical manifestations frequently associated with immunosuppression. Clinical signs associated with this condition vary according to the location of the infectious process. This study aims to describe the clinical, diagnostic, and therapeutic approach of a case of toxoplasmosis in a dog with signs of neurological dysfunction. A 10-year-old, castrated, male mixed-breed dog was attended at the Veterinary Hospital of the "Universidade Federal Rural do Rio de Janeiro" (UFRRJ), with a history of loss of voluntary control of the mandible and intense sialorrhea, with a clinical course of four days. The owner reported that the animal lives on a rural property and had a previous episode of escape, associated with probable garbage ingestion. On neurological examination (day 0), absence of response to menace in the left eye (LE) and reduction in the right eye (RE) were observed, reduced nasal sensitivity, bilateral paresis of masticatory musculature, and absence of the palpebral reflex in LE and reduction in RE. Laboratory examinations revealed the following findings: thrombocytopenia (18,000 cells/ μ L), hyperproteinaemia (8.6 g/dL), and hyperalbuminemia (3.5 g/dL). Skull radiography, blood culture, and serum creatine kinase (CK) dosage were performed to investigate possible fractures, luxation, systemic infections, and neuromuscular diseases, respectively, presenting normal results. Considering toxoplasmosis as one of the differential diagnoses, the modified agglutination test (MAT) was performed on day 08, which resulted positive at a titer of 1:3200, and

clindamycin therapy was instituted (12 mg/kg/PO/q12h/60 days). On days 52 and 82, follow-up serologies demonstrated progressive reduction of antibody titers, with titers of 1:50 and 1:25, respectively, the latter corresponding to the cutoff point of the test. Concurrently, the patient showed progressive clinical improvement during treatment and complete remission of neurological signs at its conclusion. The findings of the neurological examination showed involvement of the optic (II cranial nerve) and trigeminal nerves (V cranial nerve), with asymmetric distribution of deficits and greater involvement on the left side, compatible with multifocal brain lesions. The progressive reduction of antibody titer in serological evaluations, associated with favorable response to clindamycin and remission of the neurological condition, reinforces the diagnosis of encephalitis caused by *T. gondii*. However, the importance of considering differential diagnoses of encephalitis, such as neosporosis and hypothyroidism, is emphasized. Although conditions associated with immunosuppression were not identified, immunosenescence resulting from advanced age may have contributed to the reduction of the host's immune competence against the protozoan. Therefore, toxoplasmosis should be considered among the differential diagnoses of conditions presenting with neurological manifestations in dogs, since early diagnosis and treatment are determinant factors for a favorable clinical outcome.

INDEX TERMS: Protozoal encephalitis, central nervous system, paresis of the masticatory muscles.

Hybrid follicular cyst leading to endogenous foreign body reaction induced by keratin and hair shafts in a dog: a case report

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Foreign body inflammatory reactions in the dermis and hypodermis, secondary to hair follicle rupture and subsequent release of free keratin, represent a relevant yet underdiagnosed cause of deep pyoderma and panniculitis in dogs. The objective of this report is to describe a case of endogenous foreign body reaction in a canine patient, highlighting the diagnostic process and the clinical management of the condition. This report describes the case of a seven-year-old male Lhasa Apso that presented with a history of intermittent episodes of edema in the dorsal region of the left metacarpus, followed by the appearance of fistulas and spontaneous drainage of serosanguineous discharge. Corticosteroid and empirical antibiotic therapy resulted in transient clinical improvement, with recurrence following treatment withdrawal. A nodule adjacent to the lesion was subsequently identified, and the patient also exhibited lameness and hyporexia during periods of

clinical worsening. Furthermore, local licking was reported to follow lesion development, while previous empirical therapy with anxiolytics failed to achieve therapeutic success. Radiographic examination of the affected limb revealed soft tissue swelling without bone involvement. Bacterial and fungal cultures from biopsy tissue fragments were negative. Nodule cytology was suggestive of a follicular cyst, while the lesion's cytology revealed intense neutrophilic infiltrate. Excisional nodulectomy and biopsy of the lesion were performed. Histopathological examination confirmed the diagnosis of a hybrid follicular cyst (infundibular-matrix). Moreover, histopathology characterized the lesion as chronic proliferative neutrophilic dermatitis and panniculitis due to foreign bodies (keratin and hair shafts), confirming furunculosis from hair follicle rupture. Previous therapeutic failure was due to the sterile nature of the inflammation provoked by

free keratin, which mimicked deep infections such as mycobacteriosis, actinomycosis, and nocardiosis. Therapy with prednisolone (10 mg SID), cephalexin (300 mg BID/7 days), and analgesia with tramadol (50 mg BID/10 days) and dipyrone (500 mg BID/7 days) was instituted. The protocol resulted in satisfactory clinical remission, healing of the fistulas, and patient stabilization within approximately 15 days. As a long-term management strategy, a transition to cyclosporine is planned for maintenance therapy to prevent recurrences during corticosteroid tapering.

The indication for this immunomodulator is based on the need to control the residual sterile inflammatory response triggered by keratin and hair shafts that may remain in the tissue surrounding the excised area, ensuring long-term remission and preventing new episodes of furunculosis without the adverse effects of prolonged corticosteroid use. This report reinforces the importance of thorough investigation and the use of multiple diagnostic tools in chronic dermatopathies to differentiate endogenous foreign body reactions from other conditions.

INDEX TERMS: Furunculosis, keratin, foreign body reaction, follicular cyst, dermatology, canine.

Neuroanesthetic management in a geriatric cat undergoing craniotomy for excision of a suspected intracranial meningioma: a case report

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Anesthesia for intracranial procedures in geriatric patients poses a major challenge due to the need to maintain hemodynamic stability while controlling intracranial pressure (ICP) and preserving cerebral perfusion. This report describes the neuroanesthetic protocol used in a cat with an occipital mass and signs of brain herniation. A 14-year-old mixed-breed male cat weighing 7.2 kg was referred for craniotomy with a presumptive diagnosis of a right occipital meningioma. The patient had a history of recurrent seizures, glaucoma, and previous left eye enucleation and was receiving prednisolone, levetiracetam, and pregabalin. Pre-anesthetic evaluation revealed no cardiorespiratory or circulatory abnormalities, with normal pulse quality and capillary refill time. Laboratory findings showed hyperproteinemia (8.9 g/dL) and absolute lymphopenia (896/ μ L). Cardiac evaluation revealed a left anterior fascicular block with preserved systolic function on echocardiography, and the patient was classified according to the American Society of Anesthesiologists (ASA) as ASA II. Magnetic resonance imaging demonstrated a probable extra-axial lesion in the right occipital region associated with transtentorial and cerebellar herniations and vasogenic edema, suggesting increased ICP secondary to the mass lesion — the anesthetic protocol aimed to minimize ICP changes and preserve cerebral perfusion. After preoxygenation, anesthesia was induced with propofol to effect combined with intravenous midazolam (0.15 mg/kg), followed by orotracheal intubation and pressure-controlled mechanical ventilation (PCV). Dexamethasone (0.3 mg/kg) was administered to control peritumoral edema, and cefazolin (25 mg/kg) was used for antimicrobial

prophylaxis. Anesthesia was maintained with isoflurane in a rebreathing circuit combined with continuous remifentanyl infusion (5–20 μ g/kg/h). Intravenous fluid therapy with Lactated Ringer's solution was provided at 3 mL/kg/h. For multimodal analgesia and reduction of anesthetic requirements, an infiltrative scalp block with lidocaine (7 mg/kg) was performed. Mannitol (5 mL/kg; total dose 36 mL) was administered intravenously over 20 minutes at the beginning of surgery to promote osmotic diuresis and reduce ICP. Monitoring included electrocardiography, pulse oximetry (SpO₂), end-tidal carbon dioxide (EtCO₂), esophageal temperature, and systolic, mean, and diastolic arterial blood pressures. EtCO₂ remained within normal limits under the selected ventilatory strategy, avoiding cerebral vasodilation associated with hypercapnia. A single hypotensive episode occurred and was managed at the end of the procedure with 7.5% hypertonic saline (4 mL/kg) infused over 15 minutes, which contributed to hemodynamic stabilization and cerebral edema control. The patient remained hospitalized postoperatively, showed good clinical recovery on the same evening, and was discharged the following day. The excised tissue was submitted for histopathological examination. In conclusion, the multimodal neuroanesthetic approach, including mannitol, continuous short-acting opioid infusion, pressure-controlled ventilation, and locoregional anesthesia, was effective in maintaining hemodynamic stability, controlling the effects of intracranial hypertension, preserving cerebral perfusion pressure, and ensuring safe anesthetic recovery in this geriatric cat undergoing craniotomy.

INDEX TERMS: Anesthesiology, craniotomy, feline, geriatric, intracranial pressure, mannitol, meningioma, neuroanesthesia.

Unilateral arytenoid lateralization in laryngeal paralysis in a dog: a case report

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Laryngeal paralysis (LP) is defined as the partial or complete inability to abduct the arytenoid cartilages and vocal folds, with congenital or acquired development. The purpose of this study is to report the clinical and surgical management of bilateral laryngeal paralysis in a 14-year-old male mixed-breed 13 kg dog, treated at the “*Clínica Veterinária Sasaki*”. Initially, the owner reported that the animal had been coughing for five days, with progressive worsening of symptoms. During the initial clinical evaluation, anorexia, severe dyspnea, and a staggering gait were observed. During the physical examination, mild dehydration, tenderness on abdominal palpation, and pulmonary auscultation revealing wheezing and abnormal lung sounds were noted. Given this presentation, the patient was admitted, sedated with 0.02 mg/kg of acepromazine IV, and placed in an oxygen chamber for stabilization for two days. During this period, abdominal ultrasonography and chest X-rays were performed, both resulting in normal findings. Given the clinical suspicion of laryngeal paralysis, a laryngoscopy was performed under light propofol anesthesia, administered on a dose-response basis until the patient allowed the tongue to be retracted and the oral cavity to be opened, without any loss of laryngeal motility. During the examination, both arytenoid cartilages were observed to be paralyzed and adducted during inspiration, confirming the diagnostic hypothesis. Surgical correction was performed using the unilateral arytenoid cartilage lateralization technique (cricoarytenopexy). Conventional lateral access to the larynx was performed until the thyroid and arytenoid cartilages were visualized. Once visualized, the cricoarytenoid joint was released, and anchoring was performed using 2-0 polypropylene suture between the caudodorsal margin of the cricoid cartilage

and the muscular process of the arytenoid cartilage. While adjusting the lateralization suture, the anesthesiologist temporarily extubated the patient to directly visualize the abduction of the arytenoid cartilage and the degree of glottic opening. After confirming proper positioning, the animal was re-intubated to complete the procedure. Postoperatively, there was a significant improvement in respiratory function, with immediate resolution of the previously observed dyspnea. The patient recovered without respiratory complications or signs of aspiration pneumonia. Cricoidotomy is widely used to correct laryngeal paralysis due to its high rate of clinical improvement and lower incidence of postoperative complications compared to more invasive techniques, such as partial or total arytenoidectomy. However, it is a highly complex technique that requires detailed anatomical knowledge of the region. Although not observed in this case, aspiration pneumonia is a possible complication of this procedure, due to the permanent partial opening of the arytenoids, which predisposes the patient to bronchial aspiration. Therefore, the need for long-term postoperative follow-up is emphasized, aimed at the early identification and resolution of potential respiratory complications. It is concluded that unilateral arytenoid lateralization was an effective technique for correcting bilateral laryngeal paralysis, promoting immediate respiratory improvement without complications during the postoperative period. Furthermore, this case reinforces the importance of prior clinical stabilization and continuous follow-up after the intervention, crucial factors for therapeutic success and improved quality of life for patients affected by this condition.

INDEX TERMS: Cricoidotomy, laryngeal paralysis, larynx.

Clinical-surgical management of central descemetocoele in a Lhasa apso: case report

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Descemetocoele is characterized by the total loss of the corneal epithelium and stroma, exposing Descemet's membrane. It constitutes a surgical emergency because this membrane is extremely thin and susceptible to rupture, carrying a high risk of visual and globe loss. Brachycephalic breeds, such as the Lhasa Apso, are highly predisposed due to their ocular anatomy and reduced corneal sensitivity, with concomitant keratoconjunctivitis sicca (KCS) acting as an aggravating factor. Clinical management aims to inhibit secondary infections,

control pain, and manage reflex uveitis, whereas surgical intervention provides tectonic support, enabling corneal recovery and structural integrity. This study aims to report the efficacy of an integrated approach combining medical therapy and corneoconjunctival transposition to treat a perforated central descemetocoele in a female dog successfully. A 1.5-year-old female Lhasa Apso was presented to the Ophthalmology Service of the Veterinary Hospital at “Universidade Federal Rural do Rio de Janeiro” (UFRRJ) with right-eye (OD) affection. A stromal corneal

ulcer was diagnosed, and clinical treatment resulted in initial improvement, although the lesion persisted due to its depth. Biomicroscopic evaluation revealed distichiasis in the upper and lower eyelids of the OD, medial entropion, and bilateral caruncle trichiasis. The owner reported intense pruritus, culminating in an extensive stromal corneal ulcer affecting approximately 75% of the stroma, with a positive fluorescein test, a negative Seidel test, and an intraocular pressure (IOP) of 8 mmHg in the OD. Treatment was instituted with 0.5% moxifloxacin hydrochloride, 1% atropine, and 0.2% sodium hyaluronate eye drops, alongside oral doxycycline and dipyrone, and a continuous Elizabethan collar. Restraint and handling were performed carefully to prevent increments in IOP. To enhance corneal restructuring, autologous serum was added to the protocol, resulting in IOP normalization and the absence of blepharospasm and conjunctival hyperemia by the subsequent consultation, suggesting reduced reflex uveitis. Approximately 40 days after the initial presentation, despite healing around the lesion, progression to a central descemetocoele with a discrete corneal perforation was confirmed by a positive Seidel test. Surgery was performed under general anesthesia using

an operating microscope. A superficial keratectomy was executed using a crescent knife around the descemetocoele, followed by limbal peritomy and bulbar conjunctival detachment with Westcott scissors. A corneoconjunctival transposition was performed, transposing the delaminated cornea along with the bulbar conjunctiva to the lesion area, and suture was executed in a simple interrupted pattern using 8-0 polyglycolic acid. Aqueous humor leakage and subsequent hypotonia occurred, which were managed with atropine eye drops. Finally, a third eyelid flap was performed. Postoperatively, the clinical eye drops were maintained, with 0.03% tacrolimus to stabilize the tear film altered by KCS, and the Elizabethan collar was kept to prevent self-trauma. After 14 days, the graft was well-adhered, and a negative fluorescein test indicated complete re-epithelialization. The patient progressed without recurrence, with preserved visual acuity and only a discrete cicatricial leucoma. This case demonstrates the scientific relevance of corneoconjunctival transposition combined with immunomodulatory therapy to restore tectonic integrity and preserve vision in complex cases of perforated central descemetocoele secondary to KCS.

INDEX TERMS: Corneal ulcer, keratoconjunctivitis sicca, dogs, corneoconjunctival transposition.

Aortic thromboembolism secondary to cardiomyopathy in a cat: a case report

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Feline aortic thromboembolism (FATE) is a syndrome characterized by acute onset and rapid progression, frequently associated with underlying cardiomyopathies. Virchow's triad (endothelial injury, blood stasis, and hypercoagulability) is the primary mechanism driving intracardiac thrombus formation secondary to feline cardiomyopathies. The thrombus may embolize to various vessels, compromising systemic or local circulation. The most common site of embolization is the aortic trifurcation, resulting in ischemia and loss of motor function in the pelvic limbs. This report describes the clinical case of a 9-year-old, spayed female, positive for feline leukemia virus (FeLV) cat weighing 3.75 kg managed successfully with conservative treatment for FATE secondary to cardiomyopathy. The patient initially presented with loss of proprioception and hypothermia in the right hind limb, alongside decreased sensitivity and deep pain perception in the distal extremity. Color Doppler ultrasonography identified an oval, hyperechoic structure with regular contours at the aortic trifurcation, causing partial impairment of local blood flow, consistent with a chronic aortic thrombus. Within one hour, clinical signs progressed to include the entire right hind limb, followed shortly by a loss of movement and sensation in the left hind limb. Upon physical examination, the patient did not manifest signs of pain but exhibited hypothermia and systemic hypertension. A conservative treatment protocol

was initiated with heparin (150 IU/kg, SQ, q8h) alongside clopidogrel (75 mg, q24h), cyproheptadine (4 mg, q12h) to promote collateral circulation, and methadone (0.2 mg/kg, q8h) for analgesia. Mild hypokalemia identified via blood gas analysis was managed with intravenous fluid supplementation. Echocardiography revealed a hypertrophic cardiomyopathy phenotype, prompting the prescription of pimobendan (1.25 mg) and furosemide (2 mg/kg). The patient was hospitalized for six days, during which oral rivaroxaban (0.34 mg/kg) was added to the protocol. Daily ultrasonographic monitoring demonstrated progressive thrombus dissolution and migration. Physical therapy was performed using warm compresses and motor stimulation. The patient was discharged with completely restored motor function and sensitivity in both limbs under continued cardiological follow-up. Peripheral arterial flow was restored within 72 hours on Doppler ultrasonography, and a favorable motor response was observed within four days. Despite rapid therapeutic intervention, reperfusion injuries — such as hemoglobinuria and altered hepatic biomarkers — occurred but were managed. While FATE carries a guarded prognosis often resulting in death or euthanasia, this report highlights how early detection and prompt implementation of a multimodal therapeutic protocol can yield a successful clinical outcome.

INDEX TERMS: Anticoagulants, aortic thrombosis, cat diseases, feline hypertrophic cardiomyopathy, ischemia.

Domestic cat with dwarfism associated with hydrocephalus: a case report

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Hyposomatotropism, also known as pituitary dwarfism, is characterized by deficient growth hormone (GH) production. It is an exceedingly rare condition in cats, with only six cases reported in the veterinary literature to date. The condition may be primary (congenital) or secondary (acquired). Acquired causes include traumatic, neoplastic, vascular, inflammatory, infectious, and hormonal disorders. Affected patients typically exhibit proportionate dwarfism with delayed closure of the growth plates, delayed tooth eruption, and dermatological abnormalities, including an absence of primary guard hairs and retention of secondary hairs. The development of hypertrophic cardiomyopathy and chronic kidney disease following the diagnosis of hyposomatotropism has previously been reported in cats. However, to the authors' knowledge, this is the first report in the veterinary literature describing hyposomatotropism associated with hydrocephalus. Therefore, this report describes a case of hyposomatotropism associated with hydrocephalus in a domestic cat. A 2-month-old female Exotic Shorthair cat weighing 430 g was presented to a veterinary clinic specialized in feline medicine with a primary complaint of dysphagia and dyspnea following feeding. On physical examination, the kitten was markedly smaller than its littermates and exhibited lethargy, cranial enlargement, a cranial protuberance associated with alopecia, and exophthalmos of the right eye. Radiographic examination revealed marked cranial enlargement, with the cranial cavity filled by material of radiographic opacity consistent with fluid. Transcranial ultrasonography demonstrated severe dilation of the lateral ventricles containing anechoic fluid, along with herniation of the cerebral parenchyma

through the fontanelle. Hematological evaluation revealed leukopenia, neutropenia, lymphopenia, and eosinopenia, while serum biochemical analysis demonstrated elevated urea concentrations and hypercholesterolemia. Based on the clinical and diagnostic findings, hydrocephalus was diagnosed and was considered responsible for the dysphagia and choking episodes due to brainstem compression during feeding. However, the patient's reduced body size raised suspicion of hyposomatotropism. Therefore, serum concentrations of insulin-like growth factor 1 (IGF-1; somatomedin C) and thyroid-stimulating hormone (TSH) were evaluated. The results revealed a suppressed IGF-1 concentration (< 15 ng/mL) and normal TSH values. Consequently, the cat was diagnosed with hyposomatotropism associated with hydrocephalus, with the endocrine disorder presumed to be secondary in origin. Following diagnosis, the patient was hospitalized for treatment and stabilization. Supportive care included assisted feeding, administration of ondansetron and maropitant for nausea control, prednisolone, mannitol to reduce intracranial pressure, and lubricating ophthalmic drops. The patient was subsequently discharged but was readmitted after developing ataxia, lethargy, loss of proprioception in a thoracic limb, nystagmus, and progressive cranial enlargement. Despite treatment, the clinical condition deteriorated, culminating in cardiopulmonary arrest and death during hospitalization. This report expands the current knowledge of feline hyposomatotropism by describing its first documented association with hydrocephalus, emphasizing the need for comprehensive endocrine and neurological evaluation in affected patients.

INDEX TERMS: Hydrocephalus, dwarfism, hypossomatotropism, endocrine disorder.

Dermatological manifestations of hypothyroidism in a Border Collie: a case report

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Hypothyroidism is the most common endocrine disorder of the thyroid gland in dogs, characterized by reduced thyroid hormone production and nonspecific clinical signs, with frequent dermatological involvement. This report describes a case of primary hypothyroidism in an 8-year-old spayed female Border Collie presented with recurrent pruritus affecting the auricular, interdigital, and abdominal regions, self-inflicted paw trauma, recurrent otitis, exercise intolerance, and weight gain, with clinical worsening after bathing and exposure to household cleaning products. Physical examination revealed alopecia, hair thinning, abdominal and interdigital erythema, and bilateral cerumen accumulation within the external

ear canals. Hematological and biochemical evaluation demonstrated hyperproteinemia, increased alkaline phosphatase activity, and hypercholesterolemia. Endocrine testing showed decreased free thyroxine (0.49 ng/dL) and increased thyroid-stimulating hormone (2.84 ng/mL), consistent with primary hypothyroidism. Cervical ultrasonography identified enlargement and irregularity of the right thyroid lobe, an atypical finding that may be associated with inflammatory changes, including chronic lymphocytic thyroiditis. Treatment consisted of levothyroxine (838 µg/capsule, orally, every 12 h), spirulina supplementation (400 mg/capsule, orally, every 24 h for 90 days) to support skin health through its antioxidant



and anti-inflammatory properties, and multimodal topical therapy targeting secondary dermatological and otic disease, including antimicrobial and anti-inflammatory skin and ear preparations, as well as daily chlorhexidine-based paw hygiene, alongside environmental modification. At follow-up, there was marked clinical improvement, with resolution of pruritus, reduction of self-inflicted trauma, healing of cutaneous lesions, improved coat quality, and better physical condition with weight reduction. Post-pill total

thyroxine (T4), measured 4–6 hours after levothyroxine administration, was 7.92 µg/dL (above the expected therapeutic range), indicating over-supplementation and prompting dose reduction to 520 µg every 12 h. This case highlights the importance of integrating clinical, laboratory, hormonal, and imaging findings for the diagnosis of canine hypothyroidism. It demonstrates that appropriate hormone replacement associated with multimodal dermatological management can provide excellent clinical outcomes and improve quality of life.

INDEX TERMS: Canine dermatology, endocrine disease, thyroid ultrasonography, otitis externa, levothyroxine.

Canine dirofilariasis in a brachycephalic dog from Rio de Janeiro: diagnostic and therapeutic challenges

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Canine dirofilariasis is an endemic parasitic disease in Rio de Janeiro caused by the nematode *Dirofilaria immitis*, whose adult worms localize in the cardiopulmonary system following larval migration through the venous circulation after transmission. This report describes the case of a 7-year-old, 10.8-kg female French Bulldog presenting with dyspnea, lethargy, and anorexia in the postoperative period of elective ovariohysterectomy. Given progressive worsening over the following five days, marked by hyperventilation and prostration, veterinary reassessment was requested along with a complete blood count (CBC) and hemoparasite screening. No abnormalities suggestive of infection or inflammation were found, nor were microfilariae detected on direct blood smear examination. The patient was hospitalized for closer postoperative monitoring, clinical stabilization, and diagnostic imaging. Abdominal ultrasonography revealed hepatomegaly, splenomegaly, and changes consistent with gastritis and enteritis, nonspecific findings that may reflect systemic processes or gastrointestinal alterations associated with brachycephalic syndrome. Thoracic radiography identified soft palate thickening, also consistent with brachycephaly, without tracheal lumen alteration; hypoinflated lung fields with a diffuse, mild-to-moderate bronchointerstitial pattern, consistent with low-grade inflammation or infection, without congestion; and cardiac silhouette bulging at the aortic arch, interpreted as pulmonary trunk enlargement suggestive of vascular remodeling and pulmonary hypertension secondary to dirofilariasis, although also consistent with chronic respiratory effort in brachycephalic dogs, reinforcing diagnostic overlap. Preoperative cardiac evaluation showed sinus arrhythmia with wandering pacemaker on electrocardiography, considered physiological, and

echocardiography with preserved systolic and diastolic function, without right chamber dilation. Confirmation occurred 48 hours after hospitalization via SNAP 4Dx® immunochromatographic testing, which detects circulating antigens from adult female *D. immitis*. After discharge, a prolonged treatment protocol was initiated: doxycycline 100 mg PO BID for 28 days, targeting the endosymbiotic bacterium *Wolbachia* spp.; ivermectin 0.06 mg (Endogard®10) PO SID every 30 days, continuous use; and strict activity restriction to reduce thromboembolic risk. As adjuvant therapy, to minimize the inflammatory response: prednisolone 5 mg PO, 2 tablets SID for 5 days, followed by tapering (1 tablet SID for 5 days; ½ tablet SID for 5 days); loratadine 10 mg PO SID for 10 days. For pulmonary support: fluticasone 50 µg inhaled, 2 puffs TID for 7 days; and acetylcysteine 40 mg/mL, 3 mL BID. Over four weeks of home follow-up, the patient showed favorable clinical progression, weight recovery, and absence of respiratory signs. There was no return for continued therapy or repeat antigen testing. To clarify this report, the owner was contacted approximately one year after the episode and stated she had not returned because she believed the animal was cured. This case illustrates the difficulty of adherence to slow-kill protocols using oral macrocyclic lactones, which show lower compliance than injectable formulations. It reinforces the inclusion of dirofilariasis among differential diagnoses in brachycephalic dogs from endemic areas. Reference-range CBC and absent microfilariae on direct examination do not rule out infection, particularly given the low sensitivity of this screening method, underscoring the need for a combined diagnostic approach, including antigen testing. Although also attributable to brachycephalic syndrome, imaging findings contributed to clinical reasoning and improved disease staging.

INDEX TERMS: Antigen testing, brachycephalic syndrome, canine dirofilariasis, differential diagnosis, slow-kill.

Anthropometric and laboratory characterization of overweight and obese cats

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Obesity is one of the most prevalent endocrine-metabolic disorders in companion animals, with increasing prevalence worldwide. It is a multifactorial condition characterized by excessive body fat accumulation, predisposing animals to the development of several comorbidities. This study aimed to evaluate body and laboratory parameters in obese cats and describe their clinical and metabolic profile. A prospective study was conducted involving 14 cats selected according to predefined obesity criteria, including body weight at least 20% above the ideal body weight and a body condition score (BCS) $\geq 6/9$. The animals underwent standardized physical and anthropometric assessments, including body weight (BW), BCS (9-point scale), body fat percentage (BF%), thoracic circumference (TC), and abdominal circumference (AC). Venous blood samples were collected for routine and specific laboratory analyses, including alanine aminotransferase (ALT), aspartate aminotransferase (AST), urea, creatinine, glucose, cholesterol, and triglycerides. The data were organized into spreadsheets for descriptive analysis. Normality was assessed using the Shapiro-Wilk test, and correlations were calculated using Spearman's rank correlation coefficient. No association was observed between obesity, age, or sex among the evaluated animals. Mean body weight was 5.6 ± 0.96 kg (range: 4.4–7.8 kg), and the mean BCS was 7/9 (range: 6/9–9/9). Body fat percentage, estimated using thoracic circumference and the distance between the

calcaneus and the patella, averaged $36.71 \pm 6.08\%$ (range: 31–49%), classifying most animals as overweight (28–35%) or obese ($> 35\%$). Mean abdominal circumference was 47.64 ± 4.7 cm (range: 41–58 cm). Strong positive correlations were observed among body weight, thoracic circumference, and body fat percentage (Spearman's $r_s \geq 0.84$; $p < 0.001$), indicating a proportional increase in these parameters. In contrast, abdominal circumference showed only a weak, non-significant correlation with body fat percentage ($r_s = 0.37$; $p = 0.19$). These findings suggest that no single assessment method was sufficient to classify overweight status, probably due to individual differences in body size and fat distribution. Laboratory abnormalities were nonspecific. The main findings included neutrophilia, hyperproteinemia, platelet aggregates, increased serum alanine aminotransferase (ALT) and aspartate aminotransferase (AST) activities, and elevated renal markers. These alterations are unlikely to be directly associated with obesity, since all evaluated animals presented concurrent diseases. Future studies involving clinically healthy obese cats are needed to establish appropriate comparisons and more accurately determine the impact of obesity on laboratory parameters. Overall, these preliminary findings indicate the absence of a specific laboratory profile in overweight cats with associated comorbidities, reinforcing the importance of combining multiple assessment methods.

INDEX TERMS: Feline obesity, domestic cats, body condition score (BCS), body fat percentage (BF%), cats' abdominal circumference.

Metastatic osteosarcoma in a young dog: case report

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Osteosarcoma is a malignant mesenchymal tumor and the most common primary bone neoplasm in dogs. It is more prevalent in large-breed, middle-aged to older dogs. The main clinical signs include lameness, pain, and localized swelling, which may initially respond to nonsteroidal anti-inflammatory drugs (NSAIDs) and/or analgesics, often leading to suspicion of non-neoplastic conditions such as orthopedic or soft tissue disorders. Radiography of the affected limb is essential for identifying osteolytic lesions suggestive of osteosarcoma and for staging the patient, as the lungs are the primary site of metastasis. Fine-needle aspiration cytology (FNAC) is recommended as a minimally invasive and less traumatic alternative to incisional biopsy for obtaining diagnostic cellular samples. Reported sensitivity ranges from 70%

to 97%, while specificity ranges from 80% to 100%, making it an effective diagnostic screening tool. This report describes the case of a 1-year-and-8-month-old, 28.1-kg male American Bully presenting with swelling and lameness of the left pelvic limb, with no history of trauma. Radiographic examination revealed early osteolysis in the proximal left tibia, left stifle joint effusion, and surrounding soft tissue swelling. Treatment with meloxicam (0.1 mg/kg) was prescribed for five days. Thirty days later, the dog returned with persistent clinical signs, prompting repeat radiography and FNAC of the affected bone. Fine-needle aspiration was performed using an 18-gauge needle inserted into the proximal tibia. Cytological examination revealed spindle- to round mesenchymal cells with mild pleomorphism, eccentric nuclei, finely stippled chromatin,

prominent nucleoli, scant mildly basophilic cytoplasm, eosinophilic extracellular matrix, and a small number of osteoclasts. These findings were consistent with a malignant mesenchymal bone neoplasm (osteosarcoma). Follow-up radiographs demonstrated progression of the osteolytic lesion. The patient was referred for oncologic evaluation and was prescribed firocoxib (5 mg/kg), tramadol hydrochloride (2 mg/kg), and dipyrone (25 mg/kg). Thoracic radiographs obtained for staging revealed multiple pulmonary nodules consistent with probable metastatic disease. Given the advanced stage of the disease, palliative chemotherapy was recommended because surgery was unlikely to provide clinical benefit. However, the owner declined chemotherapy and elected to continue

only analgesic treatment. Twenty-five days later, the dog returned with severe respiratory distress, and euthanasia was elected. In this case, the patient's young age and the pelvic limb location of the lesion are less commonly reported features, making it an unusual presentation. Although more definitive diagnostic methods are available, cytology plays an important role in the initial identification of malignant mesenchymal neoplasms. While radiographic evidence of osteolytic lesions strongly supports a diagnosis of osteosarcoma, fine-needle aspiration cytology is valuable for distinguishing neoplastic from inflammatory processes, thereby supporting timely diagnostic and therapeutic decision-making.

INDEX TERMS: Neoplasia, fine-needle aspiration, euthanasia, pulmonary metastasis, bone lysis.

Signaling exposure to *Toxoplasma gondii* in dogs: a perspective based on artificial neural network data analysis in a highly endemic region of Brazil

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Clinical suspicion of toxoplasmosis in dogs remains challenging because the clinical signs are generally nonspecific and frequently overlap with those of other endemic diseases. This diagnostic gap may lead clinicians to overlook *Toxoplasma gondii* exposure during routine clinical practice, particularly in highly endemic areas. Domestic dogs have been recognized as potential sentinels of environmental exposure to *T. gondii*, contributing to the integration of clinical suspicion with One Health surveillance. This study evaluated anti-*T. gondii* seropositivity in dogs examined at the Veterinary Teaching Hospital of the "Universidade Estadual do Norte Fluminense Darcy Ribeiro" (UENF), Campos dos Goytacazes, northern Rio de Janeiro State, Brazil, and used artificial neural network (ANN) analysis to identify clinical and laboratory patterns associated with seropositivity. A total of 537 serum samples were collected from dogs examined from January to December 2024, regardless of their presenting complaint. Anti-*T. gondii* antibodies were detected using the modified agglutination test (MAT), with antibody titers $\geq 1:25$ considered positive. Epidemiological, clinical, hematological, and biochemical data were obtained from medical records and analyzed using conventional statistical methods and ANN. Missing data were handled by multiple imputation, variables were standardized using Z-score transformation, and predictive models were developed using training and testing datasets. Model performance was evaluated using the receiver operating characteristic (ROC) curve, the area under the curve (AUC), and the cumulative gains chart (CGC).

Normalized importance (%) was used to determine the contribution of each independent variable to the predictive model. The overall seroprevalence was 27.0% (145/537), with antibody titers ranging from 1:25 to $\geq 1:3200$. Compared with seronegative dogs, seropositive animals had higher body weight and a characteristic clinicopathological profile, including lower erythrocyte indices, lower platelet counts, lower albumin concentrations, and higher total protein and globulin levels. These alterations were more pronounced in dogs with higher antibody titers. The ANN model showed excellent predictive performance on this dataset (AUC = 1.00). The variables with the highest predictive importance included body condition indicators, interaction with other animals, rectal temperature, and hematological and biochemical parameters, particularly platelet count, renal function markers, liver enzymes, serum proteins, and erythrogram variables. Taken together, these findings indicate that routinely available clinical and laboratory data may assist veterinarians in identifying dogs with a higher likelihood of previous *T. gondii* exposure, thereby supporting decisions on when to include toxoplasmosis in the differential diagnosis and request serological testing, especially in endemic areas. Since seropositivity reflects exposure to the parasite rather than active disease, the results should be interpreted as an aid to clinical suspicion. These findings support the use of routine clinical and laboratory data to improve the recognition of *T. gondii* exposure in dogs and reinforce their potential role as sentinels in One Health surveillance.

INDEX TERMS: *Toxoplasma gondii*, dogs, seroprevalence, sentinels, artificial neural networks, clinicopathology, One Health.



Adjuvant electrochemotherapy following digital amputation for canine digital melanoma: a case report

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A 13-year-old, 28-kg, neutered male mixed-breed dog was presented with a four-month history of a progressively enlarging, alopecic, pedunculated, black-pigmented subcutaneous mass measuring 2.5 cm × 2.0 cm × 1.8 cm located on the first digit of the left pelvic limb. Fine-needle non-aspiration cytology was suggestive of melanoma, a malignant melanocytic neoplasm. Clinical staging included thoracic radiography, abdominal ultrasonography, complete blood count, and serum biochemistry, with no evidence of distant metastatic disease on preoperative evaluation or other clinically relevant abnormalities. Given the presumptive diagnosis of melanoma and the absence of evidence of metastatic disease, surgical excision combined with adjuvant electrochemotherapy (ECT) was selected as the primary treatment modality to optimize local tumor control. Following preoperative anesthetic assessment, the patient was deemed suitable for anesthesia and surgery. The patient underwent excision of the ipsilateral popliteal lymph node, considered the regional draining lymph node, followed by therapeutic amputation of the affected digit at the level of the metatarsophalangeal joint. The lymph node, identified using Patent Blue V dye, was excised for regional metastatic staging and submitted for histopathological examination. Digital amputation was performed according to standard oncologic surgical principles, including circumferential soft tissue dissection, vascular ligation, meticulous hemostasis, en bloc excision of the affected digit, and primary wound closure. Following digital amputation, a single intraoperative session of adjuvant ECT was applied to the surgical bed, given the locally aggressive nature of canine digital melanoma and the inability to exclude residual microscopic disease intraoperatively.

At the time of surgery, histopathological assessment of the surgical margins was not yet available. Bleomycin (150,000 IU/5 mL formulation) was administered intravenously at a dose of 10,000 IU, followed by electroporation eight minutes later. Electric pulses were delivered using an EPORE® electroporator equipped with 6-mm needle electrodes. A protocol consisting of eight pulses of 100-microsecond duration at 600 V and 5 kHz was applied. The electric pulses induced transient cell membrane permeabilization, enhancing intracellular bleomycin uptake and increasing its cytotoxic effect on potential residual neoplastic cells. The procedure was well tolerated, and no immediate perioperative complications were observed. Histopathological examination subsequently confirmed a well-differentiated pigmented spindle-cell melanoma with complete surgical excision and histologically tumor-free margins. The mitotic count was seven mitoses per 10 high-power fields (40×). Histopathological evaluation of the ipsilateral popliteal lymph node revealed no evidence of metastatic disease. Adjuvant ECT was feasible and well tolerated after digital amputation, and no local recurrence was observed during the 30-day follow-up. Long-term oncologic follow-up, including periodic physical examination, regional lymph node evaluation, thoracic imaging, and assessment for distant metastasis, is ongoing to determine long-term local tumor control and disease-free interval. Digital melanoma in dogs is considered a locally aggressive neoplasm with metastatic potential, and complete surgical excision remains the cornerstone of treatment. This case demonstrates the feasibility of combining digital amputation with adjuvant ECT in the management of canine digital melanoma.

INDEX TERMS: Canine oncology, digital melanoma, electrochemotherapy, bleomycin, amputation, local tumor control.

Feline sporotrichosis: clinical evolution and therapeutic management of a severe case report

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Sporotrichosis is a subcutaneous mycosis caused by fungi of the genus *Sporothrix* and currently represents an important zoonotic challenge in Brasil, especially due to the emergence and dissemination of

Sporothrix brasiliensis. Domestic cats play a central role in the epidemiology of the disease because of the high fungal burden present in their lesions, facilitating transmission to other animals and humans through

scratches, bites, and contact with the exudate of cutaneous lesions. In addition to its clinical impact on feline patients, sporotrichosis is a relevant public health concern, particularly in endemic regions such as the state of Rio de Janeiro. This study aimed to describe the clinical presentation, diagnosis, therapeutic management, and outcome of a severe case of feline sporotrichosis. A mixed-breed, intact male domestic cat, approximately five years old, was rescued in May 2025 presenting severe weight loss, poor body condition, generalized weakness, hypothermia, pale mucous membranes, lymphadenomegaly, and multiple disseminated cutaneous lesions of variable size, including an extensive coalescing cervical ulcer and numerous smaller ulcerative lesions distributed over the head, neck, and thoracic region. Based on the clinical and epidemiological findings and the cytological identification of fungal structures compatible with *Sporothrix* spp., feline sporotrichosis was established as the primary diagnosis. Cryptococcosis, leishmaniasis, histoplasmosis, and dermatophytosis were considered as differential diagnoses. Complete blood count, serum biochemistry, and abdominal ultrasonography were performed for diagnostic support and therapeutic monitoring. Initial treatment consisted of itraconazole associated with potassium iodide, cefadroxil for seven days, analgesia, fluid therapy, daily wound care, nutritional support, and home isolation. After approximately three months, worsening of facial lesions and clinical deterioration were observed, indicating

an unsatisfactory response to the initial protocol. Therapeutic reassessment was therefore required, including adjustment of the potassium iodide dosage and administration of cefovecin sodium. Following these modifications, progressive clinical improvement was observed, characterized by regression of ulcerative lesions, reduction of inflammatory processes, recovery of body condition, and marked weight gain. Body weight increased from 3.95 kg at admission to 7.75 kg at the end of follow-up. In January 2026, a residual cervical lesion associated with secondary bacterial infection was identified and successfully treated with amoxicillin-clavulanate, resulting in complete healing. Antifungal therapy was maintained for sixty days after complete clinical remission. After approximately one year of continuous treatment, the patient achieved clinical cure and was discharged in April 2026. Follow-up examinations revealed negative feline immunodeficiency virus (FIV) and *feline leukemia virus (FeLV)* test results, absence of active lesions, and only residual alopecic scar tissue. This case highlights the importance of early diagnosis, individualized therapeutic protocols, long-term treatment adherence, and continuous clinical monitoring in severe cases of feline sporotrichosis. Furthermore, it reinforces the relevance of the One Health approach for the effective control of this important zoonosis. It demonstrates that favorable outcomes can be achieved even in advanced disseminated cases when appropriate therapeutic adjustments and consistent follow-up are implemented.

INDEX TERMS: Sporotrichosis, *Sporothrix* spp., zoonosis, itraconazole, One Health.

Clinical, imaging, and therapeutic profile of feline pyothorax: a retrospective study

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Pyothorax is a severe pleural disorder in cats, commonly associated with respiratory compromise, septic inflammation, and the need for prompt diagnostic and therapeutic intervention. This retrospective study aimed to describe the clinical presentation, thoracic imaging findings, therapeutic management, and short-term outcome of cats diagnosed with pyothorax admitted to a small animal veterinary service. Medical records and thoracic imaging examinations performed from January 2019 to December 2025 were reviewed. Cats were included when pyothorax was diagnosed based on cytological evidence of septic suppurative pleural inflammation and/or a positive bacterial culture of pleural fluid. Eighteen cats met the inclusion criteria. Data were summarized descriptively as absolute and relative frequencies; age was reported as median. An exploratory secondary analysis evaluated the association between time from admission to definitive pleural drainage (≤ 6 hours or > 6 hours) and survival to

discharge using Fisher's exact test, with a significance level of 5%. Median age was 3.8 years; 11/18 cats (61.1%) were males and 13/18 (72.2%) had outdoor access. The most frequent clinical findings were dyspnea (16/18, 88.9%), hyporexia (15/18, 83.3%), orthopneic posture (12/18, 66.7%), fever (9/18, 50.0%), and reduced peripheral perfusion (7/18, 38.9%). Thoracic ultrasonography identified pleural effusion in all cats, with echogenic particulate content in 15/18 (83.3%) and fibrin strands or septations in 8/18 (44.4%). Thoracic radiographs most commonly revealed bilateral pleural effusion (13/18, 72.2%) and pulmonary lobe retraction (15/18, 83.3%). Thoracocentesis was performed in all cats for diagnostic sampling and therapeutic evacuation of pleural fluid. Thoracostomy tube placement was indicated when repeated pleural drainage was anticipated, particularly in cats with moderate-to-large volume effusion, marked respiratory compromise, bilateral pleural involvement,



persistent or recurrent fluid accumulation after initial thoracocentesis, or purulent and highly cellular pleural fluid consistent with septic exudation. The decision to place a thoracostomy tube was based on the severity of respiratory signs, imaging findings, volume and characteristics of pleural fluid, and the attending clinician's assessment of the need for ongoing drainage and pleural lavage. Broad-spectrum antimicrobial therapy, oxygen supplementation, analgesia, and intensive monitoring were administered according to clinical assessment and attending clinician judgment. Survival to discharge was 13/18 (72.2%). Cats that underwent definitive pleural drainage within six hours of admission had a higher observed survival proportion

(9/10, 90.0%) than those with delayed drainage (4/8, 50.0%); however, this exploratory association was not statistically significant (Fisher's exact test, $p = 0.118$; odds ratio = 9.0; 95% confidence interval, 0.55–491.08). This retrospective cohort describes the clinical, imaging, and therapeutic characteristics of cats with pyothorax managed at a veterinary referral service. Thoracic imaging was useful for documenting pleural involvement, assisting procedural planning, and monitoring pulmonary re-expansion. Early definitive pleural drainage was associated with a higher observed survival proportion in this small sample, but this finding should be interpreted cautiously and warrants investigation in larger prospective studies.

INDEX TERMS: Septic pleural disease, thoracostomy tube, thoracic ultrasonography, thoracic radiography, oxygen supplementation, antimicrobial treatment, critical care.

ANIMAIS SILVESTRES

Papillomavirus in the perianal region of *Cavia porcellus*: case report

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Guinea pigs (*Cavia porcellus*) are small domestic rodents native to the Andean region and are increasingly common in the clinical routine of exotic pet medicine. Papillomavirus is an epitheliotropic DNA virus capable of inducing benign nodular lesions and is primarily transmitted through direct contact with infected animals, as well as through fomites and mechanical vectors. This report aims to describe a case of squamous papilloma in a 2.5-year-old male guinea pig (*C. porcellus*), weighing 1 kg, housed in a domestic environment under appropriate management and hygienic conditions, which presented with a verrucous nodule at the anal sac opening associated with fecal retention. Cytological examination of the lesion was initially performed; however, the results were inconclusive. Subsequently, the lesion was surgically excised, and the collected tissue was divided into two samples. The first sample was submitted for polymerase chain reaction (PCR) for papillomavirus detection and yielded a negative result. The second sample was submitted for histopathological evaluation, which revealed a squamous papilloma characterized by exophytic proliferation of hyperplastic squamous epithelium, koilocytosis, and intranuclear inclusion bodies, findings consistent with papillomavirus infection. Postoperatively, wound cleansing with an aqueous polyhexamethylene biguanide solution was instituted, along with meloxicam (0.5 mg/kg, PO, SID, for 4 days), dipyrone (25 mg/kg, PO, BID, for 7

days), tramadol hydrochloride (8 mg/kg, PO, BID, for 7 days), enrofloxacin (10 mg/kg, PO, BID, for 5 days), metronidazole (40 mg/kg, PO, BID, for 5 days), probiotic (1 g, PO, SID, for 7 days), and simethicone (1 mL, PO, SID, for 7 days). Ten days after surgery, wound dehiscence was observed. Due to the anatomical location of the lesion and constant fecal contamination of the area, healing by second intention was adopted. Laser therapy, moxibustion, and intensified local wound management, with wound cleansing every four hours, were implemented until complete healing was achieved within five days. No papilloma recurrence was observed during the follow-up period. However, fecal retention within the anal sac persisted as a functional sequela. Surgical excision enabled both treatment of the lesion and collection of tissue samples for diagnostic confirmation. Although the PCR result was negative, histopathological evaluation was consistent with papillomavirus infection, allowing the diagnosis of squamous papilloma. Wound dehiscence was attributed to constant fecal contamination of the affected area, supporting the decision to manage the wound by second intention in association with complementary therapies and intensive wound care. This report described a case of squamous papilloma in a guinea pig, highlighting its clinical presentation, diagnostic findings, and postoperative outcome. Despite the negative PCR result, histopathological evaluation allowed definitive diagnosis of the lesion.

INDEX TERMS: Squamous papilloma, histopathology, polymerase chain reaction (PCR).

Periodontitis in a hedgehog (*Atelerix albiventris*) kept under human care: case report

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Increasingly popular as pets in Brazil, hedgehogs (*Atelerix albiventris*) frequently appear in exotic animal clinics. Their management is challenging due to anatomical and behavioral particularities. Periodontal diseases secondary to dietary errors are recurrent in this species, making knowledge of proper care essential to prevent disease and promote well-being. This study aims to report a case of periodontitis in a 3-year-old female hedgehog treated at the "Setor de Medicina e Conservação de Animais Selvagens", "Hospital Veterinário de Pequenos Animais" of the "Universidade Federal Rural do Rio de Janeiro" (HHPA-UFRRJ). The animal was presented with loss of the left incisors I^1 and I_1 (upper and lower first incisors, respectively), without inappetence associated with pain. Under sedation, the oral cavity was evaluated using the dental formula: Incisors (I): 3/2; Canines (C): 1/1; Premolars (PM): 3/2; Molars (M): 3/3; revealing absence of I^2 , C^1 , I_2 , C_1 , PM_1 , PM_2 , M_1 , M_2 , M_3 (right antimere); I^1 , I^2 , I^3 , C^1 , I_1 , I_2 , C_1 (left antimere); along with findings consistent with periodontitis: gingival hyperemia, calculus accumulation, and dental mobility. Radiographic examination revealed alveolar bone resorption, while blood count, biochemical profile, and fecal parasitology showed no abnormalities. Given the clinical findings, tartarotomy and exodontia were indicated. Preanesthetic medication was administered with midazolam (0.5 mg/kg) and butorphanol (0.5 mg/kg) IM, followed by induction with isoflurane via an adapted veterinary face mask. Once the anesthetic plane was reached, venous access was established via the lateral saphenous vein and orotracheal intubation performed with an adapted no. 06 urethral catheter compatible with the patient's tracheal

diameter and length. Bilateral infraorbital, mandibular, and mental nerve blocks were performed using 2% lidocaine diluted in saline to 1%. The procedure began with tartarotomy of remaining teeth and oral antisepsis with 0.12% chlorhexidine. For exodontia, a perimetral gingival incision was made with a no. 15 scalpel, followed by periodontal ligament luxation using an adapted 22G hypodermic needle (filed and curved). Extraction was performed with hemostatic forceps through rotation and gentle curved traction, finalized with Sultan-pattern suturing using 5-0 polydioxanone. Teeth submitted to the procedure were PM^2/I_1 (right antimere) and PM_1 , PM_2 (left antimere). Anesthetic recovery was uneventful, with renewed interest in food within 30 minutes. Therapeutic protocol included: dipyrone (28 mg/kg) TID 7d; tramadol hydrochloride (2.5 mg/kg) BID 3d; meloxicam (0.2 mg/kg) SID 4d; benzoylmetronidazole (25 mg/kg) BID 10d; clindamycin (10 mg/kg) BID 10d; chlorhexidine spray BID 10d. The animal's regular feed, softened with water, was prescribed to facilitate intake. At 10 days, complete healing was observed with no discharge, bleeding, or dehiscence, and improved gingival appearance. Advanced periodontitis requires immediate exodontia, as progression may lead to osteomyelitis and abscesses. Even when a species-appropriate commercial diet is used, prevention still depends on abrasive foods such as insects, as well as regular tooth brushing with veterinary toothpaste applied using a flexible cotton swab. Extraction of compromised dental elements proved fundamental for resolving advanced periodontitis, and despite significant tooth loss, favorable clinical progression was achieved, preserving food intake, well-being and quality of life.

INDEX TERMS: Veterinary dentistry, exotic pet medicine, periodontal disease, oral surgery, Erinaceidae.

Molecular detection and epidemiology of mollicutes in domestic, wild, and exotic birds in the State of Rio de Janeiro, Brazil

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The class Mollicutes comprises bacteria lacking a cell wall, characterized by reduced genome size and a wide host range. In birds, the genera *Mycoplasma*, *Acholeplasma*, and *Ureaplasma* are particularly noteworthy, with *Mycoplasma* species being the most frequently associated with respiratory diseases, conjunctivitis, and production losses. The widespread distribution of these microorganisms, together with the occurrence of subclinical infections, makes epidemiological surveillance essential for understanding their circulation and sanitary impact. In this context, molecular detection techniques,

especially those based on polymerase chain reaction (PCR) and sequencing of the 16S rRNA gene, have proven valuable for the early diagnosis and epidemiological characterization of Mollicutes in avian populations. This study aimed to investigate the occurrence and epidemiology of microorganisms belonging to the class Mollicutes in domestic, wild, and exotic birds, as well as to evaluate how different sanitary management conditions and housing systems may influence the circulation of these microorganisms, with the intention of sequencing positive samples to identify the genera involved. Samples were

collected from birds originating from backyard flocks, wildlife rescue cases, veterinary hospital admissions, and captive populations maintained in a public zoo. Conjunctival, oral, and cloacal swabs were obtained and subjected to DNA extraction, followed by conventional PCR targeting the 16S rRNA gene of Mollicutes. A total of 337 birds were evaluated, including 161 domestic, 140 wild, and 36 exotic birds, yielding 699 biological samples. Mollicutes DNA was detected in 46 birds, corresponding to an overall positivity rate of 13.6%. Positive birds were identified among domestic (17/46), exotic (15/46), and wild (14/46) species, demonstrating the widespread circulation of these microorganisms among different avian groups. Positive cases were observed in several species, including chickens, guinea fowl, ducks, pheasants, parrots, macaws, toucans, owls, and hawks. In addition to commonly affected domestic birds, Mollicutes were detected in several wild species that remain poorly represented in the scientific literature, including owls,

toucans, hawks, parakeets, and screamers, highlighting the importance of surveillance studies in both free-ranging and captive wild birds. Positive birds were detected at multiple locations, particularly in Paraíba do Sul and at the Municipal Zoo of Volta Redonda, environments characterized by collective management and the coexistence of different species. Detection was more frequent in oral swabs (28 positive samples) than in cloacal swabs (18 positive samples), reinforcing the importance of the upper respiratory tract in the maintenance and transmission of these microorganisms. These findings demonstrate the circulation of Mollicutes among domestic, wild, and exotic birds in the state of Rio de Janeiro and underscore the importance of molecular surveillance in multispecies environments. The results contribute to a better understanding of the epidemiology of Mollicutes and provide a basis for future studies involving molecular characterization and sequencing to identify the genera of Mollicutes detected in this study.

INDEX TERMS: Avian pathology, molecular diagnosis, sanitary management, backyard poultry, captive fauna, wildlife surveillance.

Financial support from FAPERJ, through an Undergraduate Scientific Initiation Scholarship

Hematological profile of clinically ill domestic rabbits (*Oryctolagus cuniculus*): a comparative analysis

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Domestic rabbits have become increasingly popular as companion animals, resulting in a growing demand for specialized veterinary care and a greater need for species-specific clinical and laboratory data. Like other species, they are susceptible to various diseases, making the complete blood count an important tool for assessing the health status and clinical monitoring of these animals. However, the leukocyte response in rabbits differs from that observed in most domestic mammals, which can make it difficult to identify inflammatory and infectious processes through the interpretation of complete blood counts. The objective of this study was to compare the hematological parameters of clinically ill and healthy animals, evaluating the influence of diseases on the species' hematological profile. We analyzed complete blood counts performed at the Laboratory of Veterinary Clinical Pathology at the "Universidade Federal Rural do Rio de Janeiro" (UFRRJ) from March 2023 to September 2024, totaling 44 tests from sick rabbits and 13 from clinically healthy rabbits. The group of sick animals included rabbits with ophthalmological, dermatological, orthopedic, infectious, and neoplastic diseases treated at the Veterinary Hospital. In contrast, the healthy group included rabbits without clinical signs of disease from the institution's Rabbit Farming Sector. Hematological parameters (red blood cell count, hemoglobin concentration, hematocrit, total white blood cell count, absolute and relative white

blood cell differential counts, and total plasma protein concentration) were compared between the groups using BioEstat 5.3 software, with a significance level of 5%. There was a statistically significant difference ($p < 0.05$) in the parameters described below, indicating a distinct hematological pattern in sick animals. In 82% (36/44) and 61% (27/44) of these animals, respectively, reductions in hematocrit and hemoglobin concentration were observed, characterizing anemia; 98% (43/44) exhibited absolute and relative lymphopenia, 89% (39/44) exhibited relative heterophilia, and 57% (25/44) exhibited absolute and relative monocytosis. Changes in total plasma protein concentration were observed in 57% of the animals, with hyperproteinemia in 43% (19/44) and hypoproteinemia in 14% (6/44). Qualitative evaluation of blood cells revealed morphological changes in leukocytes in 64% of cases, including an increase in the proportion of reactive lymphocytes in 41% (18/44) and toxic heterophils in 23% (10/44). Healthy animals showed no abnormalities and maintained their hematological parameters within the reference ranges. These results contribute to the characterization of the main hematological changes observed in clinically ill domestic rabbits and have direct applicability to the clinical management of pet rabbits, reinforcing the importance of the complete blood count as a tool for diagnosis and clinical monitoring.

INDEX TERMS: Clinical monitoring, complete blood count, leukocyte response, sick rabbits.

Molecular detection of microfilariae in marmosets of the genus *Callithrix* sp. in the States of Rio de Janeiro and Espírito Santo

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Wild mammals of the genus *Callithrix* sp. are primates known as marmosets. The genus comprises six species endemic to Brazil, and there are also hybrid individuals resulting from interbreeding between species. Microfilariae are the larval forms of nematodes and are transmitted by blood-feeding insects. They develop in the blood and tissues of animals. Primates of the genus *Callithrix* sp. can be infected by filariae; therefore, their proximity to urban areas may pose a public health risk, as microfilariae may have zoonotic potential. Therefore, the present study aimed to detect filarial infection in marmosets kept in human care (KHC) and in the wild (TW) in the states of Rio de Janeiro (RJ) and Espírito Santo (ES), as well as to determine the prevalence of this infection in this genus of primates. Detection was performed using conventional polymerase chain reaction (PCR) after DNA extraction from blood samples. The blood was collected from the femoral vein following restraint and a clinical examination. For TW animals, traps were used for capture, and chemical restraint was employed. For KHC animals, either physical or chemical restraint was used. A total of 68 animals were tested, including 21 animals from Rio de Janeiro (KHC) and 47 animals from Espírito Santo (34 KHC and 13 TW). The results were positive in 15 (71.43%; 95% CI: 47.8–88.7%) of the 21 samples from RJ. In ES, 12 (25.53%; 95% CI: 14.3–40.3%) of the 47 samples were positive, including eight (66.67%; 95% CI: 34.9–90.1%)

KHC and four (33.33%; 95% CI: 9.9–65.1%) TW. Notably, the confidence intervals for these two estimates overlap considerably (34.9–90.1% vs. 9.9–65.1%), suggesting that the observed difference (66.67% vs. 33.33%) should be interpreted with caution and may not reflect a true biological disparity. In a recent study conducted in the Metropolitan Region, the prevalence of microfilariae in marmosets was 37.25% (19 of the 51 samples), with six (31.57%) being TW and 13 (68.42%) being KHC. This distribution also shows substantial uncertainty given the small numbers. Studies suggest that filarial worms are more common in KHC-infected animals, and this may be related to proximity to humans and domestic animals, which facilitates helminth infection. Furthermore, a plausible hypothesis is that the high density of animals in the same enclosure facilitates transmission via vectors. In this context, a significant difference in prevalence was also observed between the two states, as RJ had a positivity rate three times higher than that of ES. This discrepancy may be associated with population composition, since individuals from RJ were maintained under KHC conditions, whereas those from ES included both TW and KHC individuals. It is concluded that microfilariae are present in *Callithrix* sp. from RJ and ES. The prevalence of microfilariae is higher in KHC individuals, and molecular analysis is essential for determining this parameter.

INDEX TERMS: Hemoparasites, wildlife, non-human primates, molecular biology, DNA extraction, PCR.

Ethical approval from Animal Ethics Committee (CEUA), protocol no. 23152.000419/2022-47 and 2144/2024.

Anatomy of the lumbosacral spinal cord as applied to epidural anesthesia in the jaguarundi (*Herpailurus yagouaroundi*)

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The South American wildcat (*Herpailurus yagouaroundi*) is a small felid found throughout Brazil, but it has low population density and is considered at risk of extinction. Among the structures of anatomical interest in this species, the spinal cord stands out: nervous tissue located within the vertebral canal, characterized by variations in its diameter due to cervical and lumbar enlargements, as well as the presence of the conus medullaris. The spinal nerves originate from this structure; they are responsible for forming the peripheral nervous system and for conducting stimuli related, amongst other things, to pain and locomotion. Anatomical knowledge of the spinal cord is of great importance for the administration

of epidural anesthesia. The aim of locoregional blocks is to reduce the amount of systemic anesthetic drugs, resulting in a lower incidence of dose-related adverse effects. They induce desensitization of the patient's caudal structures, thereby providing profound analgesia, offering significant physiological advantages and being widely used in surgical procedures in the retroumbilical region. Consequently, there is a difference in the site of application of this method between felines (S1–S2) and dogs (L7–S1) due to differences in spinal cord length, with the site being displaced more caudally in cats. Thus, the aim of this study was to describe the anatomy of the spinal cord in the lumbosacral region of Moorish cats. Seven cadavers

of adult male Moorish cats from the collection of the “Laboratório de Ensino e Pesquisa em Morfologia de Animais Domésticos e Selvagens” at the “Universidade Federal Rural do Rio de Janeiro” (UFRRJ) were dissected. The spinal cord was carefully dissected whilst preserving its anatomical integrity, and its synoptic relationship with the lumbosacral vertebrae was described. The lumbar bulge and the conus medullaris were identified, measured and photographed. The skeletal orientation of the lumbar bulge, as well as its length, was assessed in seven specimens. The segments L4/L5, L4/L6 and L5/L6 were observed most frequently, each accounting for 28.57% of cases, followed by the L5/L7 segment (14.28%). The mean length of the lumbar intumescence was 3.92 cm ($\pm$ 0.45). The skeletal location of the medullary cone was most frequently found at the L7/C1 transition (42.85%), followed by L7/S3 (28.57%), S1/C1 (14.28%) and L7/S2 (14.28%). The mean length of the conus medullaris was 4.31 cm ($\pm$ 0.78). The findings

obtained show partial similarities with those described in studies conducted on other felids. In view of this, knowledge of the anatomy, position and dimensions of the spinal structures contributes to the safer and more precise implementation of anesthetic protocols involving the epidural technique, taking into account the anatomical particularities of felids and the caudal displacement of the spinal cord compared to canids. The present study enabled the characterization of the skeletal orientation and dimensions of the lumbar intumescence and the spinal cone in *H. yagouaroundi*, providing anatomical data that may assist in the application of epidural anesthetic techniques in this species. However, due to the small number of specimens evaluated and the exclusive use of male animals, further studies with a larger sample size and the inclusion of females are necessary to broaden our understanding of possible intraspecific anatomical variations.

INDEX TERMS: Jaguarundi, anatomy, lumbosacral spinal cord, epidural anesthesia.

Ethical approval from Animal Ethics Committee (CEUA 018/2017).

DNA extraction from frozen blood clots of hybrid marmosets

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Obtaining biological samples from wild animals involves logistical, ethical, and biosafety challenges, especially when capture, restraint, and blood collection are required. Therefore, in this context, the use of remaining materials from previously collected samples may expand the diagnostic and scientific potential of these samples, reducing the need for new procedures in animals. The objective of this study was to evaluate DNA recovery from frozen blood clots of hybrid marmosets, *Callithrix* spp., from the “Área de Proteção Ambiental da Bacia do Rio São João”, in the state of Rio de Janeiro. The clots used were remnants of previously collected samples, whose serum had been used for biochemical analyses, and were kept frozen at -80 °C until processing. Ten blood clot samples were processed, using approximately 25 mg of material per sample, with extraction performed by the phenol-chloroform method, lysis in buffer containing 2.5% SDS and proteinase K, overnight incubation at 56 °C, followed by steps with phenol, chloroform, precipitation with sodium acetate and absolute ethanol, washing with 70% ethanol, and final elution in Tris-EDTA (TE) buffer. The extracted DNA was quantified by microvolume spectrophotometry, considering that absorbance at 260 nm is associated with the presence of nucleic acids and allows estimation of DNA concentration, used as an indicator of extraction yield. Readings at 280 nm and 230 nm are influenced, respectively, by proteins and

phenolic compounds, and by residual contaminants, such as salts, solvents, and reagents. Based on these readings, the 260/280 and 260/230 absorbance ratios were evaluated as indirect indicators of purity, with values close to 1.8 for 260/280 and greater than 1.8 for 260/230 considered compatible with good-quality DNA; the data were analyzed using descriptive statistics. A reagent blank, composed of the TE buffer used for final elution, was used for baseline correction in the spectrophotometric evaluation. Measurable DNA was obtained from all analyzed samples, with concentrations ranging from 18.2 to 124.1 ng/ μ L, a mean of 50.88 ng/ μ L, and a median of 41.85 ng/ μ L. Only one sample showed a concentration below 20 ng/ μ L, a range in which purity ratios obtained by spectrophotometry should be interpreted with caution. The 260/280 ratio ranged from 1.58 to 1.86, with a mean of 1.78 and a median of 1.80, whereas the 260/230 ratio ranged from 2.11 to 4.24, with a mean of 2.53 and a median of 2.34. The results demonstrated satisfactory DNA yield and purity, although the evaluation was limited to spectrophotometric parameters. Molecular assays will be conducted in a subsequent step to confirm DNA integrity and applicability. If confirmed, this material may represent a strategy for optimizing biological samples from wild animals and reducing the need for new captures and collections.

INDEX TERMS: DNA extraction, clotted blood, *Callithrix* spp., non-human primates, wildlife, molecular diagnosis, spectrophotometry.

Colistin resistance from a One Health perspective: effects of regulatory restriction on the *mcr-1* gene in *Escherichia coli* of avian origin

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The discovery of the plasmidial gene *mcr-1*, of resistance to colistin, revealed a mechanism of horizontal transfer capable of rapidly disseminating resistance among bacterial populations, which becomes especially concerning considering that colistin is one of the last therapeutic resources for the treatment of infections caused by multidrug-resistant Gram-negative bacteria. The study aimed to evaluate the possible impact of Normative Instruction no. 45/2016, which prohibited the use of colistin as a zootechnical additive in Brazil, on phenotypic resistance to colistin and the occurrence of the *mcr-1* gene in isolates of *Escherichia coli* from broiler production in the state of Rio de Janeiro. A total of 190 *E. coli* isolates were obtained from cloacal swabs of broilers from farms located in São José do Vale do Rio Preto, Rio de Janeiro and analyzed. Of these, 107 isolates were collected in 2015/2016, before the implementation of the regulation, and 83 in 2023, after its entry into force. Bacterial identification was performed by matrix-assisted laser desorption/ionization time-of-flight mass spectrometry (MALDI-TOF MS) and molecularly confirmed by polymerase chain reaction (PCR). Phenotypic resistance to colistin was evaluated by screening on agar supplemented with 2 µg/mL and 4 µg/mL of colistin. The cutoff value used was ≥ 2 µg/mL. As a positive control for this test, the standard strain *Escherichia coli* ATCC25922 was used. Detection of the *mcr-1* gene was performed by simplex PCR, with the positive control *Escherichia coli* CCVSU9751 (INCQS). The frequencies of resistance and genetic detection were compared between the pre- and post-regulation periods. Statistics were performed using R software version

4.2.2, and a significance level of 5% was adopted. The results suggest a significant reduction in both phenotypic resistance to colistin and the frequency of the *mcr-1* gene after the implementation of Normative Instruction no. 45/2016. Phenotypic resistance decreased from 95.3% (102/107) to 18.1% (15/83), while detection of *mcr-1* decreased from 58.0% (62/107) to 25.6% (21/83). Although both reductions were statistically significant, the decrease observed for the *mcr-1* gene was less pronounced than that observed for phenotypic resistance, suggesting the persistence of genetic determinants of resistance even after the reduction of selective pressure exerted by the use of colistin. The results point to the potential effectiveness of the regulatory policy in reducing colistin resistance in animal production systems. However, the persistence of the *mcr-1* gene suggests that the dissemination of resistance does not depend exclusively on the direct use of the antimicrobial, possibly being related to the maintenance of plasmids and other mobile genetic elements capable of promoting horizontal transfer among bacteria. This phenomenon explains why the reduction in phenotypic resistance occurred more rapidly than the decrease in the frequency of the genetic marker. Thus, there was a significant reduction in phenotypic resistance to colistin and in the frequency of the *mcr-1* gene in isolates of *E. coli* from broiler production. The persistence of *mcr-1* in bacterial populations reinforces the need for continuous molecular surveillance, since these genetic reservoirs may favor the reappearance of resistance under favorable conditions.

INDEX TERMS: Antimicrobial, aviculture, genotypic analysis, zootechnical additive.

Molecular survey of haemosporidian parasites in raptors from Rio de Janeiro, Brazil

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Birds are widely recognized as bioindicators of ecosystem integrity, reflecting variations in environmental health. Within this group, raptors serve as epidemiological sentinels due to their position at the top of trophic chains, which allows for the accumulation of data regarding the regional circulation of pathogens. Consequently, epidemiological surveillance in wildlife screening units is essential to ensure the sanitary status of wild birds, preventing the carriage and subsequent dissemination of hemoparasites into natural environments during

management and release actions. This study aimed to investigate the occurrence of haemosporidian parasites (*Plasmodium* spp. and *Haemoproteus* spp.) in raptors maintained under human care at the “*Centro de Triagem de Animais Silvestres do Rio de Janeiro*” (CETAS-RJ). A total of 21 blood samples obtained from routine veterinary clinical procedures were analyzed, comprising nine from roadside hawks (*Rupornis magnirostris*) and 12 from southern caracaras (*Caracara plancus*). DNA was extracted using a commercially available kit. Molecular

diagnosis targeted the mitochondrial cytochrome b (cytb) gene through the nested polymerase chain reactions (PCR) technique. Amplified products were subjected to 2% agarose gel electrophoresis stained with ethidium bromide. DNA from a bird infected with *Plasmodium* spp. and ultrapure water served as positive and negative controls, respectively. All 21 samples analyzed tested negative for the presence of haemosporidian DNA. The successful amplification of the positive control at the expected band size of approximately 500 bp validated the reaction's integrity. The nested PCR protocol utilized is highly sensitive, with a detection limit of one parasite per 1,000,000 host blood cells. Therefore, these findings suggest low infection pressure or a healthy status for the birds studied regarding these specific pathogens. Unlike previous surveys in the Atlantic Forest that identified the southern caracara (*C. plancus*) as a highly parasitized

species and the roadside hawk (*R. magnirostris*) as a susceptible host, the current non-detection aligns with the epidemiological context of CETAS-RJ. Previous molecular surveys at the same unit involving other avian orders, such as Psittaciformes, also reported low haemosporidian prevalence (4.5%), supporting the hypothesis of restricted local circulation of these agents. Reporting negative results is essential to mitigate publication bias, allowing for accurate epidemiological mapping and filling knowledge gaps regarding the health status of Neotropical raptors. In conclusion, the raptors *R. magnirostris* and *C. plancus* maintained under human care at CETAS-RJ do not present haemosporidian infection. Surveillance of infectious agents in ex situ animals is essential for prevention, proper management, rehabilitation, and release, ensuring that pathogen dissemination to the natural environment is prevented.

INDEX TERMS: Avian malaria, birds of prey, haemosporidia, nested PCR, epidemiological surveillance.

Toxoplasma gondii circulation foci in synanthropic mammals: a One Health study at UFRRJ, Brazil

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Toxoplasmosis is a zoonosis caused by the obligate intracellular coccidian *Toxoplasma gondii*, relevant under One Health due to its severity in immunosuppressed individuals and pregnant women. The Seropédica campus of the "Universidade Federal Rural do Rio de Janeiro" (UFRRJ) is a potential risk area for zoonotic transmission due to the coexistence of humans, domestic animals, and wildlife. Synanthropic wild mammals act as environmental sentinels. This study aimed to identify and spatially characterize foci of *T. gondii* circulation in wild mammals on the UFRRJ campus Seropédica, Rio de Janeiro, Brazil, using a One Health approach. Twenty-eight wild mammals were captured in two ecologically distinct areas, separated by approximately 230 meters: the Veterinary Hospital Forest Fragment (Bosque HV, 22° 45' 28" S 43° 41' 37" W), an Atlantic Forest fragment with moist soil and documented felid presence; and the Lago Açu area (Lago IA, 22° 45' 33" S 43° 41' 44" W), an open environment with a permanent water body and herbaceous vegetation. GPS coordinates were recorded. The animals included eight hybrid marmosets (*Callithrix* spp.) and five black-eared opossums (*Didelphis aurita*) from Bosque HV, and fifteen capybaras (*Hydrochoerus hydrochaeris*) from Lago IA. Serology was performed using the modified agglutination test (MAT), with a cutoff point of 1:25. Seroprevalence between areas was compared using Fisher's exact test, and 95% confidence intervals were estimated via the Wilson method, both implemented in RStudio. All 13 animals captured in Bosque HV were seropositive (100%; 95% CI: 75.5–

100%), with high MAT titers (median 1:800). In Lago IA, 9/15 capybaras were seropositive (60%; 95% CI: 32.3–83.7%), with lower titers (median 1:50–1:200). The difference between areas was highly significant ($p = 0.0009$, Fisher's exact test). Bosque HV showed a concentrated cluster of positives involving two ecologically distinct species, whereas Lago IA showed a diffuse distribution. The 100% seropositivity in Bosque HV, involving arboreal Neotropical primates and terrestrial omnivorous marsupials with different habitat uses, indicates intense and persistent environmental contamination by *T. gondii* oocysts in this forest fragment. The presence of stray cats and moist soil likely favors oocyst sporulation and persistence. The detection of antibodies against *T. gondii* in synanthropic mammals highlights their role in the epidemiological cycle of toxoplasmosis as intermediate hosts, thereby contributing to the maintenance of the parasite in the environment. The short distance between the two foci (230 m) and the potential for surface runoff from the forested slope toward Lago IA suggest possible spatial connectivity of contamination, which may explain the moderate seropositivity observed in capybaras. Both areas represent a risk of exposure for the academic community, especially for those who walk on exposed soil, handle wild animals, or cultivate food plants on campus. Two spatially distinct foci of *T. gondii* circulation were confirmed on the UFRRJ campus, with Bosque HV identified as the main high-intensity focus. Institutional measures should be prioritized, including management of the stray cat population, implementation of

seroepidemiologic monitoring programs with analyses based health education for the university community. of risk factors in wildlife on campus, and One Health-

INDEX TERMS: Apicomplexa, disease mapping, epidemiology, spatial epidemiology, seroprevalence, toxoplasmosis, wildlife conservation.

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First sequencing of *Toxoplasma gondii* detected in snake (*Boa constrictor*) in Brazil

118. Athayde-Gusmão AE, Freitas RL, Frazão-Teixeira E, Bulhões-Corrêa M, Coelho BP, Dias GM, Ubiali DG, Silva AF. *Pesquisa Veterinária Brasileira* 46(Supl.):89. Programa de Pós-Graduação em Medicina Veterinária (Patologia e Ciências Clínicas), Universidade Federal Rural do Rio de Janeiro, Rodovia BR-465 Km 7, Seropédica, RJ, 23890-000, Brasil. E-mail: anna.athaydeg@gmail.com

Toxoplasma gondii is a globally distributed zoonotic protozoan whose environmental dissemination is driven by oocyst shedding by domestic and wild felids. Although this parasite has been extensively investigated in mammals and birds, its occurrence and biological significance in reptiles remain poorly understood. This study reports the first molecular detection of *T. gondii* DNA in *Boa constrictor* in Brazil. Tissue samples from 13 red-tailed boas submitted for diagnostic necropsy from 2022 to 2025 were analyzed. Brain and liver fragments were initially screened using pooled samples, followed by individual testing of animals from positive pools. Molecular detection was performed by conventional polymerase chain reaction (PCR) targeting the 529-bp repetitive element of *T. gondii* using TOX4 and TOX5 primers, followed by Sanger sequencing and nucleotide basic local alignment search tool (BLASTn) analysis. *T. gondii* DNA was detected in one of 13 snakes (7.7%).

Sequencing of the PCR product from the positive animal generated an informative 389-bp fragment, which showed 100% query coverage and 93.32% nucleotide identity with *T. gondii* reference sequences in GenBank, with highly significant matches. The PCR-positive snake was a young male with a clinical history of difficulty defecating and gross findings including fecaloma, intestinal hemorrhage, pulmonary edema, epicardial petechiae, and a necrotic caseous pericloacal mass. However, histopathological examination did not reveal tachyzoites, tissue cysts, or lesions suggestive of active toxoplasmosis. These findings provide molecular evidence of *T. gondii* DNA in *B. constrictor* and expand current knowledge on parasite occurrence in reptiles, while reinforcing the need for further studies to clarify their role in the environmental and trophic dynamics of *T. gondii*.

INDEX TERMS: Toxoplasmosis, reptiles, wildlife, One Health, zoonoses.

Anatomical variations of the renal arteries in the southern tiger cat (*Leopardus guttulus*): a case report

119. Bastos MET, Pereira LV, Serafin KN, Carvalho RBJ, Roberto LRO, Stocco AV, Santos AL, Abidu-Figueiredo M. *Pesquisa Veterinária Brasileira* 46(Supl.):89. Departamento de Anatomia Animal e Humana, Universidade Federal Rural do Rio de Janeiro, Rodovia BR-465 Km 7, Seropédica, RJ, 23890-000, Brasil. E-mail: dudatemer@ufrj.br

The southern tiger cat (*Leopardus guttulus*) is a small felid that suffers from increasing habitat loss and fragmentation, which contributes to the species' vulnerable status and risk of extinction. In this context, anatomical studies of the species are important for expanding knowledge about its biology and informing conservation efforts. Among the species' anatomical features, the kidneys are located in the lumbar region between the last thoracic and first lumbar vertebrae and receive their blood supply from branches of the abdominal aorta, the right and left renal arteries. Anatomical variations regarding the

number of renal arteries and veins are frequently reported in various studies and may occur in both hemisides. In addition, anatomical variations include the presence of more than one renal artery and/or vein, such as duplication and triplication. Anatomical knowledge regarding the presence of multiple renal arteries, both in relation to pre-hilar and polar variations, must be evaluated due to its importance for renal perfusion and its influence on dissection planes and renal surgical procedures. The objective of the study was to report variations in the renal arteries in *L. guttulus*, with a focus on potential clinical

and surgical implications. During dissection activities conducted at the Animal and Human Anatomy Laboratory of the “Universidade Federal Rural do Rio de Janeiro” (UFRRJ), numerical and topographical variations in the renal arteries were observed in a specimen of an adult male small wildcat donated by the Serra dos Órgãos National Park. The specimen was identified, and the peritoneal cavity was dissected to expose the kidneys, characterizing the renal topography and their respective vessels as well as vascular morphology. Renal measurements (length, width, and thickness) and the length of the renal vessels were obtained using a digital caliper. The specimen, with a rostral-sacral length of 47 cm, exhibited variation in renal arterial distribution, characterized by the presence of polar arteries. In the right kidney, the renal artery (1.83 cm) divided into two hilar branches, cranial (0.68 cm) and caudal (0.82 cm), in addition to the presence of a caudal polar artery originating directly from the abdominal aorta

(3.04 cm) that bifurcated into ventral (2.11 cm) and dorsal (2.26 cm) branches. In the left kidney, the renal artery (0.95 cm) gave rise to two hilar branches and an extra-hilar cranial polar branch (2.09 cm), subdivided into dorsal (0.35 cm) and ventral (1.08 cm) branches. Multiple renal arteries are related to the persistence of mesonephric arteries, so each is responsible for supplying the segment of the kidney it serves. A possible interruption of blood flow due to injury or ligation results in ischemia and necrosis of the parenchyma. Furthermore, it is worth noting that such findings and their variations have been identified in other species by different authors; however, reports in wild animals remain scarce. Therefore, prior knowledge of these anatomical variations must be considered in surgical, radiological, and experimental procedures, due to the risk of vascular injury and possible complications resulting from ignorance of them.

INDEX TERMS: Southern tiger cat, anatomical variations, renal arteries, wild animals.

Heterospecific feather imping in a white-tailed hawk (*Geranoaetus albicaudatus* Vieillot, 1816): case report

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The integrity of primary feathers (remiges) in birds of prey is crucial for flight aerodynamics, maneuverability, and survival in the wild, playing a vital role in silent flight and successful hunting. Due to the fragile keratin structure of the calamus and rachis, feathers are highly susceptible to damage from falls, collisions, attacks, transport, improper handling, and captivity-related stress. Continuous assessment and the partial or total repair of fractured or bent feathers through the imping technique are essential for the full recovery and successful release of raptors managed in rehabilitation centers. The aim is to report a heterospecific imping in an adult white-tailed hawk (*Geranoaetus albicaudatus*). The hawk was admitted for veterinary care and remained hospitalized for six months due to severe pododermatitis and osteomyelitis, a condition requiring daily physical restraint. This constant handling resulted in severe damage to the primary remiges (PR), significantly compromising its flight capabilities. To restore flight function, heterospecific imping was performed using feathers from a crested caracara (*Caracara plancus*). The donor feathers were obtained from the “Setor de Medicina e Conservação de Animais Selvagens” (SMAS) feather bank, collected from specimens that had previously died in the sector. Each feather was carefully extracted with forceps to preserve its entire structure, including the calamus and both the proximal and distal umbilicus. Only intact tail, primary, and secondary remiges free of rachis or vane abnormalities were utilized. The imping procedure began by isolating the fractured feather with paper, followed by incising the quill

and removing the damaged section. A donor feather was anatomically aligned, and one end of a bamboo skewer, coated with cyanoacrylate glue, was inserted into its calamus. The opposite end of the skewer was measured, trimmed to fit, and secured into the receptor quill using the same glue, finishing the imping process. This procedure was repeated for the second to tenth right PR and for the third to ninth left PR. After this, the hawk was moved to a flight enclosure, showing excellent adaptation. On the first day, it flew longer distances and successfully captured hidden prey in the upper section of the enclosure. The patient was fully rehabilitated and discharged two months after the procedure. The procedure's success can be attributed to the similar size, shape, and texture of the donor and receptor feathers, despite the absence of an intraspecific donor and the fact that *G. albicaudatus* and *C. plancus* belong to distinct orders and have different flight patterns. For instance, *G. albicaudatus* utilizes soaring flights to hunt in high-altitude environments, whereas *C. plancus* utilizes short flights for ground-based feeding. Rapid improvements in hunting and flight capabilities were observed already on the very first day. This suggests that imping optimizes rehabilitation timelines, eliminating the need to await a complete natural molt cycle before discharging the animal. This case implies that heterospecific imping is an effective and practical method for raptor rehabilitation, enabling a successful and timely return to the wild without compromising mobility or predatory performance.

INDEX TERMS: Wildlife conservation, raptor rehabilitation, feather bank, raptor medicine, Accipitridae, Falconidae, flight function.

Anatomical description of skull and mandible foramina in puma (*Puma concolor*)

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Veterinary medicine for wild animals still has very little literature on the anatomical characteristics and structures of the skull. Therefore, more specific information on wild felid anatomy is essential to support craniofacial procedures. The aim of this study was to identify and name the main foramina of the skull and mandible in the puma (*Puma concolor*). A female adult specimen from the "Departamento de Anatomia Animal e Humana" of the "Universidade Federal Rural do Rio de Janeiro" (UFRRJ) was used. The head was disarticulated at the occipital bone, and the skin and musculature were removed. After that, the head was submerged in water in a plastic container with a lid, with water changes for complete maceration. The foramina were identified and named based on descriptions from other felids. In the mandible, the mental foramina were observed rostrally and laterally, both present in pairs in both antimeres. Medially, close to the mandibular ramus, the mandibular foramina were identified, single in each antimeres. In the skull, the following were described: the infraorbital foramen, located on the external surface of the maxilla, above the alveoli, at the level between the second and third premolar. The nasolacrimal canal was located at the beginning of the lacrimal bone, and the ethmoidal foramen, found in the orbital portion of the frontal bone, rostral to the optic foramen. The optic foramen was located in the presphenoid bone. The orbital fissure was observed at the junction of the notch of the basisphenoid bone with that of the presphenoid. The alar canal was located in the wing

of the basisphenoid, connecting the caudal and rostral alar foramina. At the base of the wing of the basisphenoid, close to the junction with the body, the foramen rotundum and ovale were identified, the former being more rostral to the temporomandibular joint and the latter more medial. The palatine region included the sphenopalatine foramen in the palatine bone and, rostrally, the caudal palatine foramen. On the ventral surface, the greater palatine foramen was located at the suture between the maxilla and palatine bone, with two lesser palatine foramina observed caudally. The incisive foramina were located in the incisive bone at the level of the canines. The external acoustic meatus and stylomastoid foramen were located rostral and caudal to the tympanic bulla, respectively. From a caudoventral view, the hypoglossal and jugular foramina were identified between the tympanic bullae and occipital condyles. Centrally, the foramen magnum was located in the occipital bone. The cranial and mandibular foramina of the puma showed partial agreement with those described in domestic felids and in the Bengal tiger. The fusion of the hypoglossal and jugular foramina in the puma is noteworthy, as is the presence of two smaller palatine foramina; in the Bengal tiger, a single foramen is observed in the left antimeres. It is concluded that, despite the similarities with other felines, it is necessary to increase the sample size for the correct identification of these structures, supporting locoregional blocks in craniofacial and odontological procedures.

INDEX TERMS: Wild felids, cranial anatomy, mandibular anatomy, locoregional anesthesia.

Follicular thyroid carcinoma in red-footed tortoise (*Chelonoidis carbonarius*): an incidental necropsy finding

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Reptiles constitute a group of ectothermic vertebrates with physiological particularities distinct from those observed in mammals. The occurrence of neoplasms in these animals has been increasingly reported, frequently with post mortem diagnosis. Among chelonians, especially tortoises, the incidence of neoplasms is considered low; however, in a study previously described in the literature, thyroid endocrine neoplasms were shown to be the most frequent. Thyroid carcinomas originate from follicular or parafollicular cells. Tumors derived from follicular cells are the most common and include papillary, follicular, poorly differentiated, and anaplastic carcinomas, whereas medullary carcinoma originates from parafollicular cells.

The objective of this study was to report a case of follicular thyroid carcinoma in *Chelonoidis carbonarius* identified during necropsy. A male red-footed tortoise, approximately 25 years old and weighing 3.045 kg, was presented with dyspnea, intense sialorrhea, anorexia, oliguria, and constipation. During the diagnostic investigation, pneumonia was confirmed by microbiological culture of a tracheal wash, and eggs of the order Strongylida were detected on coproparasitological examination. Despite the instituted therapy, the animal showed no clinical improvement and died. During necropsy, a nodular mass measuring approximately 3.0 cm in length and 2.5 cm in width was observed in the thyroid region. The structure

was firm in consistency. Sectioning revealed a depressed area containing blackened material, delimited by thick and irregular walls. Histopathological examination revealed a poorly demarcated neoplastic proliferation composed predominantly of irregular thyroid follicles, enlarged and containing material compatible with colloid. Areas of follicular epithelial stratification were observed, ranging from two to five layers of epithelial cells, as well as regions with loss of follicular architecture and infiltration of adjacent basement membranes. The cells were polyhedral, with moderate eosinophilic cytoplasm, large oval nuclei containing prominent nucleoli and one mitotic figure in 10 high-power fields. Additionally, extensive multifocal areas of necrosis were identified. Epithelial stratification, loss of follicular architecture, and the infiltrative pattern observed constitute important histopathological criteria of malignancy, and the presence of necrotic areas suggests aggressive tumor behavior. Similar findings to those observed in this case have been described in follicular thyroid carcinomas in other species. These features support the diagnosis of follicular thyroid carcinoma

in the red-footed tortoise. It is noteworthy that other alterations observed during necropsy and subsequently confirmed by histopathology were considered responsible for death and showed no direct association with the neoplasm described. Additionally, immunohistochemical examination was recommended as a complementary diagnostic tool. Although most thyroid neoplasms can be diagnosed through histopathological examination, immunohistochemistry serves as a complementary tool, assisting in the identification of cellular origin and in the differential diagnosis among different tumor types. The histopathological findings were compatible with follicular thyroid carcinoma in a red-footed tortoise, with immunohistochemistry indicated as a complementary tool for its characterization and necropsy for comprehensive evaluation of the lesion and collection of samples. This report contributes to expanding the knowledge of the morphological characteristics of this rare neoplasm in chelonians. It reinforces its inclusion in the differential diagnosis of cervicothoracic masses in this class.

INDEX TERMS: Chelonians, thyroid neoplasms, malignancy, histopathology, immunohistochemistry.

High intestinal helminth burden associated with mortality in a wild Neotropic cormorant (*Phalacrocorax brasilianus*) from Lago Açu, Seropédica, Rio de Janeiro, Brazil

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Helminth infections are common in wild aquatic birds and may cause severe pathological alterations, especially under conditions of high parasite burden. The Neotropic cormorant (*Phalacrocorax brasilianus*) is a widespread piscivorous bird frequently exposed to endoparasites due to its feeding behavior and close association with aquatic habitats. Lago Açu is an artificial lake that attracts a high diversity of aquatic birds, providing suitable conditions for parasite transmission through interactions between avian hosts and aquatic intermediate hosts such as fish and mollusks. This report describes a fatal case of gastric helminth infection in a *P. brasilianus* collected at Lago Açu, located on the campus of the "Universidade Federal Rural do Rio de Janeiro" (UFRRJ), in Seropédica, Rio de Janeiro, Brazil. The bird had been previously captured during fieldwork using mist nets for the collection of biological samples, among them a fecal sample that revealed eggs of Strongylida type. Later, the animal was found again during a subsequent sampling event, showing signs of weakness and lying in a prone position in the midday sun. It was taken to the "Setor de Medicina de Animais Selvagens" of the "Hospital Veterinário de Pequenos Animais" at UFRRJ, where it received supportive care. Despite all therapeutic efforts, the individual died and was submitted for necropsy at the same facility. The necropsy revealed an extremely high gastric parasite

load, with numerous helminths distributed throughout the intestinal tract, causing marked gastric distention, mucosal congestion, hemorrhages, severe inflammation with focal necrosis, and perforation of the gastric mucosa until the serous layer. The helminths were carefully removed, washed in saline solution, and fixed in 70% ethanol for morphological and molecular identification. Preliminary stereomicroscopic examination indicated the presence of two distinct genera, possibly representing different taxonomic groups. Identification to the genus level was based on external morphology and general anatomical characteristics. To date, the two genera identified belong to the order Rhabditida. One is *Contracaecum* sp., and the other is *Syncuaria* sp. Members of the order Rhabditida are nematodes commonly found in aquatic birds and are characterized by complex life cycles involving intermediate hosts such as fish or aquatic arthropods. Infection in piscivorous birds occurs mainly through the ingestion of parasitized prey, and heavy infestations can result in ulcerative lesions, intestinal obstruction, and granulomatous inflammation. The probable cause of death was the heavy parasitic infection observed, compounded by probable heat stroke resulting from sun exposure. The weakness is a consequence of the intestinal obstruction, malabsorption, and possibly secondary infection. This case highlights the importance of continuous

parasitological surveillance, demonstrating that a high parasite burden may significantly impact on the health and survival of wild aquatic birds as indicators of environmental health and host-parasite interactions. The detection of two distinct helminth genera in a single host underscores the ecological complexity and high

parasite diversity associated with aquatic ecosystems in southeastern Brazil. Future studies will focus on the specific identification of these parasites using integrative taxonomic approaches and on assessing their ecological and epidemiological relevance.

INDEX TERMS: Gastrointestinal parasitism, helminths, aquatic birds, wildlife medicine.

Ethical approval from Animal Ethics Committee (CEUA), protocol no. 8856050525.

Clinical-surgical treatment of open pyometra in an elderly Syrian hamster (*Mesocricetus auratus*): case report

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The Syrian hamster (*Mesocricetus auratus*) is commonly kept as a pet and is characterized by its small size, high metabolic rate, and short lifespan (2–3 years). Pyometra is a septic uterine disease characterized by the accumulation of pus within the uterus and may occur in open or closed forms. In comparison, ovariectomy is the definitive treatment. This report describes the clinical-surgical management of pyometra in an elderly female Syrian hamster (two years old). The patient presented with abdominal distension, pain, purulent vaginal discharge, generalized alopecia, anasarca, oliguria, lethargy, dehydration (8%), tachypnea (150 breaths/min), congested oral mucosa, hyperglycemia (140 mg/dL), and mammary hyperemia. Ultrasonography revealed enlargement of the uterine body and horns (0.45 cm and 0.47 cm, respectively), confirming the diagnosis of pyometra and immediate surgical intervention was elected. For pre-anesthetic medication, midazolam (0.5 mg/kg), morphine (2 mg/kg), and ketamine (5 mg/kg) were administered intramuscularly (IM), whereas enrofloxacin (10 mg/kg) was administered subcutaneously. The animal was then intubated, induced, and maintained under anesthesia with isoflurane dose-response; subsequently, an intraosseous catheterization was performed in the right tibia. Blood gas analysis revealed respiratory and lactic acidosis, hypernatremia, hypokalemia, hypercalcemia, light anemia (40.5%; reference interval 43.24–49.36%), and hypothermia (35.5 °C). Therefore, thermal support was instituted, increasing the body temperature to 37 °C, along with fluid replacement using lactated Ringer's solution (1 mL/kg/h). During surgery, free purulent abdominal fluid, peritonitis, and intestinal adhesions were observed; abdominal flush was performed using warmed 0.9% NaCl, and metronidazole (5 mg/kg,

IO) was administered. The ovariohysterectomy and anesthesia proceeded without complications; following surgery, tramadol hydrochloride (10 mg/kg, SC, BID, 7d), dipyrone (35 mg/kg, SC, BID, 10d), metronidazole (20 mg/kg, PO, BID, 15d), and enrofloxacin (10 mg/kg, SC, BID, 15d) were prescribed. Immediately after the procedure, a mild reduction in anasarca was observed, and complete remission of the alterations occurred within seven days. Immediate ovariohysterectomy was necessary due to the presence of clinical signs suggestive of systemic inflammatory response syndrome, including anasarca, hyperglycemia, tachypnea, hypothermia, and mucosal congestion, indicating a severe life-threatening condition aggravated by the patient's senility and the species' high metabolic rate. Abdominal flush is recommended in cases of pyometra with abdominal contamination to reduce bacterial load and peritonitis. Additionally, preoperative or intraoperative antibiotics were administered to minimize bacterial translocation caused by manipulation of the septic focus; meanwhile, the association of two antibiotic classes (quinolone and nitroimidazole) provided broad-spectrum coverage against aerobic and anaerobic microorganisms. Pyometra has a high septic potential that may lead to acute kidney injury (AKI) due to systemic hypotension and tissue hypoperfusion, resulting in lactic acidosis and oliguria. Alopecia was associated with reproductive hormonal alterations in female small rodents, and respiratory acidosis, to respiratory depression caused by sedation and hypothermia, which reduces CO₂ elimination. The electrolyte disturbances identified may be secondary to dehydration, lactic acidosis, and the occurrence of AKI. This evidence-based clinical-surgical approach enabled safe intervention in a Syrian hamster, contributing to an increase in life expectancy.

INDEX TERMS: Therapeutic ovariohysterectomy, rodent, reproductive tract, peritonitis, small mammal.

Wound management in a *Salvator merianae* (Argentine black-and-white tegu) with suspected predation injury: case report

125. Silveira BD, Medeiros AEB, Santos BA, Stocco AV, Coelho BP, Roberto LRO, Amaral MMJO, Balthazar DA. *Pesquisa Veterinária Brasileira* 46(Supl.):XX. Setor de Medicina e Conservação de Animais Selvagens, Hospital Veterinário de Pequenos Animais, Instituto de Veterinária, Universidade Federal Rural do Rio de Janeiro, Rodovia BR-465 Km 7, Seropédica, RJ 23890-000, Brasil. E-mail: domingues.beatriz117@gmail.com

The increase in anthropogenic activities has contributed to the occurrence of trauma in free-ranging animals. In reptiles, these injuries pose a clinical challenge due to the anatomical and physiological particularities of the class, including reduced metabolism and slow healing. Thus, the aim of this study was to report the clinical management of a traumatic wound, suspected to be from predation, in a male *Salvator merianae*. The animal was referred to the specialized sector of "Universidade Federal Rural do Rio de Janeiro" (UFRRJ), presenting a deep dorsal lesion in the lumbosacral region, with cutaneous and muscular necrosis, presence of myiasis and tail loss due to autotomy (caudal autotomy). Laboratory and imaging exams were performed with no relevant alterations, as well as wound culture, which identified *Pseudomonas* spp. and *Enterococcus faecalis*. Analgesia, systemic antibiotic therapy and fluid therapy were started. Initial wound management included cleaning with 2% chlorhexidine diluted in saline (1:10), larval removal and surgical debridement. Subsequently, polyhexamethylene biguanide (PHMB 0.1%) solution was used, maintained over the lesions for 10 minutes, followed by application of collagenase, sterile gauze dressing, and bandaging. In the second week, collagenase was discontinued, and treatment with silver alginate was initiated. The interval between dressing changes was gradually extended, being performed daily during the first 14 days, every 48 hours until the end of the second month, and subsequently every 72 hours. After four months, the dorsal wound was in a maturation phase, allowing discontinuation of the therapeutic protocol and bandaging. The dorsal lesion healed faster than the tail lesion (six months). This may have occurred because

during tail regeneration, bifurcated tissue growth was observed, possibly related to incomplete autotomy, trauma outside the physiological fracture plane, or interference in the healing process. With continued topical treatment, detachment of the malformed portion and reorganization of tail growth were observed. PHMB was used because of its antiseptic, antimicrobial and wound-healing properties. The PHMB solution has slow action, requiring a minimum contact time of 10 to 15 minutes with the lesion, a period necessary for its interaction with microbial cell membranes and effectiveness of local action. Collagenase was introduced after surgical debridement, promoting enzymatic debridement of viable musculature and delaying wound healing, which is why it was promptly discontinued. Subsequently, silver alginate was introduced due to its antimicrobial activity, high exudate absorption and ability to maintain a moist environment, favoring granulation tissue formation, wound edge contraction and remodeling. Microbiological examination identified bacteria with resistance profiles to the systemically used antimicrobials. However, resolution of the local infection and satisfactory healing were observed after topical use of PHMB and silver alginate, suggesting effectiveness in local microbiological control. Despite the inappropriate use of collagenase, topical treatment with PHMB and silver alginate resulted in favorable wound healing in this Argentine black-and-white tegu. However, the contribution of other therapeutic interventions throughout the treatment should also be considered. These findings suggest that topical therapy may represent a promising alternative for the management of extensive and infected wounds, with the potential to reduce the need for systemic antimicrobials.

INDEX TERMS: Collagenase, polyhexamethylene biguanide (PHMB), silver alginate, tail regeneration, topical therapy, wound healing.

Dioctophyme renale in the liver of a coati (*Nasua nasua*): a case report

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Dioctophyme renale (Nematoda: Enoplida) is a nematode with worldwide occurrence that parasitizes the kidneys of domestic mammals such as dogs and cats, as well as wild mammals. Its presence has also

been reported in the skin and kidneys of humans. Its life cycle includes dogs as definitive hosts, annelids and oligochaetes as intermediate hosts, and paratenic hosts such as fish and amphibians. Infection occurs through



the ingestion of the intermediate or paratenic host by the definitive host. The parasite penetrates the stomach or duodenal wall of the animal, enters the peritoneal cavity, and lodges in the right kidney. Other possible locations of the parasite have been reported, including the left kidney, peritoneal cavity, testicle, bladder, ureters, and subcutaneous tissue. Infections caused by this worm are called diotrophymosis and are usually asymptomatic in dogs; when present, clinical signs may include weakness, difficulty walking, increased frequency of urination, anorexia, seizures, ascites, abdominal colic, weight loss, dysuria, and irritability. Diagnosis can be made by the visual identification of eggs in urinary sediment, through imaging techniques that allow visualization of adult parasites, or by surgical and necropsy findings. The most effective treatment is the surgical removal of the parasite and the affected organ or tissue, which, when performed in the early stages of infection, results in better recovery. The aim of this study is to report the presence of *D. renale* in the left hepatic lobe of a coati (*Nasua nasua*). During dissection activities involving wild animals at the “Laboratório de Ensino, Pesquisa e Extensão em Morfologia de Animais Domésticos e Selvagens”, a specimen of *D. renale* was identified, based on morphology and other described cases in the literature, attached to the parietal surface

of the left lobe of the liver of a female *N. nasua*. The specimen was collected, measured (34 cm), and stored in a 10% formaldehyde solution. After removal of the parasite, the formation of a groove in the middle of the left lobe was observed, corresponding to the site where the parasite was lodged. Regarding domestic animals, dogs present the highest frequency of parasitism, but *D. renale* has also been diagnosed in cats, pigs, horses, and cattle. Several wild animals act as reservoirs that can contaminate the environment with eggs, resulting in a source of infection for intermediate hosts. Adult *D. renale* have been observed in ferrets, maned wolves, red foxes, crab-eating foxes, seals, capuchin monkeys, otters, and two-toed sloths. According to the literature, when the parasite penetrates the duodenal wall, it lodges in the right kidney; if it penetrates the greater curvature of the stomach, it lodges in the left kidney; when it passes through the lesser curvature, it may lodge between the hepatic lobes. In this report, the parasite was found in a groove on the parietal surface of the left lobe of the liver. It is concluded that, although the literature describes the colonization of *D. renale* in the right kidney and peritoneal cavity of wild carnivores, including coatis, no reports were found describing the presence of this parasite attached to the liver in this species.

INDEX TERMS: Nematode, kidneys, liver, diotrophymosis, carnivore.

Main branches of the aortic arch in ostriches (*Struthio camelus*)

127. Santos AL, Roberto LRO, Stocco AV, Bath FVC, Alonso LS, Abidu-Figueiredo M. Pesquisa Veterinária Brasileira 46(Supl.):95. Departamento de Anatomia Animal e Humana, Instituto de Ciências Biológicas e da Saúde, Universidade Federal Rural do Rio de Janeiro, Rodovia BR-465 Km 7, Seropédica, RJ 23890-000, Brasil. E-mail: alexsandrolsantos@yahoo.com.br

Although it shares many anatomical characteristics with other birds, the ostrich possesses several unique features whose morphofunctionality remains incompletely understood. The growing interest in ostrich anatomy, particularly in studies focusing on the cardiovascular system, represents a promising field for further research and investigation. The first studies involving ostrich anatomy were conducted in the early twentieth century, primarily addressing phylogenetic aspects and providing some anatomical descriptions. Despite recent advances, several anatomical features of the species remain insufficiently described. Most of these studies have focused on partial descriptions of the cardiovascular system, with limited characterization of the major arterial branches. Furthermore, many descriptions were based on observations from only one or two specimens and generally lack detail. Among all birds, ratites appear to be among the least studied groups, despite their considerable biological interest due to their terrestrial lifestyle. The objective of this study was to characterize the main branches of the aortic arch in ostriches, providing a basis for a better understanding of cardiovascular morphofunctionality.

Twenty ostrich chicks of both sexes, aged between 1 and 15 days, originating from a small rural property, died naturally and were subsequently donated to the “Departamento de Anatomia Animal e Humana” of the “Universidade Federal Rural do Rio de Janeiro” (UFRRJ). Prior to fixation, the animals were measured considering the distance between the tip of the beak and the base of the tail. The abdominal aorta was dissected and cannulated for vascular injection using red-stained Petrolátex S-65 solution. Subsequently, the birds were immersed in a 10% formaldehyde solution for seven days. After this period, dissections were performed to expose the main branches of the aortic arch. In all dissected ostriches, the aortic arch exhibited a double brachiocephalic trunk. As its terminology suggests, its branches were distributed to the cephalic and thoracic regions and, after a short craniolateral course, divided into the subclavian and common carotid arteries, resembling descriptions reported by different authors in other domestic bird species. Originating from the subclavian artery, the internal thoracic artery was identified in both antimeres, as well as axillary artery branches that ranged from two to four, corroborating



findings from previous studies conducted in ostriches. The tracheal artery was also observed arising directly from the subclavian artery in all dissected ostriches. Although tracheal arteries and branches supplying the cervical region have previously been described in ostriches, no studies were found explicitly detailing this arterial origin. The common carotid arteries gave rise to the esophageal arteries, esophagotracheal arteries, and the vertebral trunk, which subsequently divided into

ascending and descending vertebral arteries, a pattern similar to that described for domestic chickens and other ostriches. It is concluded that the arrangement of the main branches of the aortic arch in ostriches presents similarities to that described in other birds, contributing to the knowledge of the cardiovascular anatomy of the species and providing a basis for future morphofunctional studies.

INDEX TERMS: Cardiovascular anatomy, brachiocephalic trunk, comparative anatomy, cardiovascular system.

Retrospective analysis of reptile cases at the Wildlife Medicine and Conservation Sector of UFRRJ

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Wildlife medicine has gained relevance due to the increase in exotic pets, wildlife trafficking and synanthropy, highlighting the need to document clinical case series to improve diagnostic and therapeutic approaches. The aim of this study was to describe the series of reptile cases treated at the “Setor de Medicina e Conservação de Animais Selvagens” (SMAS) of the “Hospital Veterinário de Pequenos Animais” (HHPA), “Universidade Federal Rural do Rio de Janeiro” (UFRRJ), from March 2023 to June 2026. Data were obtained from SMAS records and analyzed according to species, admission date, clinical suspicion, and outcome. The survey resulted in 124 clinical cases, comprising companion animals, free-ranging wildlife, and individuals transferred from wildlife triage centers. Data were analyzed using descriptive statistics and grouped into syndromic categories. Among the 124 reptile cases, chelonians predominated (67.2%; *Chelonoidis* spp., *Trachemys* spp. and *Phrynosoma* spp.), followed by snakes (20%; *Boa constrictor*, *Pantherophis guttatus*, ***Eryx colubrinus***, and *Helicops carinicaudus*), broad-snouted caimans (*Caiman latirostris*) (8%) and lizards (4.8%; *Salvator merianae* and *Iguana iguana*). Syndromic analysis showed a predominance of trauma (21%), followed by reproductive diseases (16.9%), metabolic-nutritional disorders (12.9%), and infectious diseases (8.9%). Gastrointestinal conditions associated with foreign body ingestion accounted for 3.2%, neoplasms for 0.8%, routine examinations and clinically healthy animals for 25%, inconclusive diagnoses for 8.1%, and surgical procedures for 3.2%. Among chelonians, reproductive disorders were especially prominent, including dystocia, cloacal, hemipenial and oviductal prolapse and follicular stasis. Trauma was also frequent, including carapace and plastron injuries or fractures, trauma caused by vehicles, and bite wounds, as well as metabolic-nutritional diseases

such as metabolic bone disease, hypovitaminosis A, and malnutrition. In snakes, infectious diseases were more common, including stomatitis, pneumonia, abscesses, and inclusion body disease (IBD), in addition to trauma and metabolic disorders. In crocodilians, cases were predominantly associated with malnutrition and trauma, whereas lizards mainly presented traumatic and metabolic conditions. Regarding clinical outcomes, clinical discharge was the most frequent, followed by death, euthanasia, referral to “Centros de Triagem de Animais Silvestres” (CETAS), and release. A substantial proportion of deaths occurred in cases involving infection, advanced reproductive disorders, and severe trauma, especially among snakes and chelonians. The predominance of chelonians in the case series may reflect their high frequency as companion animals and their long lifespan, which increases the likelihood of veterinary care throughout life. The high frequency of reproductive disorders highlights the need to investigate environmental and nutritional factors in the pathophysiology of these disorders in reptiles kept under human care. Trauma, the second main category, highlights the strong influence of anthropogenic factors, including inadequate husbandry and interaction with urban environments. Infectious diseases largely reflect secondary conditions associated with immunosuppression related to chronic stress and nutritional deficiencies. At the same time, metabolic-nutritional disorders reinforce the impact of inappropriate diets and husbandry conditions in reptiles under human care. Finally, the results show that several reptile conditions could be linked to environmental and nutritional challenges, and exposure to environmental risk factors, reinforcing the need for owner education, standardization of clinical protocols, and preventive actions in wildlife medicine.

INDEX TERMS: Chelonia, Squamata, pathology of reptiles, veterinary husbandry, herpetomedicine.

Successful management of a cutaneous abscess in a twister rat (*Rattus norvegicus*): a case report

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The house rat (*Rattus norvegicus*), commonly known as the twister rat, is a rodent species native to Asia that has become increasingly common as a pet. With the increase in their keeping as pets, diseases common to the species have been observed more frequently in clinical practice. Among these, cutaneous abscesses stand out as a condition often associated with bacterial infections. These lesions typically appear in areas such as the head, neck, and chest and require appropriate therapeutic intervention to prevent complications. The management protocol for abscess-related wounds includes drainage, systemic antibiotic therapy, and local wound cleansing, with polyhexamethylene biguanide (PHMB) being a widely used antiseptic alternative due to its antimicrobial action and low cytotoxicity. Therefore, this study aims to report the treatment of a cutaneous abscess in a pet rat, which had a favorable outcome and healed within a short period. The animal was referred for care at a specialized clinic presenting a firm nodule in the right subauricular region, consistent with an abscess, which progressed to ulceration approximately one month after its formation. For wound management, extensive trichotomy of the region was performed, followed by cleansing with saline solution (0.9%) and topical application of PHMB (0.1%) using a soaked gauze pad, which was kept in contact with the lesion for 10 minutes. Subsequently, the site was bandaged. This procedure was performed every 24 hours for seven days, in combination with oral

enrofloxacin (10 mg/kg/BID/7 days) and meloxicam (2 mg/kg/SID/4 days). PHMB is a synthetic substance with antibacterial, antifungal, and anti-inflammatory properties, and it acts by disrupting bacterial and fungal cell membranes and biofilms. To ensure its antimicrobial efficacy, a minimum contact time of 10 minutes on the lesion is recommended, allowing interaction with microbial cell membranes and effective local action. In addition to cleansing, PHMB accelerates healing by actively stimulating the proliferation of fibroblasts and keratinocytes, promoting neovascularization and the development of healthy granulation tissue, and stimulating wound closure and re-epithelialization. Although the average healing time in rats is 10 to 14 days for uninfected wounds, the topical use of PHMB, combined with systemic therapy, enabled complete healing within seven days of an ulcerated and infected wound in the patient in question. Furthermore, due to the substance's longer duration of action, dressing changes could be performed at 24-hour intervals rather than every 12 hours as with other topical treatments, resulting in less stress for the animal. It is concluded that the combination of PHMB with antibiotic therapy was effective in treating an infected wound in a twister rat, promoting infection control and healing within a short period. PHMB provided prolonged local action, allowing for longer intervals between dressing changes and reducing the frequency of restraint, a key factor in minimizing stress during handling.

INDEX TERMS: PHMB, infection, pet rat, rodent, wound.

Pulmonary papillary adenocarcinoma with ocular and lymphatic metastasis in a pet mouse (*Mus musculus*)

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Mus musculus is widely used as an experimental model in research due to its ease of handling, reproducibility, and well-established genetic mapping. An increasing use of this species as a companion animal has been observed, requiring greater attention to its clinical needs and diseases. Pulmonary neoplasms may affect small rodents, being most commonly observed as metastatic lesions, whereas primary pulmonary neoplasms are considered rare. Pulmonary papillary adenocarcinoma (PPA) is a malignant epithelial

neoplasm with papillary or acinar histological patterns. Macroscopically, it may be focal, multifocal, or diffuse, with a whitish to yellowish coloration, firm consistency, and adherence to the pulmonary parenchyma. This study aims to report a case of pulmonary papillary adenocarcinoma with ocular and lymph node metastasis in a 2-year-and-2-month-old mouse kept as a pet. The animal was initially presented to a Veterinary Hospital with a history of pruritus in the left ocular region, followed by edema and



exophthalmos. Enucleation was indicated for biopsy due to suspicion of an ocular neoplasm. However, the owner opted for conservative therapy, consisting of topical ophthalmic treatment (sodium carmellose, diclofenac sodium, and tobramycin) administered for seven days, resulting in partial improvement. Five months after the onset of clinical signs, the animal developed sneezing and episodes of nocturnal dyspnea. Supportive therapies were instituted, including a multivitamin supplement (Glicopan Gold), analgesia with gabapentin, and nebulization with saline solution for 30 days. Thoracic radiography was recommended but was not performed. At the last consultation, six months after the initial visit, the animal presented with severe dyspnea, prostration, and significant weight loss. It progressed to death during physical restraint for clinical evaluation and was submitted to the “Setor de Anatomia Patológica” (SAP) of the “Universidade Federal Rural do Rio de Janeiro” (UFRRJ). At necropsy, an encapsulated mass was observed in a pulmonary lobe. Histopathological examination revealed papillary structures lined by proliferating epithelial cells over a thin collagenous stroma. Neoplastic cells were also observed within blood and lymphatic vessel lumens, indicating vascular and lymphatic invasion. A similar

lesion was identified in the left intraorbital region, showing intense epithelial proliferation consistent with metastasis. Identical findings were observed in a lymph node involving the subcapsular region, confirming metastatic disease. The definitive diagnosis was pulmonary papillary adenocarcinoma with ocular and lymph node metastasis. This report highlights the challenges of in vivo diagnosis of pulmonary neoplasms in small rodents. The reduced body size of these animals, associated with the difficulty of performing high-resolution imaging, biopsy procedures, and other technical limitations, restricts early diagnosis and appropriate therapeutic intervention. Although infectious pneumonia is a common cause of dyspnea in these animals, neoplasms may mimic these clinical signs, making them important differential diagnoses for more accurate clinical management and prognosis. We conclude that pulmonary papillary adenocarcinoma with ocular and lymph node metastasis is an uncommon occurrence in a mouse, emphasizing the importance of necropsy and histopathological examination for definitive diagnosis, as well as the inclusion of this neoplasm in the differential diagnosis of respiratory and ocular clinical signs in small rodents.

INDEX TERMS: Mus musculus, pulmonary papillary adenocarcinoma, ocular metastasis, lymph node metastasis, histopathology.

Molecular detection of hemoplasma in free-ranging capybaras (*Hydrochoerus hydrochaeris*) from the Federal Rural University of Rio de Janeiro (UFRRJ)

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Hemotropic mycoplasmas (hemoplasmas) comprise an emerging/remerging bacterial group that attaches to red blood cells of several mammal's species, causing an impact on human and animal health. These microorganisms are small and pleomorphic, occurring as rod-shaped, spherical, or ring-shaped forms, either individually or in chains on the surface of erythrocytes. They are considered obligate epicellular parasites that localize within superficial depressions or deep invaginations of erythrocytes, inducing the production of autoantibodies associated with immune-mediated damage, as well as oxidative stress caused by free radicals that damage the cell membrane. Once the host is infected, hemoplasmas could induce acute hemolysis, and the disease is characterized by anorexia, lethargy, dehydration, weight loss, and occasionally death. Capybaras (*Hydrochoerus hydrochaeris*), the largest rodents in the world, are well adapted to live within close proximity to humans and are continuously linked

to conflicts in human-modified landscapes and to the spread of zoonotic pathogens. Therefore, monitoring the health status of capybaras is of public health concern. Accordingly, this study aimed to investigate the occurrence of hemoplasmas infecting free-ranging capybaras from the campus of “Universidade Federal Rural do Rio de Janeiro” (UFRRJ), southeast Brazil. Blood samples from 15 capybaras were collected, and packed cell volume and total plasma protein were measured by routine centrifugation and refractometry techniques, respectively. DNA was extracted, and polymerase chain reaction (PCR) targeting the 16S rRNA gene of the *Mycoplasma* genus was performed. Thirteen out of fifteen samples (86.66%) were considered positive based on the observation of bands of approximately 600 bp following electrophoresis on 1.5% agarose gel. None of the capybaras were anemic. This is the first evidence of a hemoplasma infection in free-ranging capybaras from the UFRRJ, highlighting this species

as a potential host of zoonotic agents. Additionally, further studies involving sequencing and phylogenetic analysis are needed to characterize the 16S rRNA gene

fragments and to elucidate their genetic relationship with previously described hemoplasma species.

INDEX TERMS: Hemotropic mycoplasmas, molecular diagnosis, wildlife, One Health, zoonoses.

Hepatic cirrhosis in a blue-fronted parrot (*Amazona aestiva*): a case report

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Hepatic cirrhosis represents the final stage of several chronic liver diseases. It is characterized by the progressive replacement of hepatic parenchyma by fibrous tissue, resulting in distortion of the lobular architecture and impairment of liver function. Although liver diseases are frequently observed in psittacine birds maintained under human care, reports of hepatic cirrhosis in *Amazona aestiva* remain uncommon. This case report describes the anatomopathological findings of an adult male blue-fronted Amazon parrot (*Amazona aestiva*) from a zoological institution in the state of Rio de Janeiro, Brazil. The bird was found recumbent in its enclosure and died despite emergency veterinary intervention. At necropsy, the liver was diffusely pale and showed grossly visible fibrotic changes. In this case report, fragments of multiple organs were collected during necropsy and submitted for histopathological and histochemical evaluation. Microscopically, marked periportal bridging fibrosis with fibroblast proliferation separating hepatic lobules was observed, associated with moderate lymphoplasmacytic infiltrates, hepatocellular megalocytosis, and biliary

duct hyperplasia with dysplastic features. Masson's trichrome stain demonstrated extensive collagen deposition, confirming the advanced stage of hepatic fibrosis. Gram and Ziehl-Neelsen stains were negative. The combination of hepatic lesions supported the diagnosis of hepatic cirrhosis. The presence of bridging fibrosis associated with hepatocellular megalocytosis and biliary duct alterations indicates a chronic and progressive hepatobiliary injury consistent with advanced liver disease. The hepatocellular megalocytosis observed in this case is compatible with long-standing chronic hepatocellular injury, although the specific etiology could not be determined. Although the etiology remained undetermined, chronic inflammatory processes, metabolic disorders, toxic injury, and hepatobiliary diseases are among the main causes of hepatic cirrhosis reported in psittacine birds. Considering the scarcity of reports of hepatic cirrhosis in *A. aestiva*, this case highlights the value of histopathology and histochemical techniques for the diagnosis of chronic liver diseases in psittacine birds.

INDEX TERMS: Veterinary pathology, blue-fronted parrot, hepatic cirrhosis, bridging fibrosis, hepatocellular megalocytosis, psittacine birds.

Therapeutic approach to traumatic brain injury in a rufous-thighed kite (*Harpagus diodon*)

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In Brazil, trauma represents the main cause of injuries in wild birds of prey treated in rehabilitation centers and specialized veterinary services. Among these conditions, traumatic brain injury (TBI) stands out, generally caused by vehicle collisions or impacts with buildings and windows. Proper therapeutic management is fundamental for recovery and reduction of irreversible damage. The objective of this study was to report a case of TBI in a rufous-thighed kite (*Harpagus diodon*), in which immediate rescue and

rapid intervention enabled the animal's recovery and release. An adult rufous-thighed kite, weighing 175 g and of unidentified sex, was found by the Cunhambebe State Park team after colliding with a glass window in a building. The animal was admitted to the specialized sector "Setor de Medicina e Conservação de Animais Selvagens" (SMAS) of the "Universidade Federal Rural do Rio de Janeiro" (UFRRJ) for therapeutic support, exhibiting depression, ataxia, stupor, dehydration, hyphema in the right eye, and reduced motor and sensory



reflexes. The immediate treatment protocol consisted of a single dose of 7.5% hypertonic saline solution (3 mL/kg) at a rate of 1.56 mL/hour for 20 minutes and fluid therapy with Ringer's lactate (17.5 mL/kg) at a rate of 0.4 mL/hour via the intraosseous (IO) route, tramadol hydrochloride (10 mg/kg) via the subcutaneous (SC) route, and oxygen therapy with the head elevated at 30°. During the first few days, tramadol (TID/3 days), fluid therapy and meloxicam (0.5 mg/kg/SID/2 days) were administered via the SC route. Food was initially offered by gavage, and the following tests were performed: blood tests (complete blood count and biochemistry) and radiography. Laboratory tests revealed an inflammatory process, and the radiograph showed no abnormalities. A 25-day treatment period was carried out prior to its transfer to the flight corridor. Fluid therapy with Ringer's lactate aimed to correct the estimated 10% dehydration. Its administration proved essential for treating the initial dehydration and preventing possible complications arising from the use of hypertonic saline solution during treatment, as this can worsen dehydration when used without adequate volume replacement. Hypertonic saline solution (7.5%) increases myocardial contractility and cardiac

output, substantially improves systemic pressure, has anti-inflammatory and free radical scavenging effects, reduces edema, promotes diuresis, and rapidly decreases intracranial pressure (ICP). Providing adequate analgesia is essential to prevent further increases in ICP. Therefore, tramadol was used, as opioids are frequently employed in critically ill patients due to their few adverse effects on the cardiovascular system and ease of reversal. Maintaining oxygen flow aims to meet the brain's metabolic demands, which is fundamental because any brain damage can lead to a state of hypoxia. Furthermore, positioning the head at 30° favors cerebral venous return and helps control intracranial pressure, promoting better cerebral oxygenation. Due to the adopted procedures, the last week consisted solely of the patient's physical and metabolic rehabilitation, which culminated in the bird's successful release. Emergency care combined with intensive support facilitated the recovery of the H. diodon affected by traumatic brain injury. As measures for hemodynamic stabilization, neurological support, analgesia, and physical rehabilitation were implemented, the patient achieved clinical recovery and was released after 29 days of treatment.

INDEX TERMS: Avian neurology, wildlife rehabilitation, cranial trauma, raptor management, intracranial pressure.

The use of intraosseous catheterization in blood transfusion and response time in *Amazona sp.*

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Blood transfusion remained infrequently used in wildlife medicine until recently, when it was gradually incorporated into clinical practice. Intraosseous access is an effective and stable route that can be used when intravenous access is limited, such as in small animals, vasoplegic patients, and those with reduced peripheral perfusion. The aim of this report was to describe the response to blood transfusion in a specimen of *Amazona aestiva*, correlating intraosseous access with hematocrit evolution. An adult blue-fronted Amazon parrot (*A. aestiva*), weighing 0.280 kg, was evaluated with a left periocular lesion, anorexia, diarrhea, hypoproteinemia, emaciation, weakness, and tarsometatarsal joint injury. Clinical examination revealed a low body condition score (1/5), an estimated dehydration of 10%, and suspected chlamydiosis. The first complete blood count revealed normocytic hypochromic anemia, with a hematocrit (Hct) of 21% and hemoglobin (Hb) concentration of 5.97 g/dL. The animal was hospitalized and received nutritional support via gavage with a hypercaloric supplement, analgesia with tramadol (10 mg/kg/SID), antibiotic therapy with enrofloxacin (10 mg/kg/SID), and fluid therapy with Lactated Ringer's solution at progressive rates of 50, 100, and 135 mL/

kg/24 h for 72 hours. However, the patient showed no clinical improvement. After a negative crossmatch test, homologous blood transfusion was performed via intraosseous access in the tibiotarsus. A total volume of 4 mL was administered over 120 minutes. The infusion followed a stepwise protocol: 0.5 mL/kg/h during the first 15 minutes (0.035 mL total), 2.5–5 mL/kg/h over the subsequent 30 minutes (0.35–0.70 mL total), and 5–10 mL/kg/h until completion of the transfusion period. At the end of the procedure, mild local bleeding occurred, which was rapidly controlled. After two days, a marked reduction in Hct and Hb values was observed (15% and 3 g/dL, respectively), with no evidence of hemolysis in the blood sample. Dexamethasone was administered (2 mg/kg/IM/SID/3 days). A gradual increase in erythrocyte values was observed on day 6 (Hct 27% and Hb 3.8 g/dL) and day 16 (Hct 49% and Hb 11 g/dL) after transfusion. The use of intraosseous access in avian species has been previously reported to allow rapid systemic distribution of fluids and blood products, due to physiological communication between the medullary cavity and systemic circulation. These characteristics support its use as an alternative route for transfusion when peripheral venous access is not

achievable. Intraosseous catheterization was chosen due to vasoplegia and inability to maintain a peripheral venous catheter. Avian physiological traits, such as high metabolic rate and unique erythrocyte kinetics, may influence transfusion dynamics and hematological responses. The progressive increase in hematocrit and hemoglobin suggests that intraosseous administration was effective in delivering blood components

systemically. The decrease in Hct and the observed hemorrhage may be explained by a possible hemolytic transfusion reaction and volume overload, respectively. Based on these findings, intraosseous access may be considered an alternative when venous catheterization is not feasible, requiring caution regarding infusion rate and patient monitoring.

INDEX TERMS: Critical care, psittacines, anemia, transfusion reactions.

Detection of *Pearsonema* spp. in wild mammals from Brazil: preliminary results and new host records

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Pearsonema spp. (syn. *Capillaria*, family *Capillaridae*) are capillarid nematodes that infect the urinary tract of wild and domestic carnivorous and omnivorous mammals, most commonly found in the urinary bladder and less frequently in the ureters and renal pelvis. Infection occurs through ingestion of infected earthworms (family *Lumbricidae*), and eggs are shed in urine after parasite maturation. The present study investigated the occurrence of *Pearsonema* sp. in wild mammals using urinalysis as a diagnostic tool. From March 2023 to December 2025, 39 urine samples were obtained from wild mammals under clinical care at the Veterinary Hospital of the “Universidade Federal Rural do Rio de Janeiro” (UFRRJ), including animals from wildlife rescue and rehabilitation contexts. Urine samples were preferentially collected by cystocentesis. Urinalysis included physical, chemical, and sediment evaluation. Positive samples were submitted to morphological and morphometric egg characterization by light microscopy and molecular analysis using PCR amplification of a partial 18S rRNA gene fragment (~620 bp), followed by sequencing. *Pearsonema* sp. eggs were detected in 10.3% (4/39) of samples, corresponding to two crab-eating raccoons (*Procyon cancrivorus*), one crab-eating fox (*Cerdocyon thous*), and one maned wolf (*Chrysocyon brachyurus*). To the authors’ knowledge, this represents the first report of *Pearsonema* sp. infection in *P. cancrivorus* and *C. thous*. Eggs were barrel-shaped, with a thick oval capsule, bioperculate with terminal plugs at both ends, dark brown in color, measuring $54.9\text{--}75.4 \times 22.4\text{--}39.1 \mu\text{m}$ (mean $64.1 \times 30.1/n = 45$). Urinalysis from positive samples revealed turbid yellow urine with specific gravity ranging from 1.037 to 1.056. Chemical analysis showed a pH between 5.0 and 6.0,

trace to mild proteinuria, and occasional hematuria, bacteriuria, crystalluria, and epithelial cells. No consistent urinalysis pattern associated with infection was observed; however, hematuria was detected in one crab-eating raccoon and should be interpreted cautiously due to cystocentesis, stress, or other urinary tract conditions. Morphometric variation among eggs may reflect intraspecific variability or distinct *Pearsonema* species, warranting further morphological and molecular investigations. PCR and sequencing were performed in two positive samples, providing molecular confirmation of *Pearsonema* sp. To date, no studies in Brazil have reported urinary tract helminths in live wild mammals using urinalysis. Most available data derive from post-mortem studies conducted in Europe, particularly in red foxes (*Vulpes vulpes*), where prevalence may reach 90.5%. Other reported hosts include wild carnivores such as the golden jackal (*Canis aureus*), beech marten (*Martes foina*), raccoon dog (*Nyctereutes procyonoides*), gray wolf (*Canis lupus*), brown bear (*Ursus arctos*), raccoon (*Procyon lotor*), and ocelot (*Leopardus pardalis*), as well as a maned wolf reported in Argentina. The detection of *Pearsonema* sp. in live wild mammals, including the first records in the crab-eating raccoon and crab-eating fox, supported by morphological and molecular data, highlights the epidemiological relevance of urinary capillariasis in Neotropical fauna and demonstrates that routine urinalysis may serve as a minimally invasive diagnostic tool in wildlife medicine. These preliminary findings expand current knowledge on *Pearsonema* infection in Brazilian wild mammals and reinforce the need for further epidemiological and molecular studies.

INDEX TERMS: Capillarid nematode, parasitological diagnosis, urinalysis, urinary tract, wild animals.

Ethical approval from Animal Ethics Committee (CEUA no. 6687020623) and Biodiversity Authorization and Information System (SISBio no. 99639-1).

Evisceration following exploratory celiotomy in an Argentine black and white tegu (*Salvator merianae*) and postoperative management: case report

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The Argentine black and white tegu (*Salvator merianae*) is a teiid lizard characterized by particular features, including ectothermy, scaly skin, and thin ventral musculature, which can influence surgical and postoperative management. In this context, exploratory celiotomy may be considered in selected reptilian medicine cases, although it is associated with potential complications such as suture dehiscence and evisceration. Thus, this study reports a case of post-celiotomy evisceration in a *Salvator merianae* and its subsequent surgical correction. A juvenile male tegu (1.435 kg) was presented with a lumbosacral lesion and caudal autotomy, characterized by systemic signs of necrosis, myiasis, lethargy, and dehydration. Ultrasonography revealed a penetrating coelomic wound, free fluid, and coelomitis. Therefore, an exploratory celiotomy was performed via a paramedian approach, revealing effusion, debris, and a hemorrhagic lesion with necrotic foci in the coelomic fat body adjacent to the perforation. For coelomic closure, the muscular edges were approximated and sutured in a Sultan pattern using 3-0 polydioxanone (PDS), and the skin was closed between the scales using a Wolf pattern. Postoperative management consisted of dipyrone (30 mg/kg, SC, SID for 18 days), morphine (7 mg/kg, SC, SID for 2 days), metronidazole (20 mg/kg, IV, SID for 16 days), ceftazidime (20 mg/kg, IV, q72h, 3 doses), fluid replacement therapy over 96 hours, wound care, bandaging, and assist-feeding, all of which required daily physical restraint. Twenty-one days postoperatively, ventral suture dehiscence occurred, resulting in evisceration of the intestinal loops; surgical intervention was performed for visceral lavage and internal repositioning. Upon closing the

cavity, the ventral abdominal vein (VAV) was accidentally perforated, requiring ligation. Subsequently, the cavity was closed uneventfully as previously described. The postoperative protocol was similar to the first, with the addition of tramadol hydrochloride (10 mg/kg, SC, q72h) and ketoprofen (2 mg/kg, SC, q48h). Post-procedure, the patient remained under clinical treatment and monitoring for approximately five months. The Wolf pattern was employed to counteract the inversion tendency of the scaly skin edges and facilitate tissue apposition, as recommended in the literature. However, the sluggish metabolism inherent to ectotherms delays wound healing. Furthermore, the ventral musculature of lizards is thin, making the skin a primary supportive structure during the postoperative period. Consequently, constant manipulation, combined with the absence of a diaphragm and struggling during daily restraint, may have increased intracoelomic pressure, placing excessive tension on the cutaneous suture and resulting in dehiscence. In addition, VAV laceration and ligation are major complications during lizard celiotomies, potentially causing ischemia and necrosis of the coelomic wall; however, the absence of these lesions in this case was likely due to collateral circulation and anastomoses maintaining tissue perfusion. This case report demonstrates that even when adhering to standard surgical protocols, the inherent anatomic and physiological traits of *Salvator merianae*, compounded by postoperative management, can trigger complications like dehiscence and evisceration. Consequently, accounting for these species-specific variables through recovery strategies that mitigate stress is critical to optimizing wound healing and preventing complications in reptiles.

INDEX TERMS: Intracoelomic pressure, dehiscence, ventral abdominal vein, wound healing, reptilian medicine, ectothermy.

Post-osteosynthesis osteomyelitis in *Ramphastos vitellinus* secondary to constrictive banding trauma

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Appropriate fracture management in birds is essential to prevent complications that compromise welfare and flight capacity. Avian skeletal adaptations, including bone reduction and fusion as well as pneumatic structures, confer lightness and mechanical strength. These features, combined with minimal soft tissue coverage, predispose birds to open fractures and increase the risk of infection. Intramedullary pinning is a common technique for fracture

stabilization and requires close postoperative monitoring. This report describes a case of osteomyelitis in a channel-billed toucan (*Ramphastos vitellinus*) following correction of a tarsometatarsal fracture using an intramedullary pin. An adult bird of undetermined sex from the "Zoológico de Volta Redonda" (ZOOVR) was referred to the "Setor de Medicina e Conservação de Animais Selvagens" (SMAS) of the "Universidade Federal Rural do Rio de Janeiro" (UFRRJ)

with a history of constrictive banding injury affecting the right pelvic limb. Physical examination revealed marked limb edema, an open fracture of the distal tarsometatarsus, and pain on manipulation. Initial treatment included enrofloxacin (15 mg/kg IM BID for 7 days), meloxicam (1 mg/kg IM SID for 4 days), tramadol (7 mg/kg IM/SC BID for 10 days), dipyrone (30 mg/kg IM/SC BID for 15 days), and fluid therapy (50 mL/kg SC SID for 10 days). Subsequently, surgical stabilization was performed using an intramedullary pin in the tarsometatarsus, with distal exposure of the implant. The patient remained clinically stable during hospitalization and was transferred for continued care at ZOOVR. Two months later, the bird returned to SMAS with impaired weight-bearing, distal necrosis of the fourth digit, and absence of deep pain perception. Radiographic findings were consistent with a presumptive diagnosis of osteomyelitis. A new therapeutic protocol was instituted, including enrofloxacin (15 mg/kg IM BID for 21 days), ceftriaxone (85 mg/kg IV BID for 21 days), tramadol (10 mg/kg IM/SC BID for 13 days), dipyrone (30 mg/kg IM/SC BID for 13 days), fluid therapy (50 mL/kg SC SID), and assisted nutritional support via gavage. Given the severity of the condition, amputation of the tibiotarsus at the distal diaphysis was performed.

Following surgery, the bird returned to ZOOVR for clinical follow-up with environmental adaptations to reduce overload of the contralateral limb. The development of osteomyelitis in birds may be associated with perioperative bacterial contamination and vascular compromise. In this case, the combination of band injury, bone exposure, and transcutaneous pin placement may have contributed to the development of infection. Improper banding is a relevant cause of traumatic injury in captive birds, leading to prolonged tissue compression, necrosis, and exposure of underlying structures, predisposing to secondary infections. Inadequate hygiene of exposed implants and improper wound care have been described as factors that may facilitate bacterial colonization. Therapeutic amputation represented an effective salvage procedure in this case. However, in Piciformes, functional consequences must be considered due to their saltatory locomotion, increasing reliance on the contralateral limb. Therefore, appropriate environmental management and long-term follow-up are essential. This case highlights the importance of strict postoperative monitoring in birds undergoing osteosynthesis, as species-specific functional demands necessitate long-term individualized care.

INDEX TERMS: Avian orthopedics, fractures, Piciformes, therapeutic amputation, wildlife medicine.

Management of a metallic sharp-pointed ventricular foreign body in a greylag goose (*Anser anser* Linnaeus, 1758): case report

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The greylag goose (*Anser anser*) is a herbivorous waterfowl from the Anseriformes order that, because of its foraging method, curiosity, and physiological need to ingest sand for mechanical digestion, favors the accidental ingestion of foreign bodies (FB) that can become lodged in the ventricle. The aim of this report was to describe the clinical and surgical management of a metallic ventricular foreign body in a greylag goose (*A. anser*). The patient presented with a 3-week history of lethargy, inappetence, diarrhea, and difficulty opening the rhamphotheca. Physical examination revealed severe dehydration, poor body condition, ptialism, and sternal recumbency. Radiography identified a 25.27 mm penetrating metallic FB at the ventriculus topography, and blood analysis indicated an active infectious and inflammatory process with renal impairment. After two days of clinical stabilization with fluid therapy, administration of metamizole, tramadol, enrofloxacin, metronidazole, sucralfate, and nutritional support, an upper endoscopy was performed, revealing ventriculitis, absence of an intraluminal foreign body, and a protrusion in the ventricular wall projecting into the ventricular lumen. Given the suspicion of an intramural foreign body, a left lateral laparotomy was performed to expose the ventricle, during which no signs of ventricular wall perforation or gastric content leakage were observed. To precisely locate the foreign body, intraoperative

radiography was necessary using guides made with hypodermic needles positioned around the ventricle. This technique allowed for the exact identification of the structure, enabling its removal through an incision in the ventricular wall. The object was forwarded for bacterial culture and antibiogram, isolating alpha-hemolytic *Streptococcus* spp., sensitive to an antibiotic already prescribed. Postoperative recovery was progressive, with spontaneous feeding and ambulation by day 6, and a normocytic hypochromic anemia responsive to parenteral iron hydroxide administration. On day 21, radiography revealed airsacculitis and pneumocoelom, so beclomethasone nebulization was incorporated into treatment, and caseous debris colonized by *Staphylococcus* spp. and *Candida* spp. were removed from the surgical wound. The surgical and secondary keel wounds were successfully managed with mechanical debridement, local antiseptics (polyhexamethylene biguanide – PHMB and calcium alginate), topical antimicrobials, and photobiomodulation. The patient was discharged after six weeks of hospitalization, presenting significant weight gain, normal droppings, and complete healing of both wounds. The initial treatment approach varies depending on the FB nature and severity, so in this case, patient stabilization was crucial before attempting endoscopy or surgery. Since the foreign body was encapsulated, metallic, and not



palpable during the surgical procedure, intraoperative radiography combined with guides made with hypodermic needles constituted an effective alternative to fluoroscopy, allowing precise localization, enabling a small incision in the ventricular wall, and reducing tissue trauma and surgical risks. Therapeutic success in these cases depends not only on the surgical intervention itself, but also

on the proper management of perioperative care. Key aspects include the importance of preoperative clinical stabilization of the patient, complementary examinations for precise localization of the foreign body, and intensive postoperative monitoring, allowing for early identification and appropriate management of possible complications.

INDEX TERMS: Anseriformes, avian radiography, avian surgery, endoscopy, gastrointestinal perforation, ventriculotomy.

Hemoparasites and hematological alterations in free-ranging anurans: insights from blood smear analysis

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Anurans play a fundamental role in ecosystems, serving as bioindicators of environmental changes. Despite their ecological importance, amphibian populations have experienced global declines due to climate change, habitat destruction, and the emergence of infectious diseases. Although hemoparasitic infections can increase host vulnerability, they remain poorly studied and comparatively neglected relative to other diseases affecting amphibians. Hematological evaluation of anurans through blood smear analysis constitutes an important and accessible tool for monitoring individual and population health, allowing the identification of cellular alterations as well as infectious and parasitic processes, particularly in small-bodied animals, for which blood volume is often insufficient for additional hematological analyses. The present study aimed to describe hematological alterations and the occurrence of hemoparasites in free-ranging anurans of different species through microscopic evaluation of blood smears. Blood smears from 53 anurans belonging to the species *Thoropa miliaris* (n = 36), *Leptodactylus latrans* (n = 6), *Leptodactylus fuscus* (n = 2), *Rhinella ornata* (n = 6), *Rhinella icterica* (n = 1), and *Dendropsophus bipunctatus* (n = 2) were analyzed. Blood samples were obtained by cardiac puncture following euthanasia with the anesthetic MS-222, performed as part of the preparation of voucher specimens for deposition in the Herpetological Collection of the “Laboratório de História Natural, Anatomia Comparada e Sistemática de Anfíbios” at the “Universidade Federal Rural do Rio de Janeiro” (UFRRJ). Blood smears were then fixed in methanol and stained with Giemsa. Subsequently, microscopic examination of the slides was performed at magnifications of 100×, 400×, and 1000× to identify hemoparasites and alterations in blood cell morphology.

Among the 53 blood smears analyzed, 19 (35.8%) were positive only for hemogregarines, 11 (20.7%) harbored only parasites of the genus *Trypanosoma*, five (9.4%) showed coinfection with *Trypanosoma* and hemogregarines, one (1.9%) presented microfilariae, whereas 17 (32.0%) were negative for hematozoa. Overall, 67.9% of the collected anurans were infected with at least one hemoparasite, occurring as either single or mixed infections and involving both intracellular and extracellular forms. In free-ranging animals or those inhabiting undisturbed environments, parasitic infestations generally do not result in significant clinical alterations; however, severe parasitism may be associated with anemia, characterized by a reduction in circulating erythrocyte mass and oxygen-carrying capacity. In addition to the hemoparasites described above, rounded intraerythrocytic inclusions of varying sizes, morphologically compatible with frog erythrocytic virus (FEV)-like bodies, were observed in four (7.5%) specimens. Morphological alterations in the erythroid series were also observed, including the presence of mitotic figures in circulating erythrocytes (7.5%) and anisocytosis and polychromasia (20.7%), findings suggestive of erythrocyte regeneration, characterized by the release of erythrocytes into the circulation in response to hemorrhage or destruction of red blood cells (hemolysis). The high prevalence of hemoparasites and the presence of FEV bodies, together with the microscopic findings of morphological cellular alterations, highlight the importance of hematological evaluation in anuran populations and underscore the need for further studies assessing the impact of infectious and parasitic agents on animal health and the ecosystem.

INDEX TERMS: Anurans, blood smear, hemogregarines, *Trypanosoma*, hematozoa, wildlife health.

Ethical approval from Biodiversity Authorization and Information System (SISBio no. 10689-1).

Treatment of otitis externa with minimal intervention in a polytraumatized *Cerdocyon thous* (crab-eating fox)

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Cerdocyon thous is a wild canid that faces threats from human activities, particularly habitat fragmentation, with roadkill being the primary source of trauma. They may be more susceptible to these accidents due to impaired sensory function, as seen in cases of otitis. Caring for wild carnivores with multiple injuries is a daily responsibility that can be stressful and risky. As a result, it is recommended to use therapeutic protocols that minimize the frequency of handling. This report outlines the management of otitis externa with minimal intervention in a polytraumatized *Cerdocyon thous*. A wild female, $\pm$ 2 years, 4.38 kg, was admitted to the "Setor de Medicina e Conservação de Animais Selvagens" at the "Universidade Federal Rural do Rio de Janeiro" (UFRRJ) Veterinary Hospital after a suspected road accident. She exhibited stupor, prostration, dyspnea, tachycardia, hypothermia (37.1 °C), dehydration (10%), poor peripheral perfusion, abdominal pain, hematuria, hematochezia, bilateral ulcerative otitis with purulent and hemorrhagic exudate, bilateral corneal ulcers, and anisocoria. Subcutaneous analgesia was provided using morphine (1 mg/kg) and dipyrone (30 mg/kg), in addition to fluid therapy (Ringer's lactate, 75 ml/kg) plus ketamine (5 mg/kg) and lidocaine (4 mg/kg), IV, for five days. The complete blood count showed leukocytosis, neutrophilia with a regenerative left shift, and monocytosis, while serum biochemistry showed high AST, ALT, and creatinine. Radiography suggested pulmonary contusion. Following stabilization, the animal was sedated using ketamine (5 mg/kg), dexmedetomidine (3 µg/kg), and morphine (0.5 mg/kg), IM. This allowed otoscopy and collection of an otological swab for bacterial culture (which tested

positive for *Staphylococcus* spp.), and the irrigation of the ear canals with saline and N-acetylcysteine (2%). Based on these, a treatment protocol was established consisting of amoxicillin (23 mg/kg), a vitamin-mineral supplement (Metacell®; 0.1 mg/kg), and dipyrone (30 mg/kg), administered with the diet (BID) for 20 days. Twelve days later, the ear canals still had cerumen and moisture, and the ulcers were covered with crust. Consequently, 1 mL of a formulation containing 2% N-acetylcysteine, 0.1% mometasone furoate, 0.35% ciprofloxacin, and Tris-EDTA was administered into the ear canals. Eight applications were performed (on days 0, 2, 4, 7, 11, 16, 18, and 23), with flexible intervals due to the animal's handling reactivity. Otoscopy confirmed the resolution of the otitis after 24 days. The blood count indicated inflammation or ongoing infection, typical in otitis. In cases of exudative otitis, otological lavage is essential to eliminate secretions and microbial biofilm. Literature reports solutions containing Tris-EDTA and N-acetylcysteine, but there are limited records of in vivo trials. In dogs, the treatment has been successful with application intervals of every 24 h for 7 days. The application of N-acetylcysteine and Tris-EDTA in topical treatments improves the penetration of the antimicrobial agent ciprofloxacin, demonstrates intrinsic antimicrobial activity, and breaks down bacterial biofilm. Although the treatment period was lengthy (24 days), this protocol demonstrated its viability for treating otitis in wild carnivores by reducing the stress associated with daily handling, physical restraint, and the dangers linked to frequent handling, all without affecting clinical success. This makes it a strategy that supports the welfare and rehabilitation of the species.

INDEX TERMS: Wild canid, otitis externa, polytrauma, animal welfare, *Staphylococcus* spp., minimal handling, Tris-EDTA, N-acetylcysteine.

A blood transfusion as a life-saving resource in *Amazona aestiva* with multiple clinical conditions

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Blood transfusion is indicated for severe anemia (Ht < 20% in birds), thrombocytopenia, hemoglobinemia, hypoproteinemia, and coagulopathies, and is used to restore volemia and stabilize the patient. A compatibility test is recommended, even in first-time transfusions. This paper reports the use of homologous blood transfusion

in a blue-fronted Amazon parrot (*Amazona aestiva*) with multiple clinical presentations. An adult *A. aestiva*, 280 g, was admitted with a tarsometatarsal joint and periorbital caseous lesion, severe anemia (5.17 g/dL hemoglobin and hematocrit 22%), hypoproteinemia, dehydration (10%), emaciation, weakness, sternal recumbency,

and dyspnea on restraint. Ascariidiasis was diagnosed on coproparasitological exam, and chlamydiosis was diagnosed by polymerase chain reaction (PCR) for *Chlamydophila psittaci*, which, because of its zoonotic potential, required strict biosafety. Initial treatment consisted of balanced fluid therapy with Ringer's lactate, with progressive adjustment until reaching the total replacement volume in 72 hours, using the following proportions: 50% (24 h), 75% (48 h), and 100% (72 h); analgesia with tramadol (10 mg/kg IM SID); enteral feeding by gavage with hypercaloric food; and supplementation with iron and B complex. Although clinical improvement was observed, hematological parameters remained compromised, prompting a homologous blood transfusion because the patient had a hematocrit of 21%, hemoglobin 3 g/dL, marked thrombocytopenia (7,000/ μ L), and persistent dyspnea and weakness. A healthy donor of the same species (350 g) from a Wildlife Triage Center was selected. The crossmatch test was negative, and the donor Ht was 49%. The transfusion volume was calculated according to methodologies described in the literature, and 4 mL of blood was collected into a heparinized syringe (5 IU/mL) from the donor's right jugular vein under isoflurane sedation. The infusion was performed via the intraosseous route in the left tibiotarsus over approximately 2 hours, with hemorrhage observed at the

sites of unsuccessful intraosseous access attempts (ulnae). After 48 hours, a repeat hemogram showed worsening hematological parameters to Ht 15% and Hb 3 g/dL, so dexamethasone was administered (2 mg/kg IM SID for 3 days). Satisfactory improvement was observed after three days: Ht rose to 27% and Hb to 3.8 g/dL. After 15 days, blood parameters normalized with Ht at 49% and Hb at 11 g/dL, concomitant with total proteins increasing from 2.4 g/dL to 5.4 g/dL and resolution of dyspnea, suggesting an effective hematopoietic response. It can be inferred that the initial Ht was masked by dehydration and that the drop after fluid therapy indicated the true picture of severe anemia. The intraosseous route allowed emergency catheterization; however, systemic absorption was not immediate, possibly due to low peripheral perfusion and possible transfusion reactions, which required the use of dexamethasone. Specific therapies for ascariidiasis, chlamydiosis, and the ocular condition were addressed sequentially after hemodynamic stabilization. After three months, the patient was discharged. The case demonstrates that blood transfusion, associated with compatibility testing and clinical monitoring for transfusion reactions, is a safe resource for critically ill birds, enabling increased survival for the establishment of a hierarchical therapeutic plan.

INDEX TERMS: *Amazona aestiva*, blood transfusion, anemia, *Chlamydophila psittaci*, critical care.

Continuous rate infusion of remifentanil for intraoperative analgesia in Amazon parrot (*Amazona aestiva*) undergoing squamous cell carcinoma excision: a case report

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The Amazon parrot (*Amazona aestiva*) is among the psittacine species most commonly presented to exotic animal practices in Brazil. Because avians often mask signs of pain, effective perioperative analgesic protocols are essential. Among opioids used in avian medicine, fentanyl administered as a continuous rate infusion (CRI) is the most extensively studied in psittacines. However, reports describing the use of remifentanil, an ultra-short-acting μ -opioid receptor agonist, remain scarce. Remifentanil undergoes rapid hydrolysis by nonspecific esterases, resulting in metabolism independent of hepatic and renal function. Additionally, it provides potent analgesia and reduces the minimum alveolar concentration (MAC) of inhalant anesthetics, characteristics that may be particularly advantageous in species with high metabolic rates. This report describes the use of remifentanil CRI as part of an intraoperative analgesic protocol in an Amazon parrot undergoing surgical excision of a squamous cell carcinoma. A 13-year-old male Amazon parrot weighing

398 g was evaluated at the "Setor de Animais Selvagens" of the "Hospital Veterinário de Pequenos Animais" of the "Universidade Federal Rural do Rio de Janeiro". Physical examination revealed an adequate body condition score, areas of feather-plucking-induced apteria, skin desquamation, and an extensive ulcerative lesion in the interscapular region. Based on clinical and cytological findings, a diagnosis of squamous cell carcinoma was established, and surgical excision was recommended. Preoperative hematological, biochemical, and cardiological assessments revealed no clinically relevant abnormalities. The patient was classified as American Society of Anesthesiologists (ASA) physical status II. Premedication consisted of intramuscular ketamine (2 mg/kg), midazolam (0.5 mg/kg), and morphine (0.5 mg/kg), resulting in satisfactory sedation within 10 minutes. Anesthesia was induced with isoflurane in 100% oxygen, initially via induction chamber and subsequently by face mask until a suitable anesthetic plane for orotracheal intubation was achieved using

a 2.0-mm uncuffed endotracheal tube. Anesthesia was maintained with isoflurane (1.2–1.8%) delivered through a Baraka breathing circuit with 100% oxygen at 1 L/min. Simultaneously, venous access was established via the right medial metatarsal vein, and a remifentanil CRI (12.5 µg/kg/h) was administered using a syringe pump. Physiological variables were monitored using a multiparameter monitor, with recordings obtained every five minutes. Heart rate ranged from 190 to 225 beats/min, respiratory rate from 18 to 25 breaths/min, systolic arterial pressure from 95 to 100 mmHg, cloacal temperature from 37.9 to 38.2 °C, and end-tidal carbon dioxide (EtCO₂) from 45 to 60 mmHg. The surgical procedure lasted 75 minutes and was completed without complications. Cardiovascular and ventilatory stability

were maintained throughout anesthesia. Recovery was smooth and uneventful, with the patient regaining consciousness within minutes after discontinuation of anesthetic administration. Postoperative analgesia consisted of meloxicam (0.5 mg/kg) and metamizole sodium (dipyrone) (25 mg/kg). The present findings suggest that remifentanil administered as a continuous rate infusion may represent a safe and effective option for intraoperative analgesia in psittacine, promoting adequate hemodynamic and ventilatory stability while allowing rapid anesthetic recovery. This case report contributes to the development of evidence-based analgesic protocols in avian medicine and supports the clinical applicability of remifentanil CRI in *A. aestiva*.

INDEX TERMS: Analgesia, remifentanil, continuous rate infusion, avian anesthesia, psittacine, *Amazona aestiva*.

Investigation of dermatophytes in mammals admitted to the Wildlife Rehabilitation Center (CRAS/Vargem Pequena): a One Health approach

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Dermatophytosis is the term given to cutaneous mycoses caused by filamentous keratinophilic fungi capable of degrading keratin present in skin, nails, hair, and hooves. Free-living animals admitted to “Centro de Reabilitação de Animais Silvestres” (CRAS) may become susceptible to colonization by dermatophyte fungi distinct from those circulating in their natural habitat, due to close contact with other animal species in these environments and to human handling. This concern is heightened when the animal becomes an asymptomatic or subclinical carrier; potentially transferring pathogens from the captive environment to the wild upon reintroduction. Given this context, the present study aimed to assess dermatophyte carrier status, symptomatic or not, among free-living mammals admitted to CRAS-Vargem Pequena. Skin scale and hair samples were collected using the sterile carpet technique, which consists of rubbing the material over suspected lesions and superficially scraping skin and hair across the animal’s entire body (face, periauricular region, back, tail, abdomen, and limbs). Samples were sent to the Veterinary Microbiology Laboratory at “Universidade Estácio de Sá” (UNESA), Vargem Pequena, for mycological culture on selective Sabouraud agar. After inoculation, plates were kept at room temperature for 21 days, with growth checked every two days. A total of 41 mammals admitted to CRAS-VP from August 2024 to May 2025 were sampled, comprising 29 black-eared opossums (*Didelphis aurita*, 70.7%), five Brazilian porcupines (***Coendou spinosus***, 12.2%), three marmosets (*Callithrix* sp., 7.3%), one brown-throated sloth (*Bradypus variegatus*, 2.4%), one South American coati (*Nasua nasua*, 2.4%), one capybara (*Hydrochoerus hydrochaeris*, 2.4%), and

one southern tamandua (*Tamandua tetradactyla*, 2.4%). On clinical evaluation, four animals (9.7%), all *D. aurita*, presented dermatological alterations, with alopecia being the most frequent finding. Despite fur cleaning prior to sample collection, intense growth of contaminant fungi was observed. Twelve samples exhibiting colonies compatible with dermatophyte characteristics (cottony appearance, white or cream coloration, flat colonies) were submitted to microscopic examination: aerial mycelium was transferred to a slide with lactophenol cotton blue, mounted with a coverslip, and examined under light microscopy at 40x magnification. Samples with uncertain results were subcultured for purification. None of the samples tested positive for dermatophytes; among the contaminant fungi identified, the most frequent genera were *Aspergillus* sp. and *Penicillium* sp. These results suggest that, among the animals evaluated, dermatophyte agents did not pose a relevant risk during the period of stay at CRAS-VP, as the observed dermatological alterations were not fungal in origin and were more likely associated with parasitic infestations and autoimmune conditions. These preliminary findings indicate that the sampled mammals did not act as asymptomatic dermatophyte reservoirs. However, the reduced sample size precludes generalization of these results to the broader population of animals treated at the institution, and further studies with larger sample sizes are needed to confirm this trend. Nonetheless, this study reinforces the importance of epidemiological surveillance as a tool to ensure that animal candidates for reintroduction are free of dermatophytes, thereby reducing the risk of pathogen introduction into the natural environment.

INDEX TERMS: Zoonosis, mycobiota, interspecies transmission, biosecurity, fauna conservation.



MOSTRA CULTURAL DE POEMAS E CORDÉIS

POEMAS

Todo Mundo é Assim: Célula Displásica.

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Eu tô cansada de ouvir
que todo mundo é assim.
Existo há 29 anos
e ninguém nunca foi igual a mim.

Tentando me inspirar em quem tira de letra,
sem ao menos entender
que precisava de muletas.

Se típica eu fosse,
o céu seria o limite.
Se cancerígena eu fosse,
o limite seria eu.

Mas, sendo como sou
nem lá, nem cá
é difícil me encaixar,
dependendo sempre do patologista
que está a me olhar.

Entre lâminas e critérios sutis,
aprendi que nem tudo é binário:
que o normal e o alterado coexistem
num intervalo interpretativo necessário.

Funcional demais pra ser neoplásica,
displásica demais pra ser normal.
E, no silêncio de um microscópio,
sempre doente no final.

Meus defeitos: histeria, má educação.
Mas o que nem eu sabia
era que pedia tradução.

Tradução pra ser quem sou:
torta e devagar,
como as células que fogem ao padrão
sem deixar de funcionar.

Como um laudo inconclusivo
que insiste em não fechar.



Pra deixar doer
até entender o que não me abandona,
sem ter que dividir espaço
com quem só olha e vai embora.

Porque, correndo machucada,
os tropeços só aumentam,
acumulando feridas que não cicatrizam,
que me desorganizam.

E, na imprevisibilidade do que posso ser,
tento caber nos diferenciais que me derem,
até que não sobre mais nada
e, enfim, eu tenha um nome.

O nome que agora todo mundo tem,
porque tudo virou displasia.

Se tanto não me custasse,
sem prejuízos,
eu caberia.

O Viajante Invisível

2. Barcelos ALR, Da Silva AF. *Pesquisa Veterinária Brasileira* 46(Supl.):109. Universidade Federal Rural do Rio de Janeiro, Rodovia BR-465 Km 7, Zona Rural, Seropédica, RJ 23890-000, Brasil. E-mail: analuisareis@ufrj.br

Em uma cidade invisível é onde habito,
me camuflando entre células e tecidos;
Numa viagem sigilosa pelos corpos faço-me presente,
reconhecendo ser o pavor de muita gente.

Sou pequeno, mas adaptado,
tenho ciclo de vida vasto e diversificado;
Nos felinos construo meu reinado,
mas em outras espécies também sou encontrado.

Atravesso águas, terras e alimentos,
em busca de um hospedeiro para alcançar;
Invisível aos olhos do mundo,
continuo meu ciclo sem parar.

Não sou vírus, fungo ou bactéria,
sou protozoário e não posso ser confundido;
Entre cistos, taquizoítos e oocistos,
meu legado jamais será esquecido.

Sou *Toxoplasma gondii* e isso você já deve saber,
pois por onde a vida caminha eu posso aparecer;
Me adapto aos organismos, encontro meios de viver,
silencioso em minha jornada, mas posso o mundo percorrer.



Medo que Cresce Lentamente

3. Da Silva KB, Guimarães A. *Pesquisa Veterinária Brasileira* 46(Supl.):110. Universidade Federal Rural do Rio de Janeiro, Rodovia BR-465 Km 7, Zona Rural, Seropédica, RJ 23890-000, Brasil. E-mail: karenbsvet@gmail.com

Pela fresta da porta
eu observo ele
com olhos inocentes,
como quem não tem ideia
da raiz que cresce dentro de si.

Bem pequenino, ele começa,
de maneira sutil, mal percebido,
e então se espalha
por suas partes moles,
se emaranha como uma rede,
sendo tecida fio a fio pela dor,
lento o suficiente para não o espantar,
veloz o bastante para negar o retorno.

Na lâmina ainda é bonito:
um mar de roxo infinito
que esconde a verdadeira face,
entre a beleza que brilha no corante
e a desolação de ver o fim,
em silêncio, a transbordar.

O laudo é um peso
que me arranca do chão,
rastros de tinta
que me inundam os olhos.
Visto através das lentes
em um mar de roxo,
na transparência do vidro
a sentença se revela:
é ali em você,
que o sarcoma faz morada.

E eu ainda observo
seus olhos inocentes,
agora marejados,
tentando decifrar um segredo:
se a dor é o fardo
que ele carrega calado
ou se sou eu
quem a tece no próprio medo.



CORDEL

A Arte da Medicina Integrativa Animal

1. De Almeida BG, Medeiros M. *Pesquisa Veterinária Brasileira* 46(Supl.):111. Universidade Federal Rural do Rio de Janeiro, Rodovia BR-465 Km 7, Zona Rural, Seropédica, RJ 23890-000, Brasil. E-mail: biancagomesmedvet@hotmail.com

No toque suave das
mãos que acolhem,
há cura que vai além
da dor.

Na medicina
integrativa floresce
o encontro entre
ciência e amor.

A laserterapia traz luz
ao caminho,
como o sol que
aquece ao
amanhecer,
aliviando feridas e
desconfortos,
fazendo o pequeno
paciente renascer.

Na acupuntura,
agulhas delicadas
despertam caminhos
de harmonia,
cada ponto é uma
ponte invisível
que devolve
esperança e alegria.

A fisioterapia ensina o
corpo
a lembrar de como
caminhar,
cada passo tímido de
um animalzinho
é uma vitória pronta
para encantar.

Há também o poder
das massagens,
do toque calmo, gentil
e sereno,
que acalma o coração
assustado
e transforma o
sofrimento em ameno.

Na hidroterapia, a



água abraça,
leve como um sonho
no mar,
ajudando músculos
cansados
a novamente se
fortalecer e brincar.

E enquanto muitos
veem apenas doença,
a medicina integrativa
enxerga além:
vê histórias, medos e

afetos,
vê vidas que sentem
também.

Porque animais não
falam palavras,
mas contam muito
com o olhar,
e cada cuidado cheio
de empatia
é uma forma bonita de
amar.

Integrar é cuidar por
inteiro,
é tratar corpo, mente
e emoção.
É lembrar que toda
vida merece
respeito, dignidade e
proteção.

MOSTRA CULTURAL DE FOTOGRAFIAS

Título: Colossal pyometra in a female dog

Autores: Ana Paula Alves dos Reis, Bruno Gerônimo Malpelli

Instituição: Universidade Federal Rural do Rio de Janeiro (UFRRJ)

Data: 26 de setembro de 2026

Local: Hospital Veterinário de Pequenos Animais da UFRRJ, Seropédica/RJ, Brasil

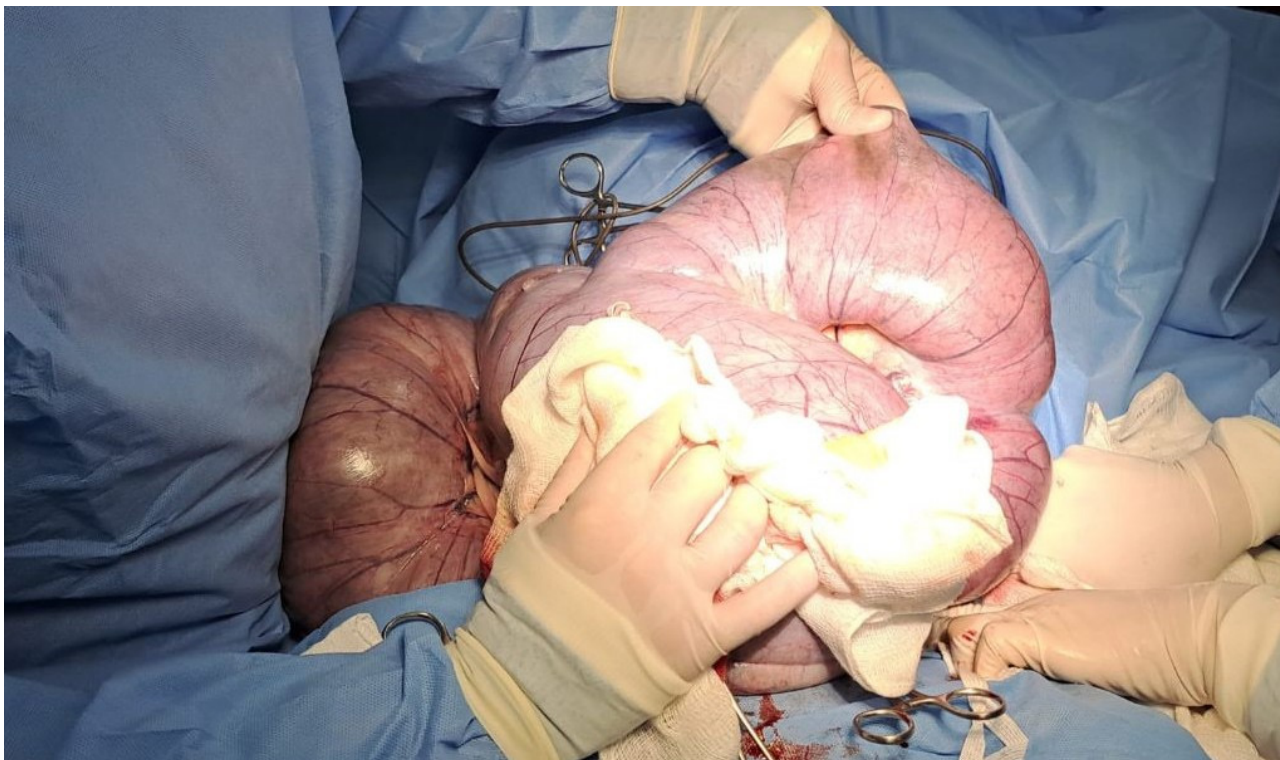


Fig. 1. Ovariohysterectomy performed as an intervention for uterine infection in a canine patient, mixed-breed, weighing 27 kg. A severely enlarged uterus was observed, with a thickened wall and filled with purulent exudate, weighing 11 kg.

Título: Stray dog (*Canis familiaris*) attempting to access bait inside a Tomahawk trap set for wild mammal capture at Viveiro Florestal, UFRRJ campus

Autores: Beatriz Pereira Coelho, Anna Elisa Athayde-Gusmão, Andressa Ferreira da Silva

Instituição: Universidade Federal Rural do Rio de Janeiro (UFRRJ)

Data: 18 de novembro de 2025

Local: Viveiro Florestal Fernando Luiz Oliveira Capellão, Rua U, Vila dos Professores, Fazenda Caxias, Seropédica/RJ, Brasil

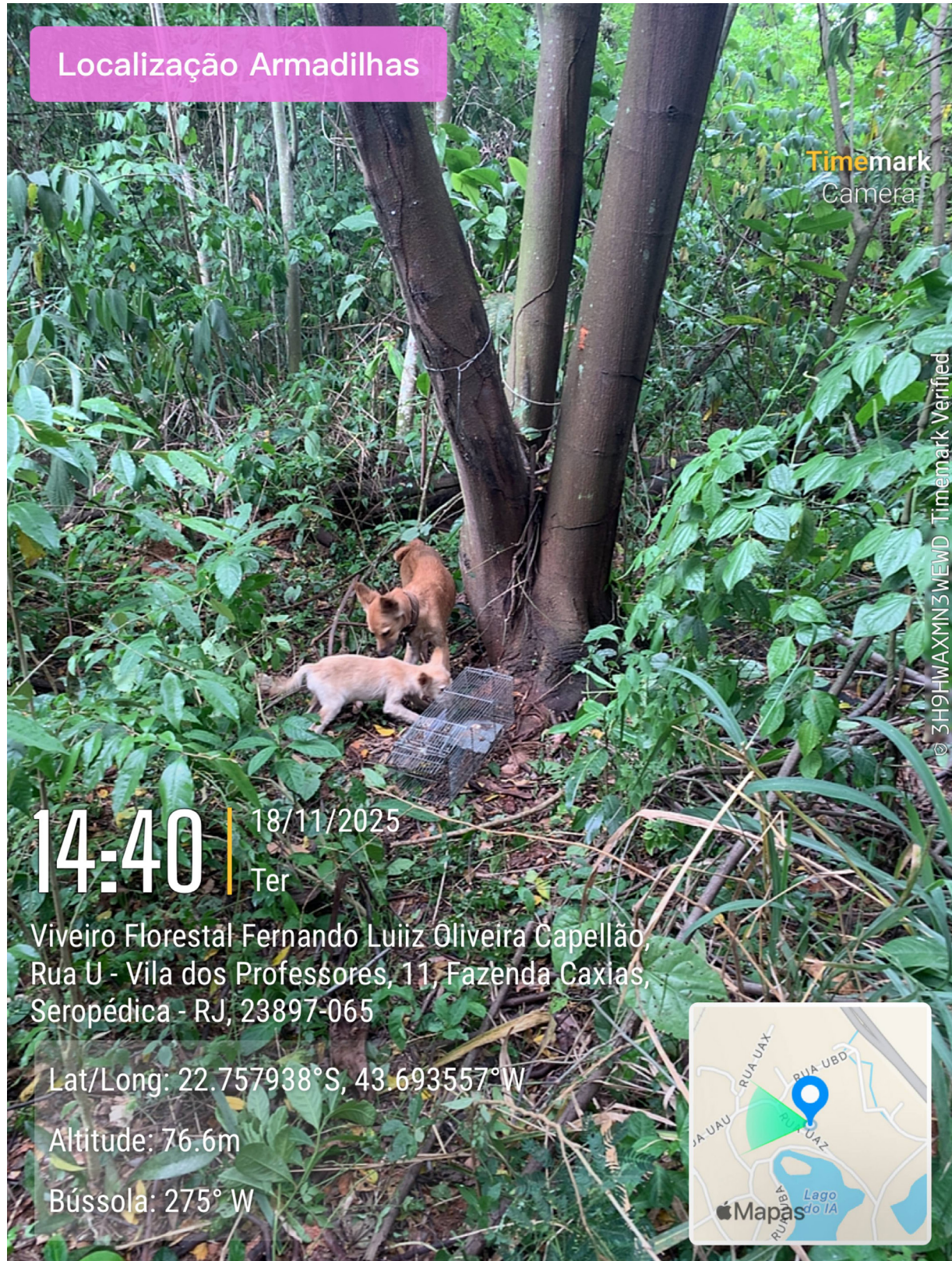


Fig. 2. This image documents the Interface between domestic and wild animals, relevant to *Toxoplasma gondii* circulation studies.

Título: Oral examination of dental malocclusion in a guinea pig
Autores: Bianca Gomes de Almeida, Cristiano Chaves Pessoa da Veiga
Instituição: Universidade Federal Rural do Rio de Janeiro (UFRRJ)
Data: 18 de março de 2026
Local: Clínica Veterinária Beneveti, Rio de Janeiro/RJ, Brasil.



Fig. 3. Highlighting the importance of thorough oral examination in veterinary medicine for the early diagnosis of dental disease, improving animal welfare and treatment outcomes.

Título: Sentinels of an ecosystem at risk

Autores: Karen Máximo de Paula, Andressa Ferreira da Silva

Instituição: Universidade Federal Rural do Rio de Janeiro (UFRRJ)

Data: 25 de maio de 2026

Local: “Ilha dos Gatos”, Costa Verde, Mangaritiba/RJ, Brasil



Fig. 4. On the edge of the coast, these cats represent more than abandonment: they reflect a problem that impacts ecosystems, public health, and biodiversity.

Título: Three nuclei, one cell

Autores: Marcos Roberto B. Freitas, Andresa Guimarães

Instituição: Universidade Federal Rural do Rio de Janeiro (UFRRJ)

Data: 25 de maio de 2026

Local: Laboratório de Patologia Clínica Veterinária da UFRRJ, Seropédica/RJ, Brasil

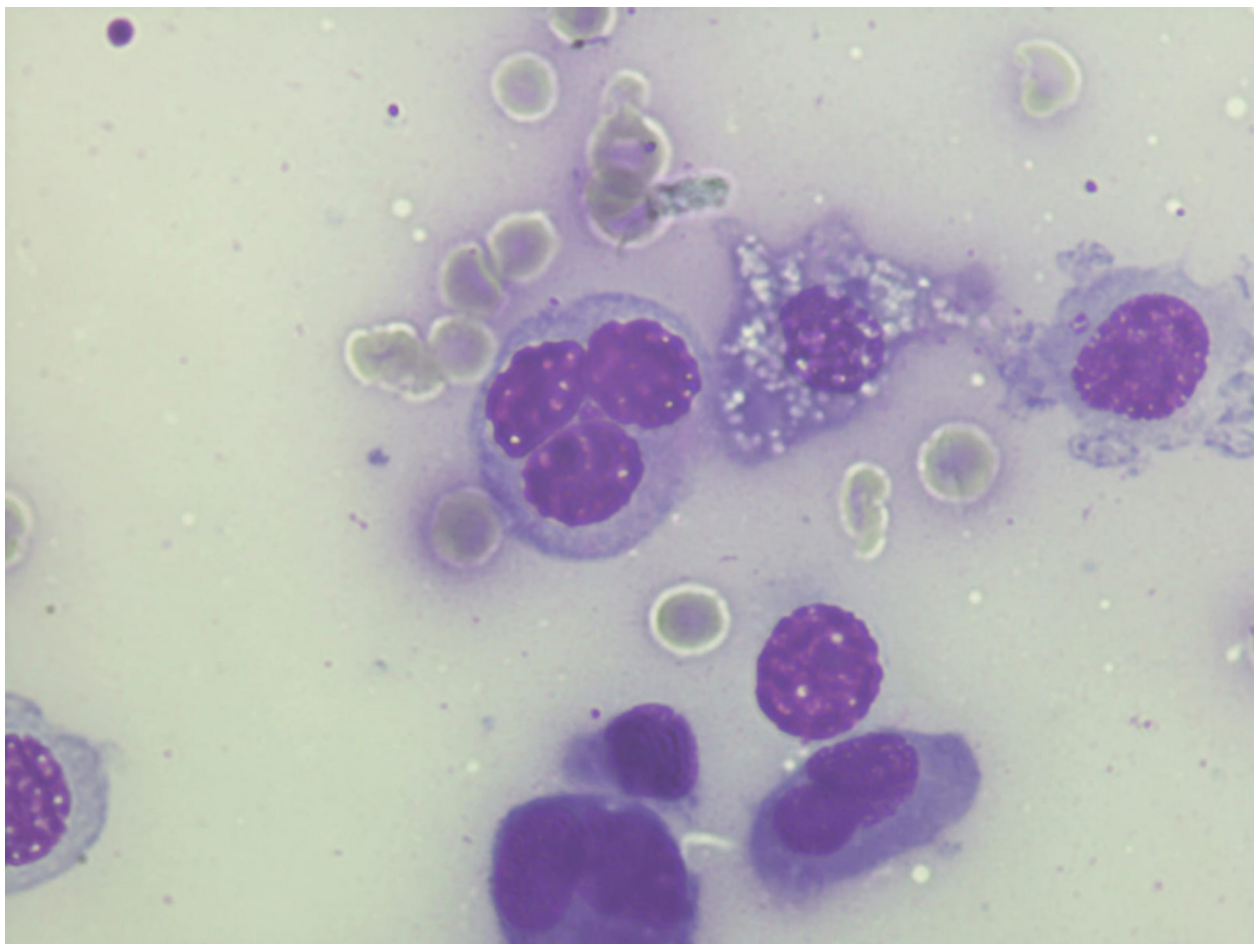


Fig. 5. Multinucleated cell with three nuclei in a cytopathological sample from a nodule in the cephalic region of a dog, diagnosed as a poorly differentiated round cell neoplasm. Rapid panoptic stain, obj. 100x.

Título: Buffy coat eosinophilia in a dog

Autores: Vinicio Cascardo, Andresa Guimarães

Instituição: Universidade Federal Rural do Rio de Janeiro (UFRRJ)

Data: 4 de setembro de 2025

Local: Laboratório de Patologia Clínica Veterinária da UFRRJ, Seropédica/RJ, Brasil

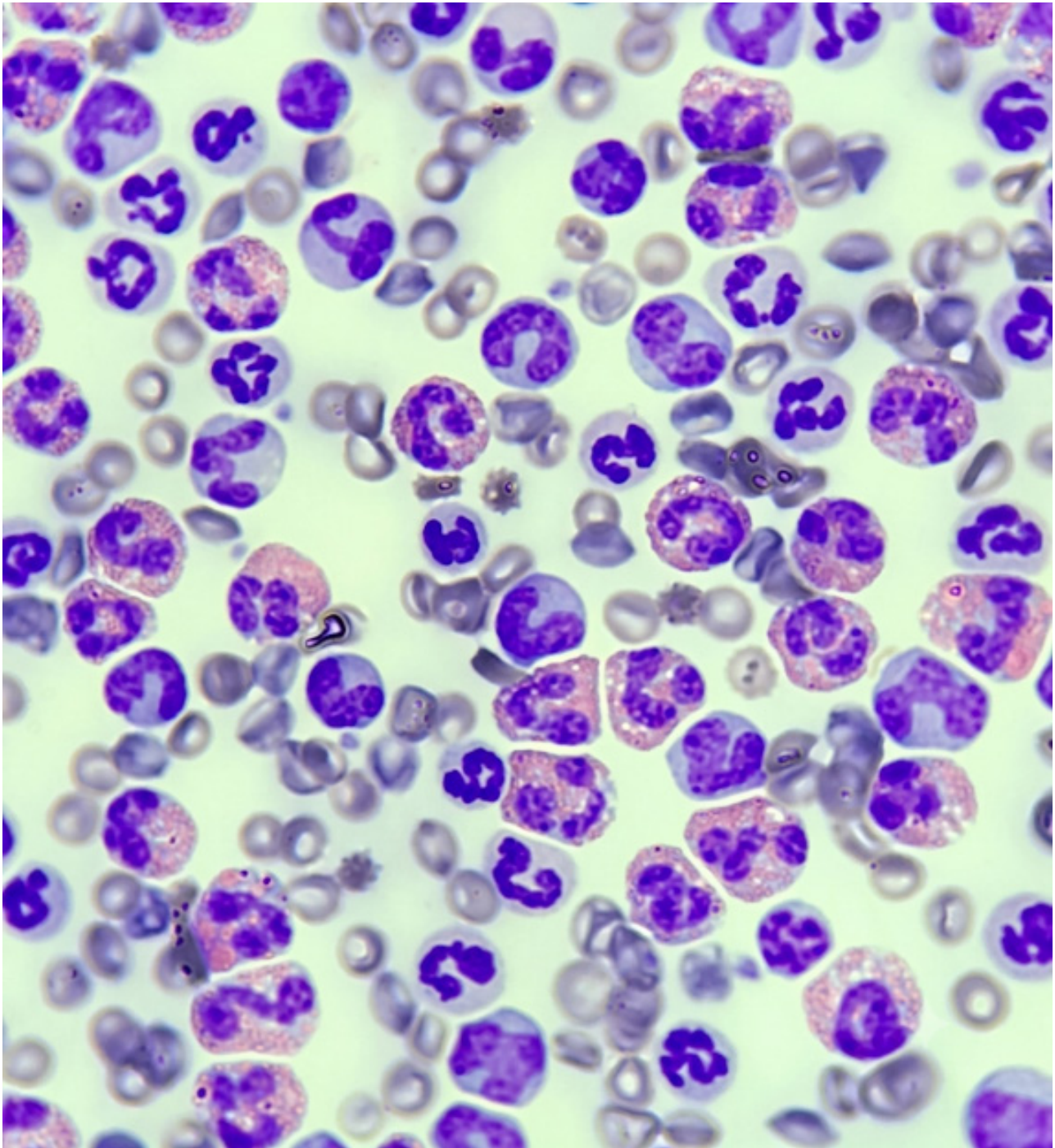


Fig. 6. Buffy coat blood smear from a dog showing eosinophil predominance among leukocytes, with neutrophils, monocytes and lymphocytes also present among erythrocytes. Rapid panoptic stain, oil immersion, obj. 100x.

Título: Spoonbill life stages

Autores: Guilherme Silva Braga

Instituição: Universidade Federal Rural do Rio de Janeiro (UFRRJ)

Data: 16 de junho de 2025

Local: Universidade Federal Rural do Rio de Janeiro (UFRRJ), Seropédica/RJ, Brasil



Fig. 7. *Platalea ajaja* plumage reflects age maturation: white (juvenile), pale pink (subadult), and bright pink (adult). The lake's ecology supports all developmental stages.

Título: Guardião microscópico

Autores: Renata da Silva Pereira Ormond, Andresa Guimarães

Instituição: Universidade Federal Rural do Rio de Janeiro (UFRRJ)

Data: 3 de junho de 2026

Local: Laboratório de Patologia Clínica Veterinária da UFRRJ, Seropédica/RJ, Brasil

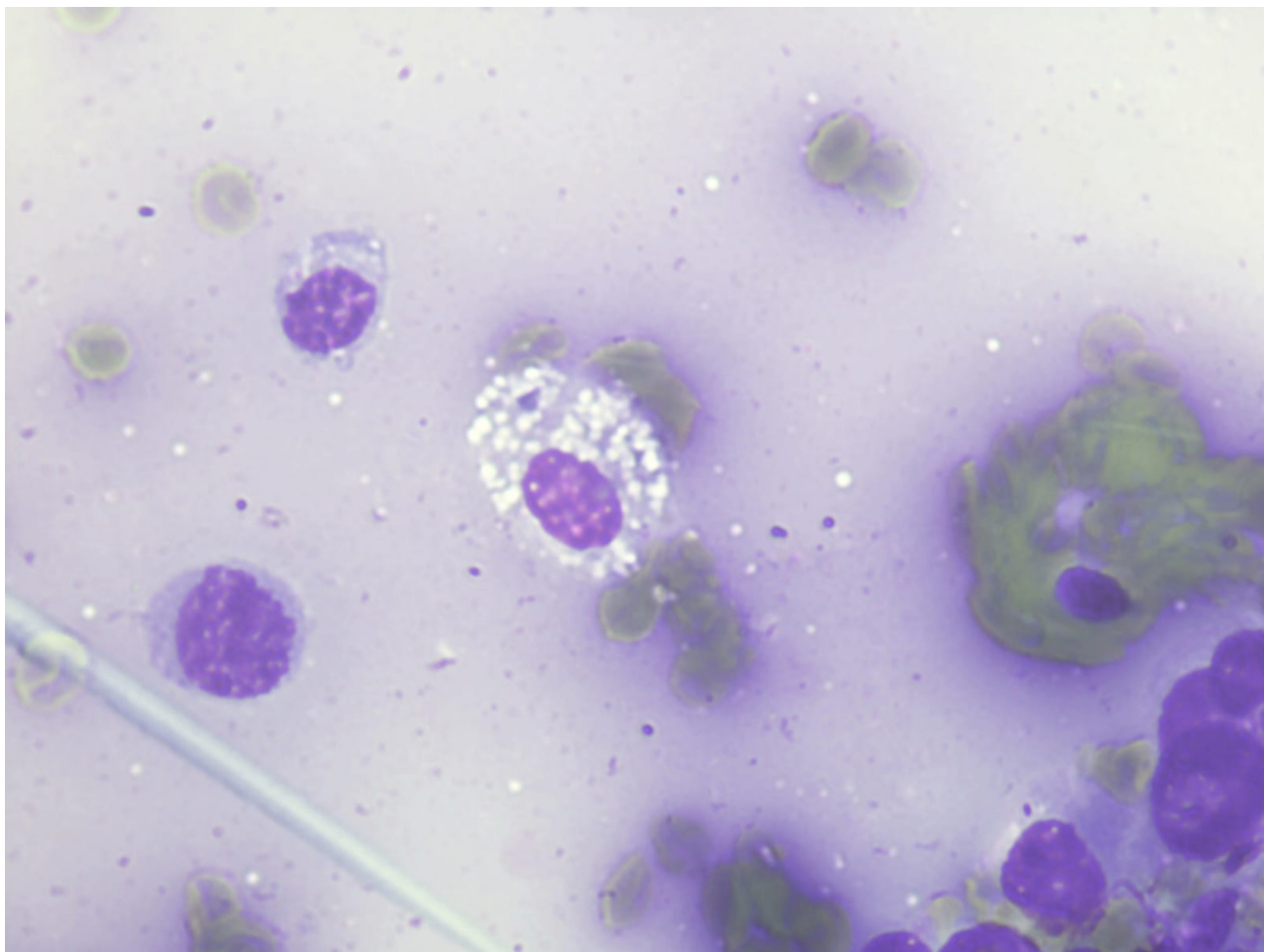


Fig. 8. Macrophage observed in a cytopathological sample from a nodule on the left forelimb of a dog, diagnosed as a poorly differentiated round cell neoplasm associated with an inflammatory process. The cytoplasm contains multiple vacuoles and cellular debris. Rapid panoptic stain, obj. 100x.

MOSTRA CULTURAL DE ARTES DIGITAIS

Título: Toxoplasmosis and pregnancy: separating myths from evidence

Autores: Bianca Gomes de Almeida, Andressa Ferreira da Silva

Instituição: Universidade Federal Rural do Rio de Janeiro (UFRRJ)

Data: 21 de junho de 2026

Local: Seropédica/RJ, Brasil



Fig. 1. Educational digital illustration addressing common misconceptions about toxoplasmosis during pregnancy. The image contrasts risk factors, including exposure to contaminated soil, raw or undercooked meat, and improper litter box hygiene, with preventive measures such as handwashing, proper food preparation, and safe cat care. The central cat symbolizes that responsible pet ownership and hygiene practices can minimize the risk of *Toxoplasma gondii* infection during pregnancy. Software: ChatGPT.

Título: The steps until the end

Autores: Karen Barcellos Silva, Andresa Guimarães

Instituição: Universidade Federal Rural do Rio de Janeiro (UFRRJ)

Data: 21 de junho de 2026

Local: Rio de Janeiro/RJ, Brasil

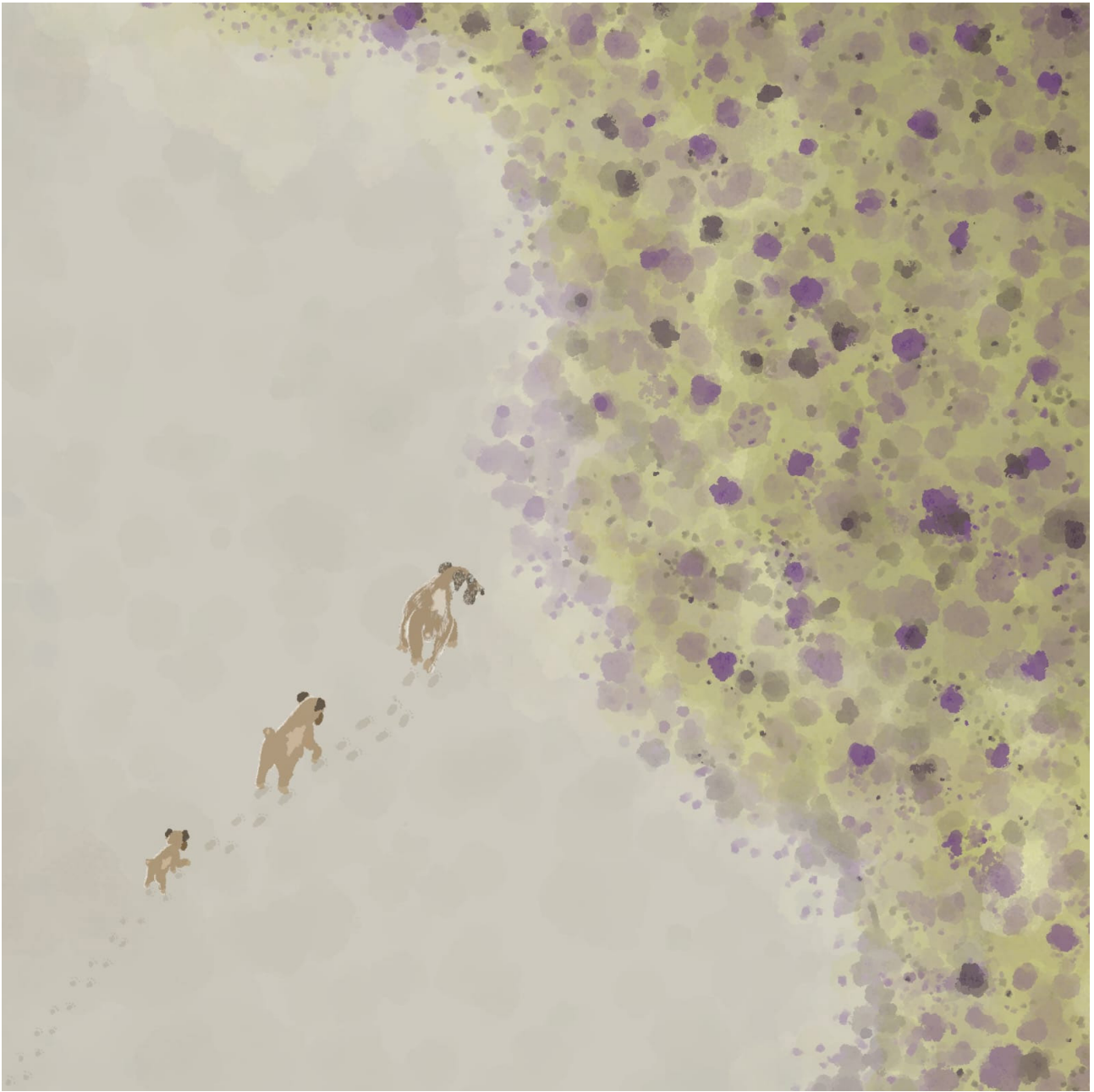


Fig. 2. Depicting a Boxer's aging arc where senility marks the peak period for sarcomas. Highlighting breed susceptibility and infiltrative behavior, the art portrays the clinical path toward a late-life mesenchymal neoplasm diagnosis.

Título: Asymmetric lumbosacral transitional vertebra

Autores: Edmilla Pastor Marquez, Hélio José Santos Bagetti Filho

Instituição: Universidade Federal Rural do Rio de Janeiro (UFRRJ)

Data: 10 de janeiro de 2026

Local: Niterói/RJ, Brasil

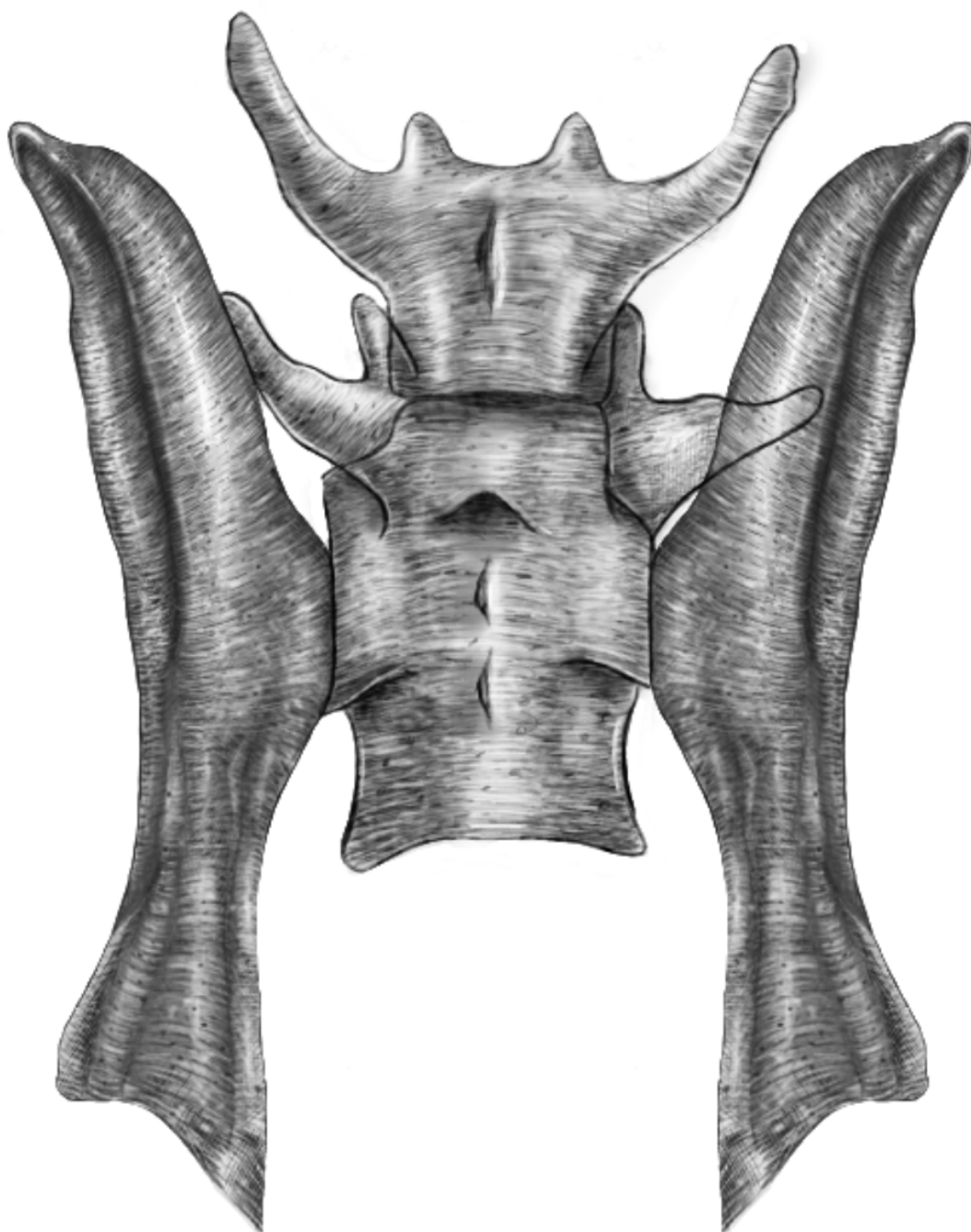


Fig. 3. Asymmetric lumbosacral transitional vertebra (LSTV) in a dog, demonstrating the relationship between the transverse process of the LSTV and the ilium.

MOSTRA CULTURAL DE ARTES PLÁSTICAS

Título: Hidden risks beneath the soil: exposure to *Toxoplasma gondii*

Autores: Bianca Gomes de Almeida, Andressa Ferreira da Silva

Instituição: Universidade Federal Rural do Rio de Janeiro (UFRRJ)

Data: 21 de junho de 2026

Local: Tomás Coelho/RJ, Brasil



Fig. 1. This artwork highlights the hidden risk of acquiring *Toxoplasma gondii* through contact with contaminated soil. The emerging hand symbolizes unrecognized exposure during routine activities, drawing attention to environmental transmission pathways and the importance of preventive measures against toxoplasmosis.

Título: Feline cerebral arterial circulation

Autores: Letícia Victal Pereira

Instituição: Universidade Federal Rural do Rio de Janeiro (UFRRJ)

Data: 2026

Local: Seropédica/RJ, Brasil

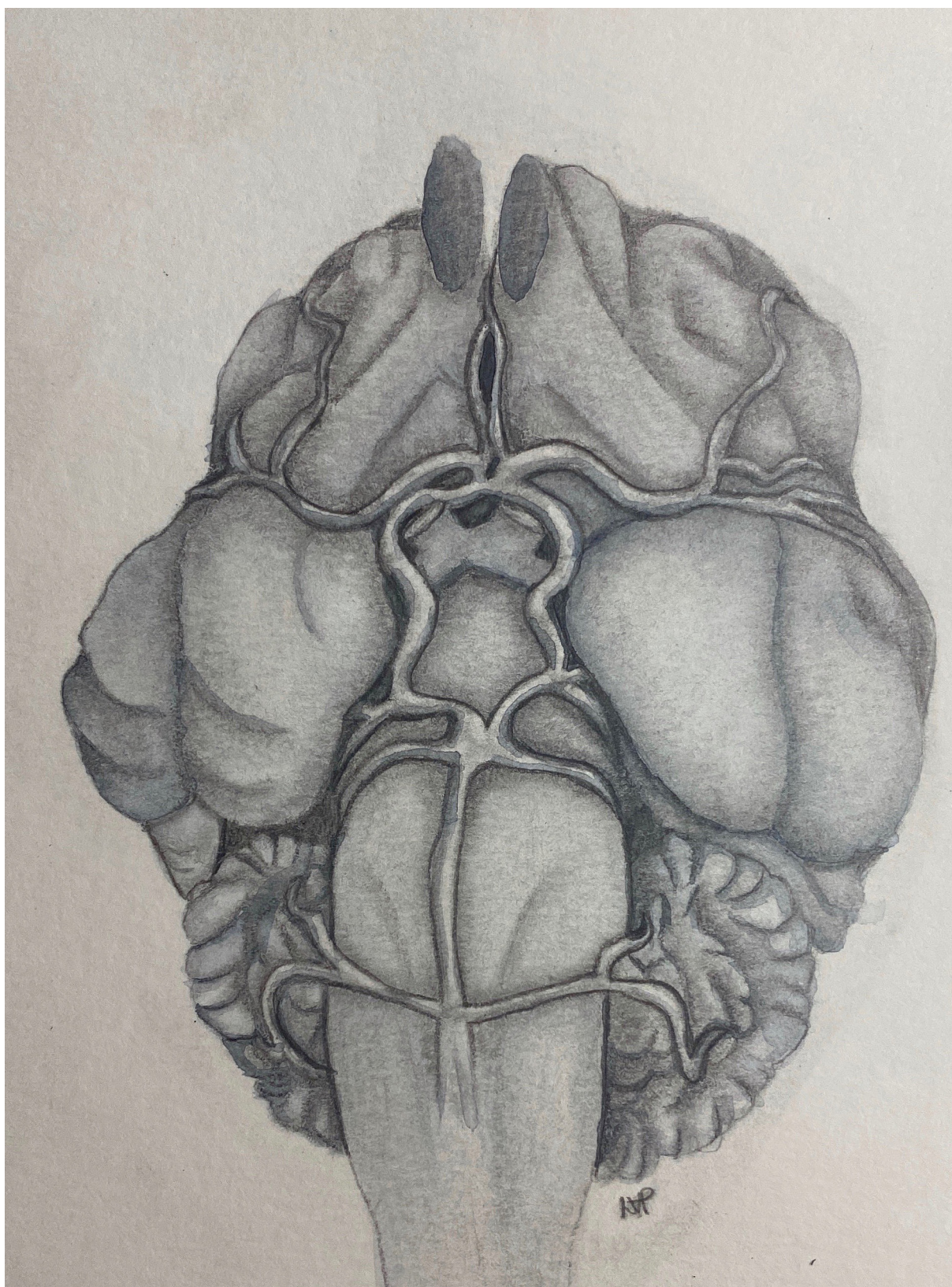


Fig. 2. Scientific illustration in watercolor on paper. The painting was created using a monochromatic watercolor technique, employing different tonal values of the same color, combined with graphite. The image depicts the anatomy of the feline brain in a ventral view, emphasizing the arterial circulation at the base of the brain.



MOSTRA CULTURAL DE VÍDEOS/ANIMAÇÕES

Título: Veterinary beyond the diploma

Autores: Bianca Gomes de Almeida, Cristiano Chaves Pessoa da Veiga

Instituição: Universidade Federal Rural do Rio de Janeiro (UFRRJ)

Data: 21 de junho 2026

Local: Seropédica/RJ, Brasil

<https://youtu.be/ohbnaSoNPBM>

Vídeo 1. “Veterinary song beyond the diploma” celebrates the dedication, compassion, and impact of veterinary professionals beyond academic achievement.

Título: Cat Island: when animal abandonment becomes a One Health issue

Autores: Karen Máximo de Paula, Andressa Ferreira da Silva

Instituição: Universidade Federal Rural do Rio de Janeiro (UFRRJ)

Data: 27 de maio de 2026

Local: “Ilha dos Gatos”, Costa Verde, Mangaratiba/RJ, Brasil

<https://youtube.com/shorts/kVLexAul2Ps?feature=share>

Vídeo 2. The Cat Island, in Mangaratiba (RJ), shelters hundreds of abandoned felines and has become an important warning about the impacts of animal abandonment. Beyond the challenges faced by these animals, the presence of toxoplasmosis and its agent, *Toxoplasma gondii*, highlights risks to public health, marine wildlife, and the environment, reinforcing the importance of the One Health approach.

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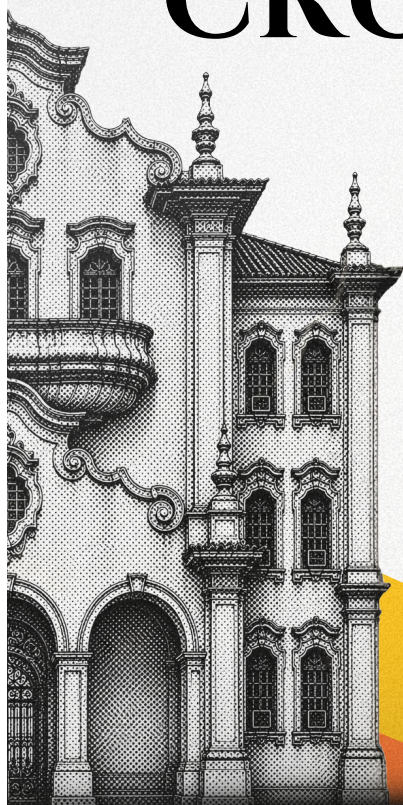


IX SAMVET

SEMANA ACADÊMICA DA PÓS-GRADUAÇÃO EM MEDICINA VETERINÁRIA

CRONOGRAMA

@PPGMVUFRRJ



P1 UNIVERSIDADE FEDERAL
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CAMPUS SEROPÉDICA, BR-465,
KM 7 • SEROPÉDICA • RJ



DE 17 A
19 DE
AGO
DE 2026



DE 08H ÀS
17H COFFEE
BREAK
INCLUSO



Programa de
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IX SAMVET: Semana Acadêmica da Pós-Graduação em Medicina Veterinária

7h30
8h30

Salão Azul: Recepção de boas-vindas
Sala SOC: Instalação dos posters e Mostra Cultural

8h30
9h30

Endourologia e sua aplicabilidade prática na clínica de pequenos animais
Carlos Eduardo Cotias Netto

9h30
10h

Trabalhos Orais
| **Carla Ventura** | Monoclonality by PARR in a reactive lymph node of a dog
| **Ana Barreto** | Use of Posaconazole and intralesional Amphotericin B as treatment of atypical aggressive cryptococcal infection in a domestic cat
| **Carolina Caetano** | Use of frunevetmab in a domestic cat with diabetic neuropathy: a case report

10h
10h30

Coffee Break
Apresentação de posters

10h30
10h45

Espaço Empresarial
VETNIL

10h45
11h30

Inovações em Anestesiologia e Cirurgia Veterinária
Yuri Karaccas de Carvalho

13h
13h20

Solenidade SAMVet.SIMVet no Mercosul
Luis Alejos (ProPPGI); Maria Barbosa (ProPEXT); Fernando Queiroz / Andressa Ferreira (PPGMV); Lamounier Villela (PPGCTIA); Rodrigo Vasconcelos (PGCA)

13h20
14h10

Integração da Med. Veterinária e Interdisciplinaridade no Mercosul Coordenação PPGCTIA UFRRJ/ UNRC

14h10
14h40

Triagem alérgica do prurido em cães
Débora Moraes Marques

14h40
15h10

Trabalhos Orais
| **Victor Andrade** | Endophthalmitis associated with *Sporothrix schenckii* infection in a dog: a case report
| **Lohanna Ribeiro** | Congenital hypothyroidism in a cat with maintenance of euthyroidism after levothyroxine discontinuation - Case report
| **Gabriella Giglio** | Impact of Ethylenediaminetetraacetic Acid (EDTA)-Induced Hemodilution on Canine Hematocrit Determined by Microcentrifugation and Automated Impedance Analysis

15h10
15h40

Coffee Break
Apresentação de posters

15h40
15h50

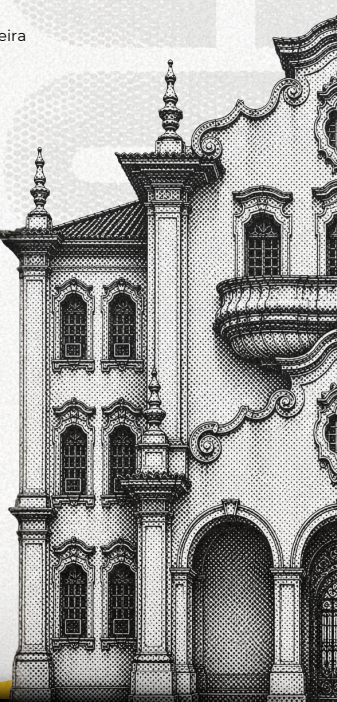
Espaço Empresarial
BOEHRINGER

15h50
16h20

Teste PARR: Quando e como usar na prática diagnóstica
Carla Beatriz Ventura Leite

16h20
17h

Atualizações no tratamento das fraturas pélvicas em gatos
Iara Oliveira Valério dos Santos



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7h30

8h

8h

8h40

8h40

9h10

Trabalhos Orais

| **Yasmin Martins** | Six-minute walk test in dogs with myxomatous mitral valve disease: preliminary findings from ten cases
| **Kamila Firmino** | Comparison between Vet Blue findings and thoracic radiography in dogs with respiratory disease: a retrospective study
| **Ana Letícia Biage** | Clinical and radiographic profile of cats with suspected or confirmed feline asthma a retrospective study

9h40

10h

10h

10h15

10h15

11h30

13h

14h

14h

14h30

14h30

15h

15h

15h30

15h30

15h45

15h45

16h30

16h30

17h

Salão Azul: Recepção e credenciais (Salão Azul, Prédio 1)

Sala SOC: Instalação dos posters e Mostra Cultural

Onde está o problema no pulmão ou no coração?

Mário dos Santos Filho UNIVASSOURAS

Além do Teste Rápido - achados clínicos e hematológicos na dirofilariose Diana do Amaral Mendonça UFRJ

Trabalhos Orais

| **Yasmin Martins** | Six-minute walk test in dogs with myxomatous mitral valve disease: preliminary findings from ten cases
| **Kamila Firmino** | Comparison between Vet Blue findings and thoracic radiography in dogs with respiratory disease: a retrospective study
| **Ana Letícia Biage** | Clinical and radiographic profile of cats with suspected or confirmed feline asthma a retrospective study

Coffee Break

Apresentação de posters

Espaço Empresarial

BIOGÊNESIS 

Patologia e patogênese do carcinoma de células escamosas em ruminantes

Luis Jhordy Alfaro Quillas UFRJ

Manifestações pulmonares de afecções sistêmicas

Mário dos Santos Filho UNIVASSOURAS

Trabalhos Orais

| **Diana Mendonça** | Evaluation of heart rate variability and cardiac rhythm in dogs with chronic bronchitis and mitral valve disease treated with aminophylline using 24-hour holter monitoring
| **Ana Cesar** | Effects of Rhipicephalus microplus Infestation on Follicular Dynamics in Beef Cows
| **Vinício Cascardo** | Molecular survey of haemosporidian parasites in raptors from Rio de Janeiro, Brazil

Coffee Break

Apresentação de posters

Exposição Cultural

Apresentação de artes

Espaço Empresarial

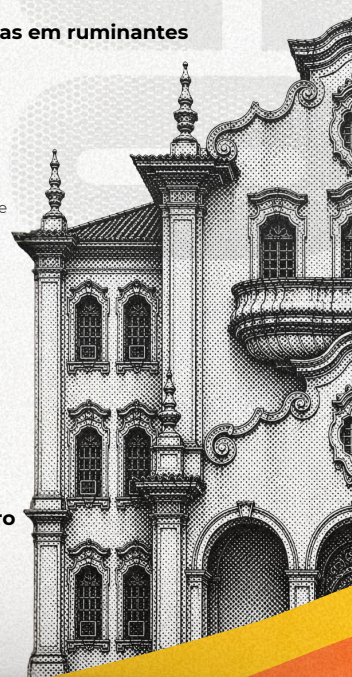
BOEHRINGER 

Palestra Magna: Cardiologia Veterinária | Lançamento Livro

Alexandre Bendas & Bruno Alberigi UFRJ

PPGMV | 20 anos de história

Homenagens a docentes e egressos



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IX SAMVET: Semana Acadêmica da Pós-Graduação em Medicina Veterinária

7h30

8h

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9h10

9h10

9h40

9h40

10h

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10h15

10h15

11h30

13h

13h40

13h40

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15h30

15h30

16h

16h

17h

Salão Azul: Recepção e credenciais (Salão Azul, Prédio 1)

Sala SOC: Instalação dos posters e Mostra Cultural

Fisiopatologia hidroeletrolítica no cavalo esportivo

Pablo Ignacio Trigo

Marcadores moleculares em Medicina Equina

Juliana Azevedo Gonçalves

Trabalhos Orais

| **Beatriz Moreira** | Physiological responses of horses subjected to a treadmill adaptation protocol

| **Alexandre Costa** | Detection of Pearsonema spp. in wild mammals from Brazil: preliminary results

and new host records

| **Beatriz Coelho** | Toxoplasma gondii circulation foci in synanthropic mammals: a One Health study at

UFRRJ, Brazil

Coffee Break

Apresentação de posters

Espaço Empresarial

ALCON

Integrando a biomecânica à prescrição do exercício com estratégias práticas para prevenir lesões em equinos Guilherme de Camargo Ferraz

Técnicas, indicações e complicações do stent laríngeo em cães

Pedro Herrera

Exercício como ferramenta de saúde e performance para cães

Guilherme Ferraz

Coffee Break

Apresentação de posters

Espaço Empresarial

NUTRIPHARME

Vivência no Doutorado Sanduíche no Exterior

Alexandre Carvalho Costa

Premiação Melhores Trabalhos científicos

Trabalhos culturais



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IX SAMVET

Semana Acadêmica da Pós-Graduação em Medicina Veterinária

NOSSOS PATROCINADORES



NOSSOS APOIADORES



Colégio Brasileiro de Nefrologia e Urologia Veterinárias - CBNUV



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