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June 2014 Abstracts

Canine Brief Pain Inventory scores for dogs with osteoarthritis before and after administration of a monoclonal antibody against nerve growth factor
Ralph P. Webster, Gail I. Anderson, David P. Gearing
Objective—To determine changes in Canine Brief Pain Inventory scores for dogs with osteoarthritis after administration of a monoclonal antibody (mAb) against nerve growth factor (NGF) that was modified by use of a proprietary process for administration to dogs. Animals—11 adult dogs.
Procedures—Dogs received the anti-NGF mAb (0.2 mg/kg, IV) at various evaluation times during the study period; at other evaluation times, dogs received an equivalent volume of PBS solution IV.
Owners determined Canine Brief Pain Inventory pain severity (PS) and pain interference (PI) scores immediately before (baseline) and 2, 4, and 6 weeks after administration of the anti-NGF mAb; owners were unaware of the evaluation time at which the mAb had been administered. Results—Compared with baseline PS scores (median, 4.75; range, 0.75 to 8.5), dogs had significantly lower PS scores 2 weeks (median, 3; range, 1 to 5.5) and 4 weeks (median, 2.25; range, 0.25 to 7.25) after administration of anti-NGF mAb. Compared with baseline PI scores (median, 5.33; range, 1.17 to 9.33), dogs had significantly lower PI scores 2 weeks (median, 3; range, 0.67 to 6.83) and 4 weeks (median, 3.33; range, 0.67 to 6.67) after administration of anti-NGF mAb. The PS and PI scores 6 weeks after mAb administration were lower than baseline scores, although values were not significantly different.
Conclusions and Clinical Relevance—Results of this study suggested the evaluated anti-NGF mAb decreased PS and PI scores for 4 weeks after administration. This treatment may be effective for alleviation of signs of pain in dogs with osteoarthritis for up to 4 weeks.

Effects of physiologic concentrations of L-lysine on in vitro replication of feline herpesvirus 1.
Nicholas J. Cave, Kathryn Dennis, Gaya Gopakumar, Magda Dunowska
Objective—To evaluate the effects of various concentrations of L-lysine on in vitro replication of feline herpesvirus 1 (FHV-1). Sample—Cultures of Crandell-Rees feline kidney (CRFK) cells. Procedures—CRFK cells were inoculated with FHV-1 and maintained in media with 20 combinations of L-arginine and L-lysine concentrations. Changes in cell viability were monitored by continuous measurement of electrical impedance of cultured cells and by observation of viral cytopathic effects. Viral load was determined by use of quantitative PCR assay in supernatants obtained from infected cultures at specified time points. Results—Increases in L-lysine concentration had no effect on the kinetics of cell death in FHV-1-infected cultures. There was also no significant effect (r2 < 0.1) on viral DNA load for L-arginine concentrations ≥ 12 µg/mL. There was a significant effect of increases in L-lysine concentration on viral DNA load in media supplemented with 6 µg of L-arginine/mL (mean ± SD slope, −4.641 ± 1.626 units; adjusted r2 = 0.45). However, the difference between the lowest (1 × 106.28 copies/µL) and highest (1 × 106.86 copies/µL) FHV-1 DNA load in these media was < 1 logarithm.
Conclusions and Clinical Relevance—The difference in FHV-1 DNA load was unlikely to be biologically important. Various L-lysine concentrations did not inhibit in vitro replication of FHV-1 at L-arginine concentrations sufficient to maintain cell growth. This conclusion was consistent with results of other studies in which investigators have not detected a consistently beneficial effect when L-lysine is administered to FHV-1-infected cats.

Kinetic analysis of 2-[(18F]fluoro)-2-deoxy-d-glucose uptake in brains of anesthetized healthy dogs.
Lindsay M. Williams, Federica Morandi, Dustin R. Osborne, Jill Narak, Amy K. LeBlanc.
Objective—To assess kinetic 2-[(18F]fluoro)-2-deoxy-d-glucose (18FDG) uptake in the brain of anesthetized healthy adult dogs by use of positron emission tomography (PET) and to determine whether 18FDG uptake differs among anatomic regions of the brain. Animals—5 healthy Beagles.
Procedures—Each isoflurane-anesthetized dog was administered 18FDG IV (dose range, 3.0 to 5.2 mCi), and PET data were acquired for 2 hours. A CT scan (without contrast agent administration) was performed to allow more precise neuroanatomic localization. Defined regions of interest within the brain were drawn on reconstructed image data. Standard uptake values (SUVs) for 18FDG were calculated to generate time-activity curves and determine time to peak uptake. Results—Time-activity curve analysis identified 4 regional uptake patterns: olfactory, gray matter, white matter, and other (brainstem, cerebellum, and occipital and frontal regions). The highest maximum SUV's were identified in the olfactory bulbs and cerebral gray matter, and the lowest maximum SUV was identified in cerebral white matter. Mean time to peak uptake ranged from 37.8 minutes in white matter to 82.7
minutes in the olfactory bulbs. Conclusions and Clinical Relevance—Kinetic analysis of 18FDG uptake revealed differences in uptake values among anatomic areas of the brain in dogs. These data provide a baseline for further investigation of 18FDG uptake in dogs with immune-mediated inflammatory brain disease and suggest that 18FDG-PET scanning has potential use for antemortem diagnosis without histologic analysis and for monitoring response to treatment. In clinical cases, a 1-hour period of PET scanning should provide sufficient pertinent data.

**Journal or Small Animal Practice**

**Investigation of the effects of a polymerised bovine haemoglobin solution on tension in isolated canine saphenous artery**

P. Pawson and F. J. Dowell

Objectives; To investigate the vasoconstriction induced by a polymerised bovine haemoglobin solution, hb-200, in isolated canine arteries. Methods; Rings of canine saphenous artery, from euthanatized dogs, were mounted between stainless steel wires in krebs’ solution (95% O2, 5% CO2, 37°C) for isometric tension recording. Following incubation with hb-200, cumulative concentration response curves to phenylephrine (vasoconstrictor) and acetylcholine (vasodilator) were investigated. Responses to acute addition of hb-200 were also examined in pre-constricted or pre-dilated arteries. Responses were further studied in the presence or absence of the endothelium, inhibitors of endothelium-dependent vasodilation (l-name, charybdotoxin and apamin), an endothelin antagonist (bq-788) and the antioxidant superoxide dismutase. Results; Incubation with hb-200 (0·2 or 2 g/l) significantly enhanced phenylephrine-induced contraction (decreasing half maximal effective concentration, ec50, p=0·0035) and inhibited acetylcholine-induced relaxation (increasing ec50, p<0·0001). Acute addition of hb-200 (0·2 or 2 g/l) significantly increased tension in pre-constricted arteries (p=0·0059) and reversed relaxation in pre-dilated arteries (p=0·0005). These acute responses were abolished in endothelium-denuded arteries and arteries incubated with l-name. Responses to hb-200 were unaffected by incubation with charybdotoxin and apamin, bq-788, or superoxide dismutase. Clinical significance; Low concentrations of hb-200 enhance vasoconstriction in isolated canine saphenous artery, primarily by antagonism of nitric oxide. This effect may be detrimental in some dogs (e.g. Those at risk of volume overload) but beneficial in others (e.g. Those in septic shock).

**Retrospective study of 14 cases of canine arthritis secondary to leishmaniasis infection**

S. Sbrana, V. Marchetti, F. Mancianti, G. Guidi and D. Bennett

Objective; To describe the clinical appearance, laboratory findings and response to treatment of dogs with inflammatory joint disease associated with leishmaniasis. Methods; Retrospective analysis of case records of dogs with serologically confirmed leishmaniasis and concurrent inflammatory joint disease presented between 2005 and 2011. Results; In total, 14 cases met the inclusion criteria. Of these, five (36%) dogs were presented with monoarthritis, five (36%) with oligoarthritis and four (28%) with polyarthritis. The most frequently affected joint was the carpus. Both erosive and non-erosive disease was identified on radiographic examination. All dogs had an inflammatory synovial fluid with a high white cell count and a predominance of neutrophils, and in eight (57%) cases leishmania amastigotes were found in the synovial fluid smears. Dogs were treated with 50 mg/kg n-methylglucamine antimoniate twice a day for 1 month and 10 mg/kg allopurinol twice a day for 6 to 9 months combined with prednisolone in five cases. At the 6-month follow-up, eight (57%) dogs showed improvement in general and orthopaedic signs and four (28%) dogs were stable. Clinical significance; Leishmaniasis should be considered a differential diagnosis in dogs with inflammatory arthritis in endemic areas.

**A retrospective study of positive pressure ventilation in 58 dogs: indications, prognostic factors and outcome.**


Objectives; To assess the usefulness of clinical and clinicopathological parameters as prognostic markers of survival in dogs undergoing positive pressure ventilation. Methods; Retrospective study of case records of 58 client-owned dogs undergoing positive pressure ventilation. Dogs were divided into two groups; inadequate oxygenation due to pulmonary parenchymal disease (group 1) and inadequate ventilation (group 2). Results; Median duration of positive pressure ventilation was 30 (range 10 to 136) hours. Survival rate was 32% (19 dogs). Survivors were significantly younger (p<0·005) and had significantly higher (p<0·002) median pao2/fio2 ratio at 4 to 12 hours postinitiation of positive pressure ventilation, and immediately before weaning (p<0·006) compared to non-survivors. A receiver operator characteristics analysis of pao2/fio2 immediately before weaning as predictor of
survival had an area under the curve of 0.76 (95% confidence interval 0.54 to 0.97), with optimal cut-off point of 252 mmHg, corresponding to a sensitivity and specificity of 0.80 and 0.79, respectively. The survival rates of dogs with pao2/fio2 less than 200 mmHg at 4 to 12 hours postintubation of positive pressure ventilation, or immediately before weaning were 15% (3/20 dogs) and 6% (1/16 dogs), respectively. Clinical significance; The pao2/fio2 ratio is an early prognostic indicator of successful weaning in dogs undergoing positive pressure ventilation.

Serum cardiac troponin i concentrations in cats with anaemia – a preliminary, single-centre observational study

S. M. Lalor, D. A. Gunn-moore, R. Cash, A. Foot, N. Reed and R. J. Mellanby

Objectives; A range of cardiovascular abnormalities have been associated with anaemia. However, it remains unclear whether anaemia is associated with cardiac myocyte damage in cats. The aim of this study was to assess if cats with anaemia have an increased prevalence of cardiac myocyte damage, as assessed by serum concentrations of cardiac troponin i, compared to non-anaemic, ill cats.

Methods; Serum cardiac troponin i concentrations were measured in 18 anaemic cats and in 31 non-anaemic, ill cats with non-primary cardiac, non-renal and non-primary haematological disorders.

Results; The serum cardiac troponin i concentrations in the anaemic group (0.43 ng/ml) were significantly higher (p=0.0002) than in the non-anaemic ill group (0.04 ng/ml). Using a cut-off of less than 0.16 ng/ml, 12 of the 18 anaemic cats had an increased serum cardiac troponin i concentration, which was significantly higher (p=0.005) than the non-anaemic ill cats (7 of 31 cats). Clinical significance; Serum cardiac troponin i concentrations were higher in cats with anaemia in this study. Further studies are required to establish whether the anaemia or other confounding factors is the cause of the increased serum cardiac troponin i concentrations.

The Veterinary Journal

Radiographic scoring for intervertebral disc calcification in the Dachshund.

Alana J. Rosenblatt, Cynthia D.K. Bottema, Peter B. Hill.

Intervertebral disc disease is a common, painful and debilitating neurological condition of dogs, causing substantial morbidity and mortality. The Dachshund is particularly susceptible to this disorder. The goal of this article is not to duplicate previously published reviews on canine intervertebral disc degeneration and degenerative diseases. Rather, the aims are threefold: (1) to reflect on selected clinical and pathophysiological aspects of intervertebral disc degeneration and disc disease that are pertinent to the Dachshund breed; (2) to review a radiographic spinal scoring scheme developed to reduce the prevalence of intervertebral disc disease in Dachshunds; and (3) to suggest further areas of research to improve upon the currently established scoring scheme in an attempt to address this breed's greatest health problem.

Enoxaparin: Pharmacokinetics and treatment schedule for cats.

Reinhard Mischke, Jette Schönig, Elisabeth Döderlein, Sonja Wolken, Claudia Böhm, Manfred Kietzmann.

Detailed pharmacokinetic data are not available for subcutaneously (SC) administered enoxaparin in cats and this causes difficulties in establishing treatment protocols. The aims of this study were (1) to establish pharmacokinetic data of SC administered enoxaparin and (2) to establish a treatment schedule. Six healthy cats received a single SC injection of 1 mg enoxaparin/kg and blood samples were collected before and 1, 2, 3, 4, 6, 8, 10 and 12 h after the injection. Six further healthy cats received 0.75 mg/kg every 6 h for four consecutive days and blood samples were collected before and 2 h after the first and second injection on day 1, and the first injection on days 2 and 4. Anti-factor Xa (FXa) activity, coagulation tests and thromboelastometry assays were performed. Enoxaparin injection was well tolerated. Following the single SC injection Cmax was 0.83 ± 0.08 anti-FXa IU/mL and in 5/6 cats was detected after 2 h (Tmax = 110 ± 25 min). The total clearance was 23.4 ± 4.8 mL/h/kg and the terminal half-life was 2.27 ± 0.4 h. All cats receiving repeated injections reached the defined target peak range of 0.5–1.0 IU/mL by 2 h after the second injection (0.54 [0.50–0.61]; median, [minimum – maximum]) and there was no considerable accumulation subsequently. With the exception of thromboelastometry (especially non-activated), ratio values of coagulation times increased significantly although only slightly (e.g., the maximal value of median activated partial thromboplastin time ratio was 1.27). Significant, although only moderately close relationships with Spearman rank correlation coefficients between 0.424 and 0.558 were calculated between anti-FXa activities and ratios of different coagulation times. A dosage schedule of 0.75 mg/kg four times a day seems suitable for therapeutic use of enoxaparin in cats as it leads to reproducible peak anti-FXa activities within the
target for the treatment of thrombosis in humans. The low inter-individual variation may indicate that monitoring based on anti-FXa activities is not necessary.

The role of osteonecrosis in canine coronoid dysplasia: Arthroscopic and histopathological findings.
Coronoid dysplasia (CD) or medial coronoid disease is part of canine elbow dysplasia and eventually results in osteoarthrosis. Although CD was originally attributed to disturbed endochondral ossification, more recent data point to the subchondral bone. The objective of this study was to assess dysplastic bone and cartilage of dogs that underwent unilateral or bilateral arthroscopic subtotal coronoidectomy for the treatment of CD. Arthroscopic findings and histopathology of bone and cartilage removed from elbow joints with CD were compared. The most common arthroscopic finding was fragmentation with softening of the subchondral bone of the central part of the medial coronoid process. In dogs without obvious fragmentation, CD was characterised by bone softening and chondromalacia. During arthroscopic intervention dysplastic bone and cartilage were collected for histopathological assessment. Forty-five slices of formalin-fixed, paraffin-embedded bone and cartilage samples were stained using haematoxylin and eosin and evaluated. Histopathological findings primarily consisted of osteonecrosis of subchondral bone with necrosis within the marrow spaces. Histopathological changes in the articular cartilage were characterised by fibrillation, chondrocyte clone formation, and focal cartilage necrosis. The pathology was found primarily in the subchondral bone and not in the articular cartilage. Vascular compromise may play a role in the pathogenesis of osteonecrosis in CD.

Immunohistochemical evaluation of tissue factor, fibrin/fibrinogen and D-dimers in canine glioma.
Cristian de la Fuente, Martí Pumarola, Ester Blasco, Francisco Fernández, Judit Viu, Sònia Añor.
In human gliomas, tissue factor (TF) is overexpressed, associated with the grade of malignancy and influences tumour biology. Intra-tumoural fibrin/fibrinogen deposition and activation of the fibrinolytic system also play a role in tumour cell proliferation and angiogenesis. The first aim of the present study was to investigate TF expression and the presence of fibrin/fibrinogen and D-dimers in canine glioma biopsies, graded according to the World Health Organization (WHO) classification of tumours of the central nervous system. The second aim was to investigate the occurrence of intravascular thrombosis (IVT) in canine gliomas, as a potential histological marker of glioma type or grade of malignancy. An immunohistochemical study using antibodies against TF, fibrin/fibrinogen and D-dimers was performed with 24 glioma samples, including 15 oligodendrogliomas, 6 astrocytomas and 3 mixed gliomas. Immunohistochemical data were statistically analysed to determine whether there was any relationship between glioma type and grade of malignancy. All gliomas were moderate to strongly positive for TF and the staining score was significantly higher (P = 0.04) in high-grade (III or IV) than in low-grade (II) gliomas. Intra-tumoural fibrin/fibrinogen deposition was detected in all tumour biopsies assessed, and D-dimers were detected in 17/24 gliomas. IVT was a frequent finding, but was not linked to a specific glioma type or malignancy grade. TF expression, fibrin/fibrinogen deposition, extravascular fibrinolytic system activation and IVT occur in canine gliomas. Canine glioma might be a suitable model for studying coagulation and fibrinolysis as potential therapeutic targets for human gliomas.

The frequency and distribution of canine leishmaniosis diagnosed by veterinary practitioners in Europe.
M.J. Mattin, L. Solano-Gallego, S. Dhollander, A. Afonso, D.C. Brodbelt.
This study aimed to evaluate the frequency and spatial distribution of canine leishmaniosis (CanL) in France, Greece, Italy, Portugal and Spain. An online questionnaire investigated the location and frequency of CanL cases diagnosed by veterinary practitioners. Further data from the practice management systems of veterinary clinics in France were provided by a financial benchmarking company in relation to all treatment and test invoice data from participating practices. The geographical and temporal web interest in leishmaniosis was explored using Google Trends. Veterinary practitioners from France, Greece, Italy, Portugal and Spain completed 1231 questionnaires. The percentage of practice-attending dogs with a veterinary diagnosis of CanL ranged from 0.71% in France to 7.80% in Greece. However, due to regional differences in response rates, particularly in France, the mean regional estimates may better reflect the disease burden. Benchmarking data relating to approximately 180,000 dogs estimated that 0.05% of dogs attending veterinary clinics were treated for CanL or euthanased with suspected CanL in France. The regional frequency of Google web queries for leishmaniosis generally reflected the spatial patterns of disease identified from the other data.
sources. In conclusion, CanL was a relatively common diagnosis in veterinary clinics in many regions of the countries studied. Knowledge of CanL in endemic areas can direct the use of preventative measures and help estimate the likelihood of infection in dogs visiting or inhabiting these countries.

**Nuclear pleomorphism: Role in grading and prognosis of canine mammary carcinomas.**
Marta Santos, Carla Correa-Gomes, Andreia Santos, Augusto de Matos, Eduardo Rocha, Carlos Lopes, Patricia Dias Pereira.
Canine mammary tumours are highly heterogeneous in morphology and behaviour and successful clinical management requires robust prognostic factors. Histological grade, determined by the Nottingham nuclear pleomorphism scoring method, has been considered one of these factors. Despite the adoption of this method, it is unknown whether inter-observer agreement exists regarding the assessment of its parameters in canine mammary carcinomas (CMC). In this study, the agreement between two observers in scoring nuclear pleomorphism using the Nottingham method was evaluated in 89 cases of CMC. Histological evidence of vascular invasion and/or lymph node metastases (both early signs of tumour aggressiveness) was recorded. For 48 animals, two years of follow-up data were available. Nuclear pleomorphism was quantitatively assessed using a stereological method that allowed for an unbiased estimation of nuclear size and its variability by determining the volume-weighted mean nuclear volume (image). Differences between the image estimations and nuclear pleomorphism scores were evaluated. Additionally, the prognostic significance of clinicopathological features including nuclear score and image was evaluated. A poor agreement between the two observers was obtained (κ value 0.46). Tumours scored as 1 and 2 presented similar image values and only tumours that scored 3 presented significantly higher estimates. The image value was not associated with vascular invasion and/or lymph node metastases, but was higher in tumours that progressed during follow-up. In multivariable analysis, only tumour size was an independent factor regarding evidence of aggressiveness and an optimal cut-off of 2.9 cm was defined.

**Canine aural cholesteatoma: A histological and immunohistochemical study.**
Barbara Banco, Valeria Grieco, Mauro Di Giancamillo, Valentina Greci, Olga Travetti, Pieranna Martino, Carlo M. Mortellaro, Chiara Giudice.
Canine aural cholesteatoma is an epidermoid cyst that forms in the middle ear cavity as a rare complication of otitis media but the aetipathogenesis remains controversial. In the present study, 13 cases of canine aural cholesteatoma were investigated histologically and immunohistochemically and compared with cases of chronic otitis. The immunohistochemical investigation was performed using the following monoclonal antibodies: anti-cytokeratins (CK) 14, 16, 8/18, and 19, and anti-Ki67. The proliferative indexes (PIs) of cholesteatomata and otitis epithelium were calculated as the percentage of Ki67 positive nuclei/total nuclei. Histologically, the cholesteatomata were composed of a hyperplastic, hyperkeratotic epithelium (matrix) resting on a fibrous perimatrix, infiltrated by inflammatory cells and devoid of cutaneous adnexa. Immunohistochemically, the cholesteatoma epithelium was CK14- and CK16-positive, and CK8/18- and CK19-negative. A similar pattern of CK expression was found in otitis externa. In otitis media, ciliated epithelium stained CK8/18- and CK19-positive in all layers, CK14-positive in the basal layers, and CK16-negative. The mean PIs in cholesteatomata and otitides were 18.8 and 17.8, respectively. The immunohistochemical pattern of CK expression in cholesteatomata, when compared with chronic otitis, was suggestive of hyperproliferative epithelium, but its origin could not be demonstrated. Comparable PI values were obtained in cholesteatoma and in chronic otitis, which confirmed that Ki67 is a valuable indicator of a hyperproliferative state, but not a predictor of aggressiveness.

**The effect of kyphoscoliosis on intervertebral disc degeneration in dogs.**
Kiterie Faller, Jacques Penderis, Catherine Stalin, Julien Guevar, Carmen Yeamans, Rodrigo Gutierrez-Quintana.
In people, abnormalities in vertebral column conformation, such as kyphoscoliosis, induce degenerative changes in adjacent intervertebral disc (IVD) structure and composition. It was hypothesised that canine IVDs adjacent to a vertebral malformation undergo early degeneration. In a blinded retrospective study, thoracic IVD degeneration was evaluated in 14 dogs on magnetic resonance images using Pfirrmann's grade. IVDs adjacent to a vertebral malformation had higher grades of degeneration than non-adjacent IVDs (P < 0.0001). There was an age-dependency, with dogs between 1 and 4 years showing higher grade of degeneration in adjacent than non-adjacent IVDs (P < 0.0001). Conversely, in older dogs, all IVDs – including the non-adjacents – showed degenerative signs, possibly due to normal aging. These results suggest that congenital vertebral malformation results in early degeneration of adjacent IVDs.
Expression of 11β-hydroxysteroid dehydrogenase isoforms in canine adrenal glands treated with trilostane.

Takahiro Teshima, Hirotaka Matsumoto, Takayuki Kumagai, Mai Kurano, Hidekazu Koyama

Trilostane, a competitive inhibitor of 3β-hydroxysteroid dehydrogenase, is often used to treat canine hyperadrenocorticism. In some species, trilostane has been shown to have additional effects on steroid biosynthesis, and it has been postulated that trilostane might have effects on 11β-hydroxysteroid dehydrogenase (11β-HSD) in dogs. To investigate the effect of trilostane on 11β-HSD in canine adrenal glands, healthy Beagle dogs were treated with trilostane for 8 weeks. Trilostane treatment resulted in a significant decrease of the cortisol/cortisone ratio in the serum. The adrenal gland mRNA and protein expression levels of 11β-HSD type 1 and 11β-HSD type 2 were significantly higher and significantly lower respectively in dogs treated with trilostane compared to those in control healthy Beagle dogs. These findings suggest that trilostane may have an effect on 11β-HSD activity in canine adrenal glands.

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Endoscopic mucosal resection and snare polypectomy for treatment of a colorectal polypoid adenoma in a dog.

Coleman KA1, Berent AC, Weisse CW

CASE DESCRIPTION: An 11-year-old castrated male mixed-breed dog was examined for a 3-month history of hematochezia and tenesmus. Abdominal ultrasonography and rectal examination prior to referral had revealed a colorectal polyp, diagnosed as a benign colorectal polypoid adenoma after histologic examination of tissue samples. The patient was referred for treatment. CLINICAL FINDINGS: A 2-cm-diameter sessile polypoid mass was located approximately 6 cm oral to the anus in the right dorsolateral region of the descending colon just caudal to the pubis. There was no evidence of metastasis on thoracic radiography or abdominal ultrasonography. Results of a CBC and serum biochemical analysis were within reference limits. TREATMENT AND OUTCOME: Endoscopic mucosal resection (EMR) and snare electrocautery were used to resect the mass and a definitive histopathologic diagnosis of a sessile colorectal polypoid adenoma was made. A 9.9-mm gastroduodenoscope was used during colonoscopy to inspect the mass. To aid in EMR, a 25-gauge endoscopic injection needle was used to infuse sterile saline (0.9% NaCl) solution under the base of the polyp, into the submucosa to elevate the mucosa from the muscularis layer beneath the polyp prior to polypectomy. This was necessary because of the sessile, rather than pedunculated, base of the mass. The entire polyp was successfully removed with endoscopic guidance. The clinical signs of hematochezia and tenesmus resolved immediately, and serial rectal examinations were performed over the following 36 months with no palpable evidence of recurrence. CLINICAL RELEVANCE: The patient described in the present report underwent successful colonic EMR and snare polypectomy with no known evidence of mass recurrence during the following 36 months, suggesting that this minimally invasive procedure may be a valuable treatment option for sessile polyps. The advantage of this technique was that elevation of the mucosa via injection of saline solution improved visibility of the polyp and helped to separate the polyp base from the deeper submucosal colorectal tissue, making complete resection possible.


Burr HD1, Keating JH, Clifford CA, Burgess KE

OBJECTIVE: To determine features of lymphoma of the tarsus in cats. DESIGN: Multi-institutional retrospective study. ANIMALS: 23 cats with cutaneous lymphoma of the tarsus. PROCEDURES: Veterinary oncologists were requested to submit cases fitting the following criteria: histologically or cytologically confirmed lymphoma with a location at or near the tarsus and described as subcutaneous or mass-like. Data regarding breed, sex, age, FeLV and FIV status, and reason for evaluation were collected. Results of staging tests, location of the tumor, immunophenotype, and histopathologic description were recorded. Type of treatments, outcome, survival time, presence or absence of progressive disease, and cause of death or reason for euthanasia were also recorded. RESULTS: Most cats were older, with a median age of 12 years (range, 7 to 18 years). No association with positive retroviral status was found. Popliteal lymph node involvement at diagnosis was reported in 5 cats, and a suspicion of lymphoma at a different site on the basis of results of abdominal ultrasonography was reported in 4 cats. Treatments were variable and included corticosteroids alone (n = 2), chemotherapy (9), radiation and chemotherapy (7), or surgery with or without chemotherapy (5). Thirteen cats were reported to have lymphoma at a different site at the time of last follow-up, death, or euthanasia. Median survival time for all cats in the study was 190 days (range, 17 to 1,011 days). CONCLUSIONS AND

Milovanec M1, Wilson DM, Monnet E, Seguin B.

OBJECTIVE: To assess perioperative findings and postoperative complications and outcomes in dogs that had ectopic thyroid carcinomas with invasion into the hyoid apparatus and underwent tumor excision with partial hystectomy. DESIGN: Retrospective case series. ANIMALS: 5 client-owned dogs. PROCEDURES: Medical records of dogs that had an ectopic neuroendocrine tumor with invasion into the hyoid apparatus and underwent tumor excision with partial hystectomy were reviewed for information regarding perioperative and postoperative findings and outcome. During surgery in each case, the thyrohyoid and ceratohyoid or epihyoid bones (depending on degree of hyoid apparatus involvement) were sharply transected, allowing en bloc removal of the tumor. The ipsilateral cut ends of the thyrohyoid and ceratohyoid or epihyoid bones (depending on which was cut) were sutured together with polypropylene suture in a simple interrupted pattern. RESULTS: All partial hystectomy procedures were completed without surgical or anesthetic complications. All 5 dogs were able to eat and drink between 7 and 24 hours after surgery, with no signs of dysphagia, ptyalism, or abnormal tongue carriage. Follow-up information was obtained over a period of 173 to 587 days after surgery for all 5 dogs; 4 dogs were still alive at last follow-up. One dog was euthanized 587 days after surgery because of lethargy, inappetence, and hypercalcemia. CONCLUSIONS AND CLINICAL RELEVANCE: From this limited series of cases, results suggested that partial resection of the hyoid apparatus during removal of ectopic thyroid carcinoma may be tolerated well and be associated with very good functional outcomes in dogs.


OBJECTIVE: To evaluate the signalment, neurologic examination and imaging findings, and outcome in dogs treated medically or surgically for osseous-associated cervical spondylomyelopathy (OACSM). DESIGN: Retrospective case series. ANIMALS: 27 client-owned dogs. PROCEDURES: Medical records for dogs with OACSM (diagnosis made in 2000 through 2012) were reviewed. Collected data included signalment, neurologic examination findings (graded from 0 [normal] to 5 [tetraplegia]), imaging findings, treatment, and outcome. From MRI and CT images, measurements were obtained for subjective grading of spinal cord compression. RESULTS: Among the 27 dogs, the median age was 2 years; there were 15 Great Danes, 3 Mastiffs, 3 Newfoundlands, and 6 other large-breed dogs. For medically treated dogs (n = 7), the median initial neurologic grade was 2; for surgically treated dogs (20), the median initial neurologic grade was 3. Magnetic resonance imaging revealed dorsolateral spinal cord compression in 22 dogs and lateral spinal cord compression in 5 dogs. Dogs with more severe compressions were slightly more likely to undergo surgical than medical treatment. Median survival time of medically treated dogs was 43 months, and that of surgically treated dogs was 60 months. Fifteen of 19 dogs treated surgically had improved neurologic grades at 4 to 8 weeks after surgery and had a good to excellent long-term outcome. CONCLUSIONS AND CLINICAL RELEVANCE: Surgical treatment of dogs with OACSM resulted in neurologic improvement and was associated with a good long-term outcome. For dogs that received medical treatment, neurologic deterioration continued but some patients did well for several years.

Effects of repeated blood donations on iron status and hematologic variables of canine blood donors.

Ferreira RR1, Gopegui RR, Araujo MM, de Matos AJ.

OBJECTIVE: To evaluate the bone marrow regenerative response and iron status of canine blood donors subjected to repeated blood collections for 1 year. DESIGN: Prospective cohort study. ANIMALS: 57 blood donor dogs. PROCEDURES: Hematologic variables, including reticulocyte percentage, were evaluated before and 10 days after each blood collection in 16 dogs donating 13% of total blood volume (TBV) every 2 months (group 1), 16 dogs donating 13% of TBV every 3 months (group 2), and 25 dogs donating 15% of TBV every 3 months (group 3) for 1 year. Serum
Use of a morphometric method and body fat index system for estimation of body composition in overweight and obese cats.
Witzel AL1, Kirk CA, Henry GA, Toll PW, Brejda JJ, Paetau-Robinson I.
OBJECTIVE: To develop morphometric equations for prediction of body composition and create a body fat index (BFI) system to estimate body fat percentage in overweight and obese cats.
DESIGN: Prospective evaluation study. ANIMALS: 76 overweight or obese cats ≥ 1 year of age.
PROCEDURES: Body condition score (BCS) was determined with a 5-point scale, morphometric measurements were made, and dual-energy x-ray absorptiometry (DEXA) was performed. Visual and palpation-based evaluation of various body regions was conducted, and results were used for development of the BFI system. Best-fit multiple regression models were used to develop equations for predicting lean body mass and fat mass from morphometric measurements. Predicted values for body composition components were compared with DEXA results. RESULTS: For the study population, prediction equations accounted for 85% of the variation in lean body mass and 98% of the variation in fat mass. Values derived from morphometric equations for fat mass and lean mass were within 10% of DEXA values for 55 of 76 (72%) and 66 of 76 (87%) cats, respectively. Body fat as a percentage of total body weight (ie, body fat percentage) predicted with the BCS and BFI was within 10% of the DEXA value for 5 of 39 (13%) and 22 of 39 (56%) cats, respectively. CONCLUSIONS AND CLINICAL RELEVANCE: The BFI system and morphometric equations were considered accurate for estimation of body composition components in overweight and obese cats of the study population and appeared to be more useful than BCS for evaluation of these patients. Further research is needed to validate the use of these methods in other feline populations.

Use of a novel morphometric method and body fat index system for estimation of body composition in overweight and obese dogs.
Witzel AL1, Kirk CA, Henry GA, Toll PW, Brejda JJ, Paetau-Robinson I.
OBJECTIVE: To develop morphometric equations for prediction of body composition and create a body fat index (BFI) to estimate body fat percentage in overweight and obese dogs. DESIGN: Prospective evaluation study. ANIMALS: 83 overweight or obese dogs ≥ 1 year of age.
PROCEDURES: Body condition score (BCS) was assessed on a 5-point scale, morphometric measurements were made, and dual-energy x-ray absorptiometry (DEXA) was performed. Visual and palpation-based assessments and dual-energy x-ray absorptiometry (DEXA) were performed. Equations for predicting lean body mass, fat mass, and body fat as a percentage of total body weight (ie, body fat percentage) on the basis of morphometric measurements were generated with best-fit statistical models. Visual and palpation-based descriptors were used to develop a BFI. Predicted values for body composition components were compared with DEXA-measured values. RESULTS: For the study population, the developed morphometric equations accounted for 98% of the variation in lean body mass and fat mass and 82% of the variation in body fat percentage. The proportion of dogs with predicted values within 10% of the DEXA values was 66 of 83 (80%) for lean body mass, 56 of 83 (68%) for fat mass, and 56 of 83 (67%) for body fat percentage. The BFI accurately predicted body fat percentage in 25 of 47 (53%) dogs, whereas the value predicted with BCS was accurate in 6 of 47 (13%) dogs. CONCLUSIONS AND CLINICAL RELEVANCE: Morphometric measurements and the BFI appeared to be more accurate than the 5-point BCS method for estimation of body fat percentage in overweight and obese dogs. Further research is needed to assess the applicability of these findings to other populations of dogs.

The Australian Veterinary Journal
Primary immune-mediated thrombocytopenia and immune-mediated neutropenia suspected in a 21-week-old Maine Coon cat.
Best MP1, Fry DR.
CASE REPORT: A 21-week-old Maine Coon cat presented with an acute-onset coagulopathy. Severe concurrent thrombocytopenia and neutropenia were identified on peripheral blood smears and bone marrow cytology supported a peripheral consumptive process. Other than mild superficial haemorrhage, the cat was clinically well and screening for retroviral diseases, abdominal ultrasound examination, thoracic radiography, haematology and biochemistry panels did not identify an underlying disease. There was no historical pharmaceutical or toxicological trigger noted and the cat was from an area without endemic Ehrlichia spp. There was a rapid resolution of both cytopenias following treatment with immunosuppressive doses of prednisolone, though a mild relapse occurred during gradual prednisolone withdrawal and was responsive to a dose increase. CONCLUSIONS: This report describes this combination of diseases for the first time in a cat and presents a younger patient than previously described with feline primary immune-mediated haematological disease.

Journal of Feline Medicine and Surgery

Transdermal application of methimazole in hyperthyroid cats: a long-term follow-up study
Felicitas S Boretti, Nadja S Sieber-Ruckstuhl, Sandra Schäfer et al.

Transdermal methimazole is suggested as an alternative to oral therapy for hyperthyroid cats that are difficult to pill. However, no information on long-term management with this treatment is available. Our objective was therefore to retrospectively evaluate the efficacy and safety of long-term transdermal methimazole treatment in hyperthyroid cats. Sixty cats with newly diagnosed hyperthyroidism and available long-term follow-up information were included. Methimazole was formulated in a pluronic lecithin organogel-based vehicle and was applied to the pinna of the inner ear. Cats were re-evaluated at regular intervals. Median (range) follow-up was 22.6 months (3.6–88.4 months). Clinical improvement was observed in all cats and side effects were rare (mild transient gastrointestinal signs: n = 3; erythema of the pinna: n = 2, necessitating a switch to oral medication). Despite a significant decrease, with median T4 concentrations within the reference interval during the follow-up period, several cats repeatedly had T4 concentrations in the thyrotoxic and hypothyroid range. Maximal and minimal daily doses during the follow-up period were 15.0 and 1.0 mg, respectively; they were significantly higher than the starting dose after 24–36 months of therapy. Although the majority of owners were highly satisfied with the treatment, several admitted not treating their cat regularly. Transdermal methimazole is a safe option for the long-term management of feline hyperthyroidism. However, it seems difficult to keep the T4 concentrations constantly within the reference interval. Higher doses can be expected after prolonged treatment and, despite the convenience of transdermal application, owner compliance should be assessed regularly.

Seroprevalence of feline leukemia virus, feline immunodeficiency virus and heartworm infection among owned cats in tropical Mexico
Antonio Ortega-Pacheco, Armando J Aguilar-Caballero, Rafael F Colin-Flores et al.

Several infectious agents may be distributed within a healthy population of cats where diverse risk factors predispose them to come into contact with pathogens. Blood samples from 227 owned cats in Merida, Mexico, were collected with the objective of determining the seroprevalence and associated risk factors of feline leukemia virus (FeLV) and Dirofilaria immitis antigens, and feline immunodeficiency virus (FIV) antibody. Serological detection of FeLV and D. immitis antigens, and FIV antibodies was performed using the commercial kit SNAP Feline Triple Test. The prevalence was found to be 7.5% for FeLV, 2.5% for FIV and 0% for D. immitis. Adult cats were at a higher risk of coming into contact with FeLV (P <0.01) than younger cats. Owing to its low prevalence, a risk factor analysis was not performed for FIV. The prevalence of retroviral infections found in this study was low, but within the limits reported in the different geographical areas of the world. Cases of filariosis in the domestic cats of Merida, Mexico, may be absent or very low; however, the low sample size may have influenced these results.

Prevalence and classification of chronic kidney disease in cats randomly selected from four age groups and in cats recruited for degenerative joint disease studies
Christina L Marino, B Duncan X Lascelles, Shelly L Vaden et al.

Chronic kidney disease (CKD) and degenerative joint disease are both considered common in older cats. Information on the co-prevalence of these two diseases is lacking. This retrospective study was designed to determine the prevalence of CKD in two cohorts of cats: cats randomly selected from four evenly distributed age groups (RS group) and cats recruited for degenerative joint disease studies (DJD group), and to evaluate the concurrence of CKD and DJD in these cohorts. The RS group was
Feline reference intervals for the Sysmex XT-2000iV and the ProCyte DX haematology analysers in EDTA and CTAD blood specimens
Fanny Granat, Anne Geffré, Nathalie Bourgès-Abella et. al

Laser-based haematology analysers are routinely used in veterinary clinical pathology laboratories, and are available to practitioners. However, feline haematological reference intervals (RIs) determined according to international recommendations are, to our knowledge, not available. Furthermore, platelet count RI is difficult to establish in cats because of the frequent occurrence of platelet aggregation in blood specimens. The purpose of this study was to establish feline haematological RIs with the Sysmex XT-2000iV and ProCyte DX analysers, in ethylenediamine tetra-acetic acid (EDTA) and in citrate, theophylline, adenosine and dipyridamole (CTAD), which is a combination of anticoagulants limiting platelet aggregation. Blood specimens from 120 healthy cats were analysed in duplicate, and the degree of platelet aggregation was assessed on blood smears. After exclusion of inadequate specimens, 81 sets of results (from 44 males and 37 females, aged from 6 to 116 months) were available for the determination of RIs by the non-parametric method. The effects of the anticoagulant, analyser and aggregation score were assessed. When the aggregation effect was significant, the RIs were determined using the subgroup of blood specimens with no or little aggregation. The effects of sex, age and weight were also investigated, but were moderate. The different RIs obtained with the Sysmex XT-2000iV and ProCyte DX analysers, and the two anticoagulants, were very similar to previous RIs established in EDTA with the ADVIA 120, another laser-based analyser, except for the platelet count in CTAD specimens. Its lower reference limit was higher in CTAD vs EDTA specimens, which confirms the interest in this anticoagulant in cats.

Prevalence of otitis externa in stray cats in northern Italy
Roberta Perego, Daniela Proverbio, Giada Bagnagatti De Giorgi et. al

Feline otitis externa is a dermatological disorder that has not been evaluated much in stray cats. One hundred and eighty-seven stray cats were randomly selected during a trap–neuter–release programme to investigate the prevalence of otitis externa in stray cat colonies in northern Italy. Swabs for cytological examination were obtained from the external ear canal of each cat. A direct otoscopic assessment of the external ear canal was made in 86/187 cats. Cytological evidence of otitis externa was present in 55.1% of cats. The influence on otitis of age, gender, habitat and season of sampling was tested, but no risk factors were found. Otodectes cynotis (as a sole agent or in combination) was the primary cause of otitis in 53.3% of cats. Cocci and rods, either alone or in combination with other agents, were perpetuating factors in 71.8% and 29.1% of cats, respectively. Pregnancy status was a risk factor for otitis caused by coccal infections. Malassezia species, alone or in combination, was the perpetuating factor in 50.5% of cats with otitis. Urban habitat and winter season were risk factors for otitis associated with Malassezia species. Demodex cati was identified as an incidental finding in two cats. There was good agreement between otoscopy and cytology with regard to the diagnosis of otitis externa. The results of this study show a high prevalence of otitis externa in stray colony cats and provide information on causal factors for feline otitis externa.

Effects of an iodine-restricted food on client-owned cats with hyperthyroidism
Marieke van der Kooij, Iveta Bečvárová, Hein P Meyer et. al

The objective of this prospective, multicentre, non-controlled, open-label study was to evaluate the effects of an iodine-restricted food on circulating total thyroxine (TT4) concentrations and clinical parameters in client-owned cats with hyperthyroidism. Two hundred and twenty-five cats were enrolled in the study and adapted to the iodine-restricted food. Data from physical examinations, questionnaires completed by veterinarians and owners, and circulating concentrations of TT4, urea and creatinine were recorded at weeks 0, 4 and 8. The study group included 136 female and 89 male cats (median age 15 years, range 4–21 years). Group 1 (n = 113) had been on previous anti-thyroid
medication, while group 2 (n = 112) consisted of newly diagnosed cats. No differences were found between the two groups at any time point. Circulating TT4 concentrations had decreased (P <0.0001) at week 4 and did not change significantly from week 4 to week 8. Circulating TT4 concentration was within the reference range in 56/88 cats at week 4 and in 51/68 cats at week 8. Clinical parameters (vomiting, polyuria, polydipsia, hyperactivity, polyphagia, weight loss, hair coat quality, and quality of life) had improved (P <0.0001) by week 4. Circulating creatinine concentration decreased (P = 0.001) from week 0 to week 4. Side effects associated with feeding the iodine-restricted food were not observed. In conclusion, in client-owned cats with hyperthyroidism an iodine-restricted food is a valuable management option to normalise circulating TT4 concentrations, and improve clinical signs of hyperthyroidism within 4 weeks. This applies to newly diagnosed cats, as well as to previously diagnosed cats receiving anti-thyroid drugs.

Assessment of behavioural changes in domestic cats during short-term hospitalisation
Gareth E Zeiler, Geoffrey T Fosgate, Elize van Vollenhoven, & Eva Rioja
We evaluated behavioural changes in domestic cats during short-term hospitalisation using a novel cat demeanour scoring system. Thirty-five healthy, client-owned cats admitted for neutering were enrolled. Cats were housed in a standardised cat ward for a short-term hospitalisation period (3–5 days) and demeanour scores were recorded once daily. The scoring system classified cats into one of five behavioural groupings: friendly and confident, friendly and shy, withdrawn and protective, withdrawn and aggressive, and overtly aggressive. Total demeanour score decreased over time (P <0.001) and the demeanour category improved (P <0.001). The intra-class correlation was 0.843 (P<0.001) and kappa was 0.606 (P <0.001), suggesting good repeatability and agreement among investigators. The demeanour scoring system was effective in detecting a change in behaviour in healthy cats undergoing short-term hospitalisation. The findings suggest that healthy cats require 2 days to acclimatise to hospitalisation.

Intravesical glycosaminoglycans for obstructive feline idiopathic cystitis: a pilot study
Allison M Bradley and Michael R Lappin
Feline idiopathic cystitis is a common condition, often resulting in repeated episodes of life-threatening urethral obstruction. Defective urinary bladder glycosaminoglycans have been implicated as a causal factor. In this report, a commercially available glycosaminoglycan product was infused into the urinary bladders of cats with urethral obstruction from idiopathic cystitis to study the effect on repeated obstruction. In this randomized, blind, placebo-controlled clinical trial, the therapeutic protocol was well tolerated with no adverse effects. Whereas no glycosaminoglycan-treated cats (n = 9) developed repeated urethral obstruction during the 7 day follow-up period, 3/7 placebo-treated cats developed repeated obstructions. Approaching statistical significance (P = 0.06), these data suggest that further investigation of this new treatment option is warranted.

Pericardial lymphoma in seven cats
Maria Amati, Luigi Venco, Paola Roccabianca et. al
A presumed primary pericardial lymphoma was diagnosed in seven cats. Clinical findings at presentation included poor body condition, dehydration and dyspnoea. Thoracic diagnostic imaging was performed in six cases and revealed pleural effusion and a diffuse thickening of the pericardium. A cytological diagnosis of lymphoma was obtained in six cases; in four cases the diagnosis was confirmed at necropsy. Immunophenotyping was performed in six cases: three cases were classified as T-cell and three as B-cell lymphoma. Four cats did not receive any treatment. One cat received only prednisone and two cats received chemotherapy. Six cats lived 7–11 days, except for one cat that received a multi-drug chemotherapy protocol and was still alive at the time of writing (750 days after diagnosis). Primary pericardial lymphoma is a rare extranodal feline lymphoma that has never been described previously.

Cavernous sinus syndrome secondary to intracranial lymphoma in a cat
Julien Guevar, Rodrigo Gutierrez-Quintana, George Peplinski
Cavernous sinus syndrome is characterised by internal and external ophthalmoplegia and sensory deficits over the head due to combined deficits of the three cranial nerves (CNs) responsible for the eye movements and pupil function (CN III, IV, VI) and at least one branch of the trigeminal nerve (CN V). It has rarely been described in cats and may occur secondarily to inflammatory, infectious or neoplastic lesions within the region of the cavernous sinus on the ventral aspect of the calvarium. This report describes the clinical and magnetic resonance imaging findings in a 14-year-old domestic shorthair cat with neurological deficits compatible with cavernous sinus syndrome caused by presumptive...
extranodal lymphoma. Treatment with chemotherapy resulted in clinical and imaging remission. Identification of the neurological deficits in cavernous sinus syndrome allows accurate neuroanatomical localisation in order to target diagnostic imaging studies.

**Chronic myelogenous leukaemia with persistent neutrophilia, eosinophilia and basophilia in a cat**
Hiroyuki Mochizuki, Takahiro Seki, Yoshitaka Nakahara et al.

Chronic myelogenous leukaemia was diagnosed in a 7-year-old male neutered domestic shorthair cat. Leukocytosis (74,900/µl) – mature neutrophilia, eosinophilia and basophilia – was observed. Bone marrow aspiration revealed hypercellularity with proliferation of cells of myeloid lineage. An underlying condition leading to leukocytosis was not identified. The severe leukocytosis did not respond to antibiotic therapy. Based on these findings, chronic myelogenous leukaemia was diagnosed. Because of the absence of clinical signs, the cat was monitored without treatment until 7 months after diagnosis, when it developed pruritic skin lesions. Pruritus was controlled with oral prednisolone.

Forty-two months after diagnosis, the cat developed nasal lymphoma, which was treated with radiation therapy, resulting in complete remission. The cat was still in good physical condition 63 months after diagnosis, despite the persistence of marked neutrophilia, eosinophilia and basophilia.

**Gastric cylicospirurosis in a domestic cat from Italy**
Fabrizio Iba, Elvio Lepri, Fabrizia Veronesi et al.

A gastric nodule was found in a cat examined following a car accident. Cytological examination showed a mixed, mainly eosinophilic, inflammation with reactive fibroblasts and ovoidal elements resembling nematode eggs. The cat was euthanased because of rapid worsening of clinical signs due to secondary injuries, and the gastric nodule was excised for examination. The intramural mass was smooth and spherical, with an intact mucosal surface and a little opening from which several reddish worms were extruding. Histopathological examination confirmed severe reactive fibroplasia and inflammation, surrounding sections of a nematode worm. The latter was then identified with polymerase chain reaction as belonging to the *Cylicospirura* genus. *Cylicospirura* species worms should be considered in the differential diagnosis of gastric nodules in the cat.

**Pyogranulomatous mural folliculitis in a cat treated with methimazole**
Jorge Castro López, Albert Lloret, Ivan Ravera et al.

An 11-year-old spayed female domestic shorthair cat was presented for polydipsia, hyperactivity and bilateral thyroid gland enlargement. Total T4 (TT4) was in the upper interval range; therefore, an early hyperthyroidism was suspected. A treatment trial with methimazole was started, as the owner refused further tests. Six months later the owner stopped the treatment. One year later, clinical signs persisted and TT4 was still in the upper interval range. Methimazole was re-introduced but 48 h later the cat presented non-pruritic alopecia with erythema, scales and perilesional yellowish crusts.

Pyogranulomatous mural folliculitis was diagnosed by histopathological examination of the skin biopsies. Methimazole was withdrawn and macroscopic lesions healed and disappeared histologically in 15 days. An idiosyncratic drug reaction to methimazole was suspected. To the best of our knowledge, this is the first report of feline pyogranulomatous mural folliculitis likely secondary to an adverse drug reaction to methimazole administration.

**Ventral occipito-atlanto-axial fluid-filled lesion causing dynamic spinal cord compression in a cat**
Rodrigo Gutierrez-Quintana, Gawain Hammond, and Annette Wessmann

Cystic lesions affecting the vertebral canal or spinal cord have rarely been reported in cats. A 3-year-old female neutered domestic longhair cat presented for evaluation of a 2-year-history of episodes of ataxia and paresis affecting all limbs. Neurological examination was consistent with a lesion in the C1–C5 spinal cord segments. Magnetic resonance imaging (MRI) showed a fluid-filled lesion at the occipito-atlanto-axial region causing dynamic spinal cord compression on flexion of the neck. The imaging characteristics were compatible with a juxta-articular cyst. To our knowledge, this is the first report of a fluid-filled lesion causing dynamic cervical spinal cord compression in a cat and highlights the importance of performing flexion–extension MRI views in diagnosing cases with dynamic spinal cord compression.

**Management of bilateral ureteral trauma using ureteral stents and subsequent subcutaneous ureteral bypass devices in a cat**
Elvin Kulendra, Nicola Kulendra, and Zoe Halfacre

This report describes a cat that presented with abdominal pain and worsening azotaemia following unknown trauma. Further diagnostic investigations and surgery confirmed bilateral ureteral trauma.
The cat was initially managed surgically by bilateral ureteroureterostomy over ureteral stents. The clinical signs and biochemical parameters rapidly resolved, but 2 months later the cat developed signs consistent with sterile cystitis that was unresponsive to medical management. Removal of the ureteral stents resulted in severe azotaemia as a result of stricture formation at the previous ureteral anastomosis site. The ureteral stents were initially replaced with soft stents, but subsequently cut short owing to the persistence of clinical signs of cystitis. Following shortening of the ureteral stents severe azotaemia was again observed. The resulting pelvic dilatation allowed for placement of bilateral subcutaneous ureteral bypass (SUB) systems, which resulted in alleviation of all clinical signs 12 months after SUB placement.

Journal of Veterinary Internal Medicine – no publication this month

Journal of the American Animal Hospital Association – no publication this month

The New Zealand Veterinary Journal – no publication this month

Veterinary Clinics of North America – no publication this month

Australian Veterinary Practitioner
No electronic access on the ASAVA website, despite there being a publication this month

Compendium
Still no new publications since August 2013