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Objective—To evaluate a modified proportional margins approach to resection of mast cell tumors (MCTs) in dogs.

Design—Retrospective case series.

Animals—40 dogs with subcutaneous and cutaneous MCTs undergoing curative intent surgery.

Procedures—Medical records were searched to identify dogs with a cytologically or histologically confirmed diagnosis of MCT that had not previously been treated surgically and that had undergone full oncological staging. In those dogs, tumors were resected with lateral margins equivalent to the widest measured diameter of the tumor and a minimum depth of 1 well-defined fascial plane deep to the tumor. Surgical margins were evaluated histologically. Cutaneous tumors were graded by use of the Patnaik system and the 2-tier system described by Kiupel et al. The prognosis for subcutaneous tumors was assessed in accordance with published recommendations. Follow-up information on dog health status was obtained through clinical examination, the dog owners, and the referring veterinarians.

Results—The 40 dogs had 47 tumors. Forty-one (87%) tumors were cutaneous, and 6 (13%) were subcutaneous. On the basis of the Patnaik system, 21 (51%) cutaneous tumors were considered grade I, 18 (44%) were considered grade II, and 2 (5%) were considered grade III. On the basis of the Kiupel system, 37 (90%) cutaneous tumors were considered low grade, and 4 (10%) were considered high grade. The prognosis for the 6 subcutaneous tumors was classified as likely resulting in a shorter (2) or longer (4) survival time. Forty tumors were deemed to have been excised with clear margins and 7 with incomplete margins. Local recurrence was not recorded for any dog but was suspected for 1 (2%) tumor, although not confirmed. Interval from tumor excision to follow-up ranged from 30 to 1,140 days (median, 420 days).
Conclusions and Clinical Relevance—The modified proportional margins system resulted in satisfactory local disease control in dogs with MCTs.
Effects of urinary bladder retroflexion and surgical technique on postoperative complication rates and long-term outcome in dogs with perineal hernia: 41 cases (2002–2009)

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Objective—To evaluate the effects of urinary bladder retroflexion (UBR) and surgical technique on postoperative complication rates and long-term outcome in dogs with perineal hernia.

Design—Retrospective case series.

Animals—41 client-owned dogs with perineal hernia that underwent surgery between November 2002 and November 2009.

Procedures—Medical records were reviewed for information on dog signalment, history, physical examination findings, ultrasonographic findings, surgical techniques, intraoperative complications, duration of hospital stay, postoperative complications, and long-term outcome.

Results—31 dogs had no UBR, and 10 dogs had UBR. Internal obturator muscle transposition (IOMT) was performed in 20 dogs, and a cystopexy or colopexy was performed before the IOMT (LapIOMT) in 21. Postoperative complications included tenesmus (n = 8) and urinary incontinence (1). Rates of postoperative complications were not significantly different between the no-UBR and UBR groups or between the IOMT and LapIOMT groups. Thirty-two dogs were free of clinical signs at the time of the study. The median disease-free interval did not differ significantly between dogs in the no-UBR and UBR groups, but it was significantly lower in the LapIOMT group than in the IOMT group. None of the 7 dogs with UBR that were treated without cystopexy developed recurrence of UBR.

Conclusions and Clinical Relevance—UBR was not associated with an increased rate of postoperative complications relative to no UBR and had no effect on the long-term outcome in dogs with perineal hernia. The use of IOMT alone may be recommended for clinical use because LapIOMT offered no clear advantage.
Clinical features, treatment options, and outcome in dogs with thymoma: 116 cases (1999–2010)

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Presented in abstract form at the American College of Veterinary Internal Medicine Forum, New Orleans, June 2012.

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Objective—To describe clinical signs, diagnostic findings, treatment, and outcome and determine factors associated with survival time for dogs with thymoma.

Design—Multi-institutional retrospective case series.

Animals—116 dogs with thymoma.

Procedures—Medical records were searched for information regarding signalment, physical examination findings, results of laboratory testing and diagnostic imaging, medical and surgical treatment, and survival data.

Results—Of the 116 dogs with thymoma, 44 (38%) were Labrador Retrievers and Golden Retrievers. Twenty of 116 (17%) dogs had signs of myasthenia gravis (diagnosis was confirmed for 13 dogs). At the time of thymoma diagnosis, 40 (34%) dogs had hypercalcemia, 8 (7%) dogs had a concurrent immune-mediated disease, and 31 (27%) dogs had another tumor; 16 (14%) dogs developed a second nonthymic tumor at a later date. Tumor excision was performed for 84 dogs, after which 14 (17%) had tumor recurrence; prognosis was good for dogs undergoing a second surgery. Median survival time with and without surgical treatment was 635 and 76 days, respectively. Presence of another tumor at the time of thymoma diagnosis, lack of surgical excision, and higher pathological stage were significantly associated with shorter survival time. Hypercalcemia and presence of myasthenia gravis or megaesophagus at the time of thymoma diagnosis, histopathologic subtype of thymoma, or tumor development at a later date was not associated with survival time.

Conclusions and Clinical Relevance—Dogs with thymoma, even those with a large tumor burden or a paraneoplastic syndrome, had a good prognosis following surgery. Surgical treatment, tumor stage, and the presence of a second tumor at diagnosis influenced survival time.
Onset and quality of sedation after intramuscular administration of dexmedetomidine and hydromorphone in various muscle groups in dogs

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Objective—To compare onset time and quality of sedation achieved by IM injection of hydromorphone and dexmedetomidine into either the semimembranosus, cervical, gluteal, or lumbar muscle groups in dogs.

Design—Prospective, randomized, crossover study.

Animals—7 dogs.

Procedures—Each dog was assigned to receive each treatment in random order, and at least 1 week elapsed between treatments. Dogs were sedated with dexmedetomidine and hydromorphone combined and injected IM into the assigned muscle group. An observer unaware of group assignments assessed physiologic variables every 5 minutes for 30 minutes, and a videographic recording was obtained. Recordings were evaluated by 16 individuals who were unaware of group assignments; these reviewers assessed time to onset of sedation and assigned a sedation score to each dog every 5 minutes.

Results—Resting pulse and respiratory rates did not differ among injection site groups. The semimembranosus site had a significantly higher sedation score than all other sites, and the cervical site had a significantly higher sedation score than the lumbar and gluteal sites. The semimembranosus and cervical sites had significantly shorter time to onset of sedation than did the gluteal and lumbar sites.

Conclusions and Clinical Relevance—When the combination of dexmedetomidine and hydromorphone was used to induce sedation in dogs, rapid and profound sedation was achieved with IM injection into the semimembranosus muscle.
Objective—To evaluate features, treatment, and prognosis associated with retroperitoneal fibrosis that developed after renal transplantation in cats.

Design—Retrospective case series.

Animals—29 cats.

Procedures—Medical records of cats that developed retroperitoneal fibrosis after renal transplantation at the College of Veterinary Medicine, University of Pennsylvania, between 1998 and 2011 were reviewed for signalment, date of transplantation, age, results of urine and blood analyses, blood pressure at the time of diagnosis, infectious disease and medication anamneses, anesthetic protocols, and intraoperative complications.

Results—Of 138 transplant recipients, 29 (21%) developed clinically important retroperitoneal fibrosis. Nineteen (66%) were male, and median age at the time of renal transplantation was 8 years (range, 4 to 13 years). Median number of days after transplantation to diagnosis of retroperitoneal fibrosis was 62 (range, 4 to 730 days; mean, 125 days). The most common clinical signs were lethargy and anorexia. All affected cats were azotemic (BUN concentration > 32 mg/dL; creatinine concentration > 2.0 mg/dL) and anemic (PCV < 35%) at the time of retroperitoneal fibrosis diagnosis, although cats were nonazotemic at the time of discharge following transplantation, and anemia was less pronounced. Twenty-five cats successfully underwent surgical ureterolysis in which scar tissue was dissected away from the allograft ureter to relieve extraluminal compression. Retroperitoneal fibrosis recurred in 6 (22%) cats a median of 180 days (range, 8 to 343 days) following the original diagnosis and was treated successfully by repeated ureterolysis.

Conclusions and Clinical Relevance—Retroperitoneal fibrosis occurred in a substantial percentage of feline renal transplant recipients and should be considered a differential diagnosis in any feline renal transplant recipient with clinicopathologic findings, imaging abnormalities, or signs suggestive of obstructive uropathy.
Thoracoscopic pericardial window for management of pericardial effusion in 15 dogs

Journal of Small Animal Practice

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Objectives

To report short-term complications and long-term outcomes of thoracoscopic pericardial window for management of pericardial effusion in dogs.

Methods

Retrospective study of dogs in which thoracoscopic pericardial window was performed using a three-cannula technique. Surgery time, complications, postoperative management, area of resected pericardium, histopathology results and outcome were evaluated.

Results

Diagnoses included dogs with idiopathic pericardial effusion (n = 10), cardiac mass (n = 4) and mesothelioma (n = 1). One case required conversion to sternotomy. Median thoracoscopic surgery time was 52.5 (range, 45-80) minutes. Complications occurred in four (26%) cases. Median time to discharge was one (range, 1-6) day. Of dogs with idiopathic pericardial effusion, one is alive at 150 days, one was lost to follow-up at 180 days while eight were euthanased of which five were for unrelated reasons. All dogs with neoplastic causes died or were euthanased because of their illness. Median survival time for dogs with idiopathic pericardial effusion (635 days; range, 70-1165) was significantly longer than that for dogs with neoplasia (30 days; range, 1-107).

Clinical Significance

Thoracoscopic pericardial window is of low morbidity with short surgery and hospitalisation times. It provides good long-term control of idiopathic pericardial effusion but short-term palliation of clinical signs in dogs with neoplastic disease.
Comparison of surgical duration of canine ovariectomy and ovariohysterectomy in a veterinary teaching hospital

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Objective

To prospectively evaluate ovariectomy and ovariohysterectomy via midline coeliotomy when being employed by supervised final year veterinary students for the purpose of routine canine neutering.

Methods

One hundred and eight female dogs of various breeds, presented to a veterinary teaching hospital for neutering, were randomly allocated to one of two surgery groups, ovariectomy or ovariohysterectomy. The specified procedure was performed by a supervised final year veterinary student. If the duration of surgery exceeded 2 hours or if major surgical or anaesthetic complications occurred, the supervising surgeon intervened to complete the procedure.

Results

Data analysed included age, weight, time from first incision to start of closure, duration of closure, total surgical time and length of incision. Fifty-four dogs underwent each procedure. There was no significant difference between the two surgery groups for any of the measured variables.

Clinical Significance

Ovariectomy is not associated with shorter surgical times or smaller abdominal incisions than ovariohysterectomy when employed by inexperienced surgeons. As no major complications novel to ovariectomy occurred in this cohort of dogs, this study adds support to the existing literature indicating that ovariectomy is an acceptable alternative to ovariohysterectomy for canine neutering.
Intraoperative identification of canine hepatocellular carcinoma with indocyanine green fluorescent imaging

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Objectives
To evaluate the feasibility of high-sensitivity near-infrared fluorescence imaging with indocyanine green for intraoperative identification of hepatocellular carcinoma in dogs.

Methods
Twelve hepatic nodules were surgically resected from six dogs. In each dog, 0 · 5 mg/kg indocyanine green was intravenously injected for 12 to 18 hours preoperatively. The hepatic nodules were investigated under laparotomy using a near-infrared fluorescence imaging light camera system prior to resection. Resected nodules were histopathologically diagnosed and their fluorescence images were evaluated.

Results
Of the 12 hepatic nodules, 6 were diagnosed as hepatocellular carcinoma and 6 as nodular hyperplasia. Indocyanine green-fluorescence was observed in four large hepatocellular carcinoma nodules and one case of nodular hyperplasia, whereas it was absent in the remaining nodules. The sensitivity and positive predictive values of indocyanine green fluorescent imaging for hepatocellular carcinoma was 71 · 4 and 80 · 0%, respectively. Complete resection of the hepatic masses was achieved in all dogs.

Clinical Significance
Near-infrared fluorescence imaging may be feasible for intraoperative mapping of hepatocellular carcinomas in hepatic lobes and may help increase the chance of complete resection of hepatocellular carcinoma in dogs.
A Comparison of Microscopic Ink Characteristics of 35 Commercially Available Surgical Margin Inks

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Veterinary Surgery 42 (2013) 901–908

Objective: To compare microscopic characteristics of commercially available surgical margin inks used for surgical pathology specimens.

Study Design: Prospective in vitro study.

Sample Population: Thirty-five different surgical margin inks (black, blue, green, orange, red, violet, and yellow from 5 different manufacturers).

Methods: Inks were applied to uniform, single-source, canine cadaveric full-thickness ventral abdominal tissue blocks. Tissue blocks and ink manufacturers were randomly paired and each color was applied to a length of the cut tissue margin. After drying, tissues were fixed in formalin, and 3 radial slices were obtained from each color section and processed for routine histologic evaluation, yielding 105 randomly numbered slides with each manufacturer’s color represented in triplicate. Slides were evaluated by 5 blinded, board-certified veterinary anatomic pathologists using a standardized scoring scheme. Statistical analyses were performed to evaluate for ink manufacturer effects on scores, correlation among different subjective variables, and pathologist agreement.

Results: Black and blue had the most consistently high scores whereas red and violet had the most consistently low overall scores, across all manufacturers. All colors tested, except yellow, had statistically significant differences in overall scores among individual manufacturers. Overall score was significantly correlated to all other subjective microscopic scores evaluated. The average Spearman correlation coefficient among the 10 pairwise pathologists overall ink scores was 0.60.

Conclusions: There are statistically significant differences in microscopic ink characteristics among manufacturers, with a notable degree of inter-pathologist agreement.
Evaluation of two novel self-anchoring barbed sutures in a prophylactic laparoscopic gastropexy compared with intracorporeal tied knots

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Veterinary Surgery

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Objective

To compare laparoscopic gastropexy using 2 self-anchoring barbed sutures to gastropexy using laparoscopically tied intracorporeal knots.

Study Design

Prospective, randomized controlled, clinical trial.

Animals

Dogs (n = 30) weighing >16 kg.

Methods

Dogs were randomly assigned to 1 of 3 laparoscopic gastropexy groups: group 1 (controls), intracorporeal 2-0 polydioxanone sutures (PDSII, Ethicon); group 2, barbed suture (0 Quill™ PDO; Angiotech); and group 3, barbed suture (2-0 V-Loc™ 180; Covidien). Gastropexy suturing time (GST) and total surgery time (TST) were recorded for each dog. Complications were recorded. Each dog was examined by ultrasound (1, 3, and 6 months postoperatively) to ensure persistence of the gastropexy. One dog each in group 2 and group 3 had 2nd look laparoscopy to evaluate the gastropexy.

Results

All gastropexies were intact at 6 months. Mean GST was significantly longer for group 1 (36 minutes; range, 25–46 minutes) than for groups 2 (20 minutes; range, 16–37 minutes) and 3 (19 minutes; range, 15–30 minutes; P < .05), which were not significantly different from each other. Likewise TSTs for groups 2 and 3 were significantly shorter than for group 1 (P < .05).

Conclusion

Barbed sutures (Quill™ and V-Loc™) allowed for effective intracorporeal laparoscopic suturing of an incisional gastropexy without tying intracorporeal knots.
Clinical Outcome of 42 Dogs With Scapular Tumors Treated by Scapulectomy: A Veterinary Society of Surgical Oncology (VSSO) Retrospective Study (1995–2010)

Veterinary Surgery 42 (2013) 943–950

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Objective:
To report signalment, clinical signs, preoperative staging tests, histologic diagnosis, surgical, and oncologic outcomes including postoperative limb use, in dogs with scapular tumors treated by scapulectomy.

Study Design:
Retrospective case series

Animals:
Dogs (n¼42) with scapular tumors.

Methods:
Medical records (1995–2010) from 6 hospitals were searched for dogs with scapular tumors treated by scapulectomy. Data retrieved were: signalment, weight, percentage of scapula removed, histologic diagnosis, postoperative limb use, adjunctive therapy, disease free interval (DFI), and survival time (ST). Individual variables were modeled with a Cox proportional hazard model accounting for censoring to determine risk factors for decreased DFI and ST. For categorical variables, Kaplan–Meier survival plots as well as mean and median survival times (MSTs) were calculated.

Results: Subtotal scapulectomy was performed in 18 dogs (42.9%). Osteosarcoma (OSA) was diagnosed in 27 dogs (64.3%). Limb use was evaluated immediately after surgery in 41 dogs. Information on limb use at other times (1, 2, 3, and >3 months) postoperatively was also available for some dogs and was good to excellent overall. Only adjunctive chemotherapy had a positive significant effect on DFI (P¼.00011) and ST (P¼.0003).

Conclusion:
Canine scapular tumors can be treated effectively by scapulectomy and limb use is fair to excellent for most dogs. OSA was the most common scapular tumor. Overall prognosis for scapular OSA is similar to appendicular OSA at other sites and use of adjunctive chemotherapy prolonged the overall DFI and MST.
Objective:
To report long-term clinical outcome in dogs treated for single congenital extrahepatic portosystemic shunt (CEHPSS) with an ameroid ring constrictor (ARC) and to identify perioperative variables associated with outcome.

Study Design:
Retrospective, multi-institutional study.
Animals:
Dogs (n=206) with CEHPSS.

Methods:
Medical records of dogs with CEHPSS treated by ARC were reviewed for perioperative and short-term (<1 month) data. Long-term follow-up information was obtained by telephone interview with referring veterinarians and/or owners. Kaplan–Meier analysis was used to estimate median survival time. Factors associated with short-term survival, outcome grade, and total survival time were identified.

Results:
Fifteen dogs died <1 month after ARC placement. Follow-up data were obtained for 112 of 191 dogs that survived >1 month; median follow was 54 months (range, 1–175 months) and 103 (92%) dogs had no clinical signs. Estimated median survival time was 152 months. Variables significantly associated with short-term survival included being intact and a low total white blood cell (WBC) count. Variables significantly associated with a successful outcome included having surgery later in the study period and negative postoperative nuclear scintigraphy. In the long-term survival analyses, intact dogs and those with higher WBC counts and occlusion pressures and lower bile acid concentrations were more likely to survive.

Conclusions:
Dogs with CEHPSS treated by ARC generally have a good prognosis and prolonged postoperative survival.
Evaluation of Crural Release and Ischial Osteotomy for Relief of Tension in the Repair of Large Segmental Urethral Defects in Male Cats

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Objective:
To examine if the tension at the site of a urethral anastomosis can be relieved by performing either a crural release technique or an ischial osteotomy technique.

Study Design:
Cadaveric study and 2 case reports.

Animals:
Adult male cat cadavers (n=18).

Methods:
Cats were divided into 2 groups; crural release (n=9) and ischial osteotomy (n=9). In each group, 20%, 25%, and 30% of the pelvic urethra was excised in 3 cats. The length of the urethral defect was measured after excision of the urethral segment, and after approximation, before and subsequent to the tension relieving technique performed. Two clinical cases are described.

Results: Both crural release and ischial osteotomy were effective in relieving the tension encountered at the urethral anastomosis after removal of 20% of the urethral length. In the ischial osteotomy group, apposition without tension after removing up to 30% of the intrapelvic urethral length was easily achieved. A similar technique was successfully used in 2 clinical cases.

Conclusion:
Crural release and ischial osteotomy techniques allow approximation and tension free anastomosis of large segmental defects of the pelvic urethra in cats.
Combined Z-plasty and phalangeal fillet for reconstruction of a large carpal defect following ablative oncologic surgery

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Keywords
Z-plasty, phalangeal fillet, extremity, wound, carpus

Summary
A six-year-old Labrador Retriever was presented for management of a 2 x 2 cm cutaneous mass over the dorsal aspect of the carpus. A fine needle aspirate performed by the referring veterinarian was consistent with a mast cell tumour. The ipsilateral prescapular lymph node was enlarged. Preoperative staging did not reveal any evidence of metastasis. Wide excision of the mass and prescapular lymphadenectomy were performed. The large carpal wound was reconstructed using a combination of Z-plasty and phalangeal fillet using the first digit (dewclaw); about 20% of the original defect was allowed to heal by second intention. Histopathology was consistent with a grade II mast cell tumour with metastatic spread to the lymph node. Vinblastine and prednisolone adjuvant chemotherapy was instituted. Functional and cosmetic outcome were good; only a small 1 cm area of alopecia persisted. The dog was disease-free 53 months after surgery. A combination of Z-plasty and a phalangeal fillet using the first digit was a successful treatment to reconstruct a large wound over the dorsal aspect of the carpus in this case.

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