

Interpretive Summaries

SMALL ANIMALS

Long-term outcome of gonadectomy performed at an early age or traditional age in cats

The objective of our study was to determine long-term results and complications of gonadectomy performed at an early age (prepubertal) or at the traditional age in cats. Cats ($n = 263$) from animal shelters were allotted to 2 groups on the basis of estimated age at time of surgery (traditional age, ≥ 24 weeks old; prepubertal, < 24 weeks old). Adoptive owner information was obtained from shelter records, and telephone interviews were conducted with owners to determine physical or behavioral problems observed in the cats after adoption. Follow-up information was obtained from attending veterinarians for cats with complex problems or when owners were uncertain regarding the exact nature of their cat's problem.

Compared with traditional-age gonadectomy, prepubertal gonadectomy did not result in an increased incidence of infectious disease, behavioral problems, or problems associated with any body system, during a median follow-up period of 37 months. Additionally, rate of retention in the original adoptive household was the same for cats that underwent prepubertal gonadectomy as those that underwent traditional-age gonadectomy.

Results suggest that prepubertal gonadectomy may be performed safely in cats without concern for increased incidence of physical or behavioral problems for at least a 3-year period after gonadectomy.—L. M. Howe et al (*J Am Vet Med Assoc* 2000;217:1661–1665).

Evaluation of efficacy of selamectin and fipronil against *Ctenocephalides felis* in cats

A randomized controlled trial was conducted to evaluate efficacy of monthly administration of selamectin and fipronil against *Ctenocephalides felis* in cats. Thirty-six healthy cats known to be free of fleas were infested with 100 unfed adult fleas on days -28 and -21 . On days 0, 30, 60, 90, and 120, sixteen cats (8 pairs/treatment group) were treated by topical administration of selamectin (6 mg/kg [2.7 mg/lb] of body weight) or fipronil (7.5 mg/kg [3.4 mg/lb]). Four control cats (2 pairs) were not treated. On day -6 and every 2 weeks after initial treatment, comb counts were performed to detect fleas. Flea counts were recorded, and fleas (≤ 50) that had been removed were replaced

onto the cat. On day 89, fleas were not replaced. On day 91 and every 7 days until the end of the study (day 150), cats were challenged with 20 adult fleas. Flea counts were compared between and within treatments.

Fourteen days after treatment, geometric mean flea counts were reduced by 71.2% by fipronil treatment and 35.3% by selamectin treatment. Both treatments resulted in 97 to 98% reduction in flea counts on day 29 and 99.8 to 100% reduction from day 44 to the end of the study.

Results suggest that selamectin is as effective as fipronil in treating infestation in cats housed for 3 months in a flea-infested environment under conditions known to support the flea life cycle and in protecting against subsequent weekly challenges with *C felis* for an additional 2 months.—L. K. Ritzhaupt et al (*J Am Vet Med Assoc* 2000;217:1666–1668)

Evaluation of efficacy of selamectin, fipronil, and imidacloprid against *Ctenocephalides felis* in dogs

A randomized controlled trial was performed to evaluate efficacy of monthly administration of selamectin, fipronil, and imidacloprid against *Ctenocephalides felis* in dogs. Forty-four healthy dogs known to be free of fleas were infested with 100 unfed adult fleas on days -28 and -21 . On days 0, 30, 60, 90, and 120, dogs (12/group) were treated by topical administration of selamectin (6 mg/kg [2.7 mg/lb] of body weight), fipronil (7.5 mg/kg [3.4 mg/lb]), or imidacloprid (10 mg/kg [4.5 mg/lb]); 8 untreated dogs were used as controls. On day -6 and every 2 weeks after initial treatment, comb counts of viable adult fleas were made, and fleas (≤ 50 /dog) were replaced onto the dog from which they were removed. On day 89, fleas were not replaced. On day 91 and every 7 days until the end of the study, dogs were challenged with 20 adult fleas.

Fourteen days after initial treatment, geometric mean flea counts were reduced by 97.5 to 99.1% for all treatments, compared with pretreatment counts on day -6 . Selamectin, fipronil, and imidacloprid reduced geometric mean flea counts by 99.7 to 100% from day 29 to the end of the study.

Results suggest that selamectin is as effective as fipronil and imidacloprid in reducing *C felis* infestation in dogs housed for 3 months in a flea-infested environment under conditions known to support the flea life cycle and in protecting against subsequent weekly challenges with *C felis* for an additional 2 months.—L. K. Ritzhaupt et al (*J Am Vet Med Assoc* 2000;217:1669–1671).

Effect of citrate concentration on coagulation test results in dogs

We examined the effects of citrate anticoagulant concentration on clotting times in dogs. Blood was collected from 30 healthy dogs and 12 dogs with hereditary hemostatic disorders into collection tubes containing 3.2 or 3.8% citrate. Prothrombin time (PT), activated partial thromboplastin time (APTT), and fibrinogen concentrations were measured in paired samples by use of 1 photo-optic and 2 mechanical clot-detection devices. Coagulant activities of factor VIII (FVIII:C) and IX (FIX:C) were measured in paired samples, using manual tilt-tube and mechanical clot-detection methods. Significant differences were not detected between median PT, fibrinogen concentration, FVIII:C, or FIX:C in 3.2% citrate, compared with 3.8% citrate in healthy or factor-deficient dogs, using any device. The median APTT was significantly longer in 3.2% citrate, using 1 mechanical clot-detection device. Our results indicate that 3.2 and 3.8% citrate may be used interchangeably as anticoagulants for coagulation tests in dogs.—T. Stokol et al. (*J Am Vet Med Assoc* 2000; 217:1672–1677).

Evaluation of the effect of limited food consumption on radiographic evidence of osteoarthritis in dogs

Control and limit-fed Labrador Retrievers that received 25% less food than control dogs were observed from 8 weeks to 8 years of age. At 8 years of age, radiographic evidence of osteoarthritis in shoulder, elbow, hip, and stifle joints was strikingly less in the limit-fed dogs. In control dogs (n = 22), osteoarthritis was detected in shoulder joints (86%), elbow joints (36%), hip joints (68%), and stifle joints (9%). In limit-fed dogs (n = 21), osteoarthritis was detected in shoulder joints (57%), elbow joints (19%), and hip joints (14%), but not in stifle joints. In all instances, osteoarthritis was more severe in control dogs, compared with limit-fed dogs. Results suggest that limit feeding of susceptible dogs during an 8-year period minimized osteoarthritis in shoulder, elbow, hip, and stifle joints.—R. D. Kealy et al (*J Am Vet Med Assoc* 2000;217:1678–1680).

Use of ciliogenesis in the diagnosis of primary ciliary dyskinesia in a dog

A 2.5-year-old male Bullmastiff with a history of chronic intractable rhinorrhea and cough was examined. Chronic bronchopneumonia and chronic rhinitis were diagnosed. Tracheal mucociliary clearance, assessed by use of scintigraphy, was not detected. Asthenoteratospermia was detected on microscopic examination of spermatozoa. Tracheal and nasal mucosal biopsy specimens were processed for functional and ultrastructural ciliary examination. Functional in vitro analysis revealed that the beat frequency of nasal cilia was severely decreased and that ciliary beat was asynchronous. Transmission electron

microscopy revealed an absence of the central pair of microtubules in more than half of the cilia in transverse section. Induction of ciliogenesis in cell culture, which has been proven in humans to allow for differentiation of primary and secondary ciliary dyskinesia, was used to confirm the ciliary abnormalities in this dog.—C. Clercx et al (*J Am Vet Med Assoc* 2000;217:1681–1685).

Visceral leishmaniasis in a dog from Maryland

An 11-year-old male Toy Poodle was evaluated for lethargy, signs of depression, and weight loss of 2 months' duration. There was no known travel history outside of Maryland or Washington DC. Results of a CBC included normocytic, normochromic nonregenerative anemia, neutropenia, and lymphopenia. Results of serum biochemical analysis revealed high BUN concentration, hyperproteinemia, hypoalbuminemia, and high aspartate aminotransferase, alanine aminotransferase, and amylase activities. A bone marrow aspirate was performed, and macrophages containing protozoa consistent with *Leishmania* spp were detected.

The clinical signs and diagnostic test results were similar to other reported cases of leishmaniasis in dogs. Most interesting in this dog was the possible sources of infection. The owner of the dog had traveled to Greece every 2 years throughout the dog's life. The source of infection for the dog remains unclear but may have been the owner or an infected sand fly imported from Greece in the owner's luggage. Alternatively, this may be the first reported case of endemic leishmaniasis in a dog in the state of Maryland.—S. M. Eddlestone (*J Am Vet Med Assoc* 2000;217:1686–1688).

EQUINE

Career racing performance in Thoroughbreds treated with prosthetic laryngoplasty for laryngeal neuropathy: 52 cases (1981–1989)

A study of racing performance before and after prosthetic laryngoplasty was performed for 52 Thoroughbred racehorses. Individual career race records were analyzed. Horses with an established baseline race record had an obvious decline in performance during the 6-month period before surgery. As a group, these horses had improved performance after surgery, relative to performance in the 1 to 4 races immediately before surgery, but did not attain their previous baseline performance levels except for racing speed. Factors associated with failure to attain baseline levels of performance included other racing-related injuries and disorders, complications of surgery, and age. Thirty-one of 52 (59.6%) horses won at least 1 race after surgery, and 12 (23%) of these horses won at least 3 races. Performance of inexperienced horses after surgery was at least equal to that of experienced horses.—E. Strand et al (*J Am Vet Med Assoc* 2000;217:1689–1696).

RUMINANTS/CAMELIDS

Hepatic effects of halothane and isoflurane anesthesia in goats

To determine hepatic effects of halothane and isoflurane anesthesia, 24 healthy 9-month-old female goats were sedated with xylazine and ketamine and anesthetized with halothane (n = 12) or isoflurane (12) while undergoing tendon surgery. End-tidal halothane and isoflurane concentrations were maintained at 0.9 and 1.2 times the minimal alveolar concentrations, respectively, and ventilation was controlled. Venous blood samples were collected approximately 15 minutes after xylazine was administered and 24 and 48 hours after anesthesia, and serum aspartate aminotransferase (AST), sorbitol dehydrogenase (SDH), alkaline phosphatase (ALP), and γ -glutamyltransferase (GGT) activities and bilirubin concentration were measured. Goats were euthanatized 25 or 62 days after anesthesia, and postmortem liver specimens were submitted for histologic examination.

All goats recovered from anesthesia and survived until euthanasia. Serum SDH, GGT, and ALP activities and bilirubin concentration did not increase after anesthesia, but serum AST activity was significantly increased. However, serum hepatic enzyme activities were within reference limits at all times in all except 1 goat in which serum AST activity was high 24 and 48 hours after anesthesia. This goat had been anesthetized with halothane and had the longest duration of anes-

thesia. No clinically important abnormalities were seen on histologic examination of liver specimens. Results suggest that use of halothane or isoflurane for anesthesia in young healthy goats is unlikely to cause hepatic injury.—M. McEwen et al (*J Am Vet Med Assoc* 2000; 217:1697–1700).

Hyperglycemia, hypernatremia, and hyperosmolarity in 6 neonatal llamas and alpacas

Six neonatal camelids were examined because of hyperglycemia, hyperosmolarity, and hypernatremia. Infectious disease, restricted fluid intake, prematurity, and stress all appeared to be contributory factors. Neurologic signs predominated and included stupor, ataxia, base-wide stance, and fine head tremors. Blood glucose concentration was > 600 mg/dl, and blood sodium concentration was > 168 mEq/L; azotemia and metabolic acidosis were also seen. Treatment efforts were directed toward correcting metabolic abnormalities and eliminating microbial infection. Cerebral edema did not develop despite administration of large volumes of fluids, probably because the hypernatremia was not long-standing, and a portion of the administered water was lost secondary to glucose diuresis. Three crias, all of which had minimal signs of sepsis, recovered—C. K. Cebra (*J Am Vet Med Assoc* 2000; 217:1701–1704).