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describe the individual animal therapy. With the majority of information describing colony health identification and management, the book’s primary audience, laboratory animal veterinarians, have been appropriately addressed: veterinarians in other areas of practice (e.g., companion exotic mammal) may be left wanting more. Future editions should include a chapter on ferrets, which I believe would be a welcomed addition for all audiences. The 6 species covered in this edition include the most popular small mammal species used in research.

Aside from the primary audience of laboratory animal veterinarians, I see this text appealing to 2 groups of exotic animal practitioners. First, veterinarians who treat any of the species covered in this text with regularity will find that Pathology of Laboratory Rodents and Rabbits, 3rd Edition, fills in gaps and enhances standard text in exotic animal medicine. Second, practitioners who treat reptiles may find themselves advising clients on the veterinary care of rodent feeder colonies. In summary, for selected practitioners, this text will be a useful addition to their library.

Abstracts

Brown DR, Wendland LD, Rotstein DS: Mycoplasmosis in green iguanas (Iguana iguana). J Zoo Wild Med 38(2):348-351, 2007

Two subadult green iguanas were examined by necropsy because of a clinical history of pneumonia and rear limb weakness. Prominent findings included multifocal abscesses of the coccygeal and thoracic vertebrae. Mycoplasma iguanae, a previously unknown Mycoplasma species, was cultured in high numbers from the abscesses. The purpose of the study was to assess the susceptibility of iguanas to acute M. iguanae mycoplasmosis. In an experimental infection study, juvenile iguanas were inoculated with M. iguanae intravenously or by instillation into the nares. Blood samples obtained at 1, 2, 3, 4, 6, 8, and 12 weeks postinoculation were all culture negative for mycoplasma. Gross anatomic and histologic findings at necropsy 12 weeks postinoculation were unremarkable. Mycoplasmas were cultured in high numbers from the posterior choanae and upper trachea of some inoculated and control iguanas at necropsy.

DNA gene sequencing of these isolates revealed they were M. insons proposed species nova M. iguanae. M. iguanae was not recovered from other tissues, and the iguanas did not seroconvert. Enrofloxacin was bactericidal for M. iguanae at 20 ng/mL in vitro, indicating it may be useful to treat natural M. iguanae infections in iguanas. However, because M. insons was recovered readily by culture from almost half of the healthy iguanas examined, it is suggested that this organism is a commensal among the normal microbial flora of the upper respiratory tract.

Chen S, Bartick T: Resection and use of a cyclooxygenase-2 inhibitor for treatment of pancreatic adenocarcinoma in a cockatiel. J Am Vet Med Assoc 228(1):69-73, 2006

A 5-year-old male cockatiel (Nymphicus hollandicus) was referred for evaluation and treatment of progressive dyspnea of 1 week’s duration. On auscultation of the lungs and air sacs, crackles were detected. The abdomen was distended and fluctuant on palpation. Eleven milliliters of clear yellow fluid were collected via abdominocentesis; findings were consistent with a pure or modified transudate. Radiography and ultrasonography examinations revealed a soft tissue mass in the caudalventral portion of the coelom. Bloodwork showed mild hemoconcentration, mild lipemia, hyperphosphatemia, high creatinine kinase activity, hypoproteinemia, and low bile acid concentration. Exploratory surgery of the coelomic cavity was performed, and the neoplasm was identified between the distal portion of the pancreas and the ascending loop of the duodenum and subsequently excised. Histologic examination of the neoplasm was consistent with a high-grade pancreatic exocrine adenocarcinoma. Celecoxib, a cyclooxygenase-2 inhibitor nonsteroidal antiinflammatory drug, was administered (10 mg/kg by mouth every 24 hours) for pain management and potentially antineoplastic activity. Approximately 135 days after surgery, the cockatiel was evaluated for a 2-day history of recurrent dyspnea. During anesthesia for radiographic evaluation, the bird went into respiratory arrest and died. At nec-
ropy, multiple coelomic masses invaded the liver and lungs bilaterally, and serosanguineous fluid was present throughout the coelomic cavity. The authors state that cyclo-oxygenase-2 inhibitors should be used cautiously because they can adversely affect renal function by decreasing renal prostaglandin synthesis. On histologic examination of the bird of this report, acute diffuse renal tubular necrosis was detected, and nonsteroidal antiinflammatory drug–induced renal damage was considered to be a possible etiology for this finding.

Garner MM, Ramsell K, Schoemaker NJ, et al: Myofasciitis in the domestic ferret. Vet Pathol 44:25-38, 2007

Since late 2003, a previously unrecognized inflammatory disease process involving muscle and fascia has been diagnosed in several ferrets at Northwest Zoo Path. This report describes the condition in 17 ferrets. It is a disease of young ferrets, characterized by rapid onset of clinical signs including fever, lethargy, recumbency, ataxia, posterior paresis, and pain when moving. Bloodwork revealed mild to marked leukocytosis with mature neutrophilia and mild to moderate, usually nonregenerative, anemia. Common serum abnormalities included mild to moderate elevation of serum alanine aminotransferase, mild hyperglycemia, and mild hypoaalbuminemia. Interestingly, there is an absence of elevation in creatinine kinase and aspartate aminotransferase values. Treatment was ultimately unsuccessful in all cases. Gross lesions on necropsy included moderate to severe atrophy of muscles in the limbs and lumbar regions, red-white mottling of the esophagus along its entire length accompanied by mild atrophy of the tongue, and splenomegaly. Histologically, moderate to severe suppurative to pyogranulomatous inflammation was seen in the skeletal muscle and the fascia at multiple sites including esophagus, heart, limbs, body wall, head, and lumbar regions. Myeloid hyperplasia of spleen and/or bone marrow is also a prominent feature. Affected myofibers had mild to severe sarcoplasmic and mitochondrial swelling, and disruption of myofibrils by edema. No immunohistochemical staining for Toxoplasma gondii, Sarcocystis neurona, Neospora caninum, or feline or ferret coronavirus antigen was detected. Bacterial and viral cultures, electron microscopy, and polymerase chain reaction were negative for a variety of other infectious agents. A heritable basis for myofasciitis seems unlikely because affected ferrets are from different breeding facilities. An acquired immune-mediated process is a possible cause for myofasciitis. The only known commonality among all of the ferrets in this report is the administration of at least 1 dose of commercial canine disse-temper vaccine licensed for use in ferrets (Fervac-D; Merck-Merial Inc., Duluth, GA). Myopathies associated with administration of aluminum adjuvant vaccines have been shown to have aluminum hydroxide deposits in the foci of muscle damage in other species.

Heatley JJ, Mitchell MM, Roy A, et al: Disseminated mycobacteriosis in a bald eagle (Haliaeetus leucocephalus). J Avian Med Surg 21(3):201-209, 2007

A free-living, mature bald eagle was referred after being found on the ground. On presentation, the eagle was only partially weight-bearing on the left foot. There was a soft tissue swelling that encompassed the left tibiotarsal-tarsometatarsal joint. Radiographic abnormalities included round, opaque, nodular, soft-tissue opacities throughout the lungs, hepatomegaly, and lysis of the intercondylar region of the left hock joint. Results of the complete blood count showed leukocytosis (78,700 cells/μL), heterophilia, monocytosis, and a nonregenerative anemia. Treatment consisted of enrofloxacin, metronidazole, and itraconazole. Culture results of a fine-needle aspirate of the left hock swelling were negative for bacterial or fungal growth. Endoscopic examination was obscured by yellow caseated material found throughout the field of view. Acid-fast staining of biopsy samples were strongly positive. Because of the poor prognosis associated with mycobacterial disease and the zoonotic potential of this organism, euthanasia was considered the most appropriate option. At necropsy, multifocal to coalescing granulomas had replaced most of the pulmonary tissue and were present throughout the air sacs. The swollen left hock also contained numerous subcutaneous granulomas. All granulomas had mixed mononuclear cell infiltrates and large necrotic centers surrounded by epithelioid macrophages that were filled with acid-fast bacteria. Results of DNA analysis revealed the organism to be either Mycobacterium avium avium or Mycobacterium avium paratuberculosis. Mycobacteriosis primarily affects the intestine, liver, and spleen of birds. The route of infection in most cases is by ingestion with secondary hematogenous spread of mycobacteria. Most indirect diagnostic tests for mycobacteriosis are unreliable in zoological and companion birds.

Pennick KE, Latimer KS, Brown CA, et al: Aleutian disease in two domestic striped skunks (Mephitis mephitis). Vet Pathol 44:687-690, 2007

Aleutian mink disease parvovirus (ADV) is known to infect several members of the Mustelidae family, with mink and ferrets being the most commonly reported hosts.
Aleutian disease in adult animals is characterized by hypergamma-globulinemia and immune-complex disease. Lymphoplasmacytic infiltration of various organs, immune complex deposits in blood vessels, and severe glomerulonephritis ultimately lead to death. Ferrets are the only known companion animals capable of developing natural disease as a result of ADV infection. Natural ADV infection and disease have not been documented in either wild or companion striped skunks. This report describes the use of polymerase chain reaction and DNA in situ hybridization to diagnose ADV DNA in various tissue specimens from 2 companion striped skunks. Similar antemortem clinical chemistry findings in both skunks included hyperglobulinemia with a decreased A:G ratio and increased activity of hepatobiliary enzymes. Histologic diagnoses included severe necrotizing suppurative and lymphoplasmacytic cholangiohepatitis and marked multifocal renal tubular necrosis, among other findings. The source of the naturally acquired ADV infection in these skunks is speculative but could be associated with infected breeding facilities, commercial pet supply facilities, or their ultimate housing, where they could be exposed to other ADV-infected mustelids.

Royal LW, Grafinger MS, Lascalles BDX, et al: Internal fixation of a femur fracture in an American bullfrog. J Am Vet Med Assoc 230(8):1201-1204, 2007

An adult male American bullfrog (*Rana catesbeiana*) was evaluated after vehicular trauma. No other abnormalities other than a closed-midshaft, comminuted fracture of the left femur were detected. The frog was anesthetized by immersion in a solution of tricaine methanesulfonate dissolved in deionized water. The fracture was repaired by use of an internal fixation technique that included Kirschner wires, a positive-profile pin secured along the femur with encircling sutures, and polymethylmethacrylate molded around the entire apparatus. This fixation method allowed the frog to be returned immediately to an aquatic environment during the rehabilitation process. There were no major complications during the postoperative rehabilitation period, and the bullfrog was released back into the wild 1 year after surgery. Fracture healing in amphibians begins as a blastema of fibroblast proliferation at the site of the fracture hematoma. The blastema invades the hematoma and transforms it into cartilage. Within the callus, calcification occurs in the vascular channels created by blood vessels. Complete calcification can take months.

Simone-Freilicher E: Use of isoxsuprine for treatment of clinical signs associated with presumptive atherosclerosis in a yellow-naped Amazon parrot (*Amazona ochrocephala auripalii*). J Avian Med Surg 21(3):215-219, 2007

A 35-year-old female yellow-naped Amazon parrot was presented for gradually increasing inappetance, ataxia, weakness, and lethargy. The owner noted that the bird was unable to prehend food with its feet and was spending more time on the cage floor. The bird had been in the owner’s home for approximately 18 months and, for 34 years before that, had been maintained on a diet of sunflower seeds and peanuts. Results of the plasma biochemical analysis were unremarkable except for a mild increase in aspartate aminotransferase and decrease in phosphorus concentration. Radiographic and ultrasonographic findings were strongly suggestive of atherosclerosis. Atherosclerosis is a type of arteriosclerosis in which the inner and middle arterial walls become thickened by lipid deposits with or without focal calcification. In birds, the changes are usually located in the thoracic aorta and proximal aspect of the brachiocephalic arteries. Older birds, particularly Amazon and African gray parrots, seem to be at higher risk for the disease. Isoxsuprine, a peripheral vasodilator demonstrated to be of benefit in humans with intermittent limb pain, weakness, and lameness secondary to occlusive vascular disease, was selected for treatment. The dose of 10 mg/kg by mouth every 24 hours was based on published dosages of isoxsuprine used in raptor species. Isoxsuprine results in vascular smooth muscle relaxation, although the exact mechanism of action is not known. The bird’s clinical signs resolved during treatment but recurred after varying periods of time when the medication was intermittently discontinued. Nearly 3 years after the initial examination, the parrot was doing well on isoxsuprine therapy, with normal prehension of food with its feet and no recurrence of clinical signs.

Wolf KN, Lock B, Carpenter JW, Garner MM: *Baylisascaris procyonis* infection in a Moluccan cockatoo (*Cacatua moluccensis*). J Avian Med Surg 21(3):220-225, 2007

An adult female Moluccan cockatoo was evaluated because of a 10-day history of progressive ataxia and weakness. The onset of clinical signs was marked by the acute development of a right-sided head tilt and ataxia, with the bird repeatedly falling backward. The bird became progressively weaker and was recumbent for 5 days before presentation. The owner had adopted the bird 9
months before. The only unusual occurrence in the recent history was that the cockatoo had escaped from its cage on 3 consecutive days about 3 weeks before onset of clinical signs. Questioning about possible hazardous items in the room revealed the presence of an empty cage that had housed juvenile raccoons several months earlier. On physical examination, the cockatoo was dehydrated, in lateral recumbency, profoundly weak, and appeared stuporous. Bloodwork revealed anemia, lymphopenia, and monocytosis. Plasma biochemical analysis revealed hyperglobulinemia, and increased concentrations of both aspartate transferase and creatinine kinase. Results of West Nile virus serum antibodies were negative, and lead and zinc levels were within reference ranges. Differential diagnoses included encephalitis secondary to neural larval migration of *Baylisascaris procyonis*, neoplasia, abscessation, granuloma formation, and other infectious encephalitides. Despite treatment with supportive care and antibiotics, the bird died 7 days after presentation. At necropsy, muscle wasting and lung consolidation were observed. Histopathology of the central nervous system (CNS) showed numerous random tracts associated with neuraxonal degeneration throughout the brain. The lesions were most severe in the brain stem, the midbrain, and the spinal cord. A cross section of a single nematode larva consistent with *Baylisascaris* species was visualized in a section of the midbrain. The cause of the neurologic disease in this cockatoo was attributed to neural larval migration of *B. procyonis*. This disease occurs secondary to fecal-oral transmission and has been reported in at least 40 avian species in North America. In this case, transmission of *B. procyonis* occurred in a pet cockatoo whose owner was involved in wildlife rehabilitation and who had housed raccoons in a cage to which the cockatoo was subsequently exposed. The scarcity of larvae observed in the CNS is typical of *B. procyonis* infection in birds. The lack of peripheral eosinophilia in this cockatoo is also similar to reported cases of neural larval migrans in birds. In most cases, the severity and progression of clinical signs are proportionate to the numbers of larvae in the CNS and the size of the brain. Specific antemortem diagnostic tests for neural larval migrans are lacking for avian patients. Therefore, a presumptive diagnosis in birds is based on clinical signs, history of exposure, and ruling out other disease processes that could manifest in similar clinical signs.

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