PERIPHERAL NERVE SHEATH TUMOR IN THE COELOMIC CAVITY OF A SAVANNAH MONITOR (Varanus exanthematicus)

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ABSTRACT

An adult female savannah monitor (Varanus exanthematicus) weighing 987 g was presented with a 2-wk history of anorexia, malaise, and proprioceptive deficits in all four limbs. Current husbandry conditions were acceptable for the species. The owners rescued the monitor from a pet store 6 mo prior to presentation. On physical exam, the patient was emaciated, non-ambulatory, and depressed. The monitor was estimated to be 10% dehydrated, base on its pale, tacky mucous membranes and sunken eyes. Severe atrophy of the sagittal muscles on the head, epaxial muscles and large muscles of the limb was also noted. Coelomic palpation revealed a left caudal coelomic quadrant mass. Respiratory rate and effort were normal. The animal was hospitalized for diagnostics and treatment. Blood was collected from the ventral coccygeal vein. Initial biochemistry results revealed elevated uric acid (25.4 mg/dl) and decreased albumin (1.3 g/dl) values. Biochemistry abnormalities resolved following improvement in nutrition, and supportive care. Hematology revealed a pronounced monocytosis (3.5 × 109/L). Dorsoventral and lateral survey radiographs revealed a diffuse, soft tissue opacification in the left caudal quadrant of the coelomic cavity. Peripheral vasoconstriction attributed to the severe dehydration made jugular catheter placement impractical. Instead, warmed isotonic fluids (maintenance at 25 ml/kg/day plus 10% deficit corrected over 48 hr), were given intracoelomically. Because of the severe emaciation and relative negative energy balance, enteral support was initiated to provide maintenance plus additional replacement calories. In this case, the basal metabolic rate was calculated and the caloric needs of the monitor were multiplied fourfold to compensate for the severe losses. An enteral carnivore diet (Walkabout Farm’s Quantum Series Enteral Carnivore Diet, Nutritional Support, Virginia 24136 USA) was provided for nutritional support at 26.12 kcal/day. Approximately 50% of the initial calories were provided over the first 48 hrs to prevent re-feeding syndrome. Enrofloxacin at 10 mg/kg was administered once i.m. (Baytril®, 22.7 mg/ml, Bayer, Shawnee Mission, Kansas 66201 USA) then the monitor was given enrofloxacin p.o. at 10 mg/kg s.i.d. Pain management was provided with an oral carprofen suspension (Rimadyl®, 10 mg/ml, Pfizer Animal Health, New York City, New York 10017 USA; compounded by Louisiana State University School of Veterinary Medicine Pharmacy, Baton Rouge, Louisiana 70803 USA) at 2 mg/kg b.i.d. Once the animal was rehydrated and stabilized, an
exploratory coeliotomy was planned to further pursue the coelomic mass. Sedation was achieved with 5 mg/kg tiletamine/zolazepam IM (Telazol®, 100 mg/ml, Fort Dodge Laboratories, Fort Dodge, Iowa 55501 USA) and 0.5 mg/kg butorphanol tartrate (Torbugesic, 10 mg/ml, Fort Dodge Laboratories, Fort Dodge, Iowa 55501 USA). After 15 min, the monitor was intubated and maintained on 1-2% isoflurane/1L O₂ (IsofloTM, Abbott Laboratories, Abbott Park, Illinois 60064 USA). A 9-cm ventral pararamedian incision was made. When the left fat pad was reflected cranially, a 7.5-cm × 3.5-cm large, firm, encapsulated polycystic mass was found filling the left caudal coelomic area. The liver appeared cystic and mottled. The mass was resected using 4-0 polydioxanone suture (PDS, Ethicon, Inc., Westwood, Massachusetts 02090 USA). Liver biopsies were taken using medium hemoclips (Weck Closure System, Research Triangle Park, North Carolina 27709 USA) for ligation and submitted for histopathology. The coelomic cavity was gently lavaged with sterile saline and the body wall was closed in a simple continuous pattern and the skin in a horizontal mattress pattern using a 3-0 polydioxanone suture. Fluid therapy was continued post-operatively. In addition, metronidazole at 25 mg/kg (50mg/ml, Schein Pharmaceuticals, Inc., Florham Park, New Jersey USA) p.o. s.i.d. was initiated to manage potential anaerobic infections. Finally, lactulose solution was given at 333 mg/kg p.o. (10g/15ml, Qualitest Pharmaceuticals, Inc., Huntsville, Alabama 35811 USA) s.i.d. Microscopic examination of the mass revealed large areas of necrosis and fibrosis with firm-regions comprised of cellular spindle type-cells resembling neural pericytes. The histologic lesion, which appeared to be contained within the fibrotic encapsulation, was consistent with a benign peripheral nerve sheath tumor (schwannoma). The liver biopsy revealed areas of vacuolated fat and a multilocular cystic structure with the occasional remnants of hepatic cells. The liver biopsies were consistent with polycystic hepatitis. The patient’s general condition had markedly worsened. Hematology was repeated, with a continued monocytosis (1.9 × 10⁹/L). Red blood cell morphology revealed the presence of mitotic figures and a 3+ polychromasia. Flaccid paralysis and a lack of proprioception were more pronounced after surgery. The patient was found dead 18 days after presentation. Peripheral nerve sheath tumors of the abdominal autonomic ganglia and the myenteric plexus are rare, but examples have been reported in cattle, horses, and dogs.1-3 Solitary large tumors have been found in the duodenum and the cecum of dogs, and in the colon of horses.3 In reptiles, malignant peripheral nerve sheath tumors have been reported in a water moccasin (Agkistrodon piscivorus),4 a Korean viper (Agkistrodon halys brevicaudus),5 and a bearded dragon (Pogona vitticeps).6 Benign peripheral nerve sheath tumors have also been described in two related bearded dragons,7 and a golden tree snake (Chrysepelea ornata).8 Schwannoma is a tumor of the nerve sheath or Schwann cells. Although these tumors usually do not metastasize, they are locally invasive. There are no published reports on specific treatments of peripheral nerve sheath tumors in reptile species. Depending on the size, the location and the type of peripheral nerve sheath tumor involved, surgical correction is the preferred treatment. Even though the tumor was benign, it carried a poor prognosis because of its location.

LITERATURE CITED