Gammopathy? Think Bartonellosis

A 3-year-old, intact female Pomeranian dog presented with a history of syncope, exercise intolerance, apathy, and generalized weakness. She lived indoors and was regularly vaccinated and dewormed. She had mild splenomegaly, hyperemic and injected mucous membranes, and dilated retinal vessels. Abnormal laboratory results included a nonregenerative anemia (packed cell volume 26.2%, reference interval 37.0%-55.0%) and hyperproteinemia (98.3 g/L, reference interval 54-71 g/L). Left ventricular hypertrophy and sinus tachycardia were also noted on echocardiography and ECG. Plasma IgA was increased as shown by serum protein agar gel immunodiffusion. Treatment with doxycycline (5 mg/kg PO Q 12 H) was begun while waiting for test results. The dog responded initially but then presented 2 weeks later for depression, anorexia, and abdominal distention. The presumptive diagnosis was monoclonal gammopathy and hyperviscosity syndrome secondary to an infectious or neoplastic process. Further diagnostic testing was declined and the dog was euthanized. Postmortem findings included an intensely reactive lymphoid hyperplasia with multiple discrete foci of severe pyogranulomatous inflammation in the lymph nodes. The heart showed areas of intense mononuclear myocardi tis with fibrosis, hemorrhage, and necrosis of adjacent tissues. No evidence of neoplasia was found. Bartonella species DNA was amplified from splenic tissue. Blood and formalin-fixed tissue samples were submitted for serologic testing. Seroreactivity to Bartonella henselae was detected at a titer of 1:64. Gammopathies have been noted with leishmaniasis, ehrlichiosis, dirofilariasis, and other cases of bartonellosis, but the monoclonal peak in those cases was IgG rather than IgA. Bartonellosis should be included on the differential list with either monoclonal, oligoclonal, or restricted migration gammopathy.

Commentary: Bartonella species cause life-threatening illnesses and contribute to chronic debilitating diseases. They are among the growing number of vector-borne diseases that are emerging today. Monoclonal and biclonal gammopathies have been reported in people with infections of B henselae and B quintana. In dogs, monoclonal gammopathies have been associated with plasma cell and lymphoid dyscrasias as well as inflammatory and infectious disease such as ehrlichiosis. The dog in this report had high serum protein and molecular evidence of Bartonella infection, leading to the author’s suggestion that bartonellosis should be included on the differential list of patients with gammopathies. Bartonellosis may be difficult to diagnose but new diagnostic testing that amplifies the organism DNA is now available and may help unravel this mysterious disease. —Patricia Thomblison, DVM, MS


Tramadol for Pain in Cats

Tramadol is a synthetic codeine analogue not approved for use in cats. A study was conducted to evaluate tramadol (2 mg/kg) when administered IV as a preoperative analgesic in 12 cats undergoing surgical gonadectomy (n = 6 male, 6 female). Assessment of behavioral indicators of pain, such as comfort, movement, appearance, unprovoed behavior, interactive behavior, and vocalization, was conducted, and a score of 0 to 4 was assigned for each. A total score of 24 indicated maximum pain and a total score of 0 indicated absence of pain. Results showed that concentrations of O-demethylated metabolite (M1) were persistently high in all cats. Total pain scores for all animals were always below the threshold of ≥ 9 chosen for the administration of rescue analgesia, suggesting that tramadol was able to produce sufficient postoperative analgesia in cats undergoing gonadectomy. At the dose used, mean isoflurane consumption was decreased and no hypoventilation was noted. Initial tramadol concentrations varied considerably among animals and thus high interindividual variability was found for tramadol and consequently M1. Nevertheless, clinical observations and the lack of need for further analgesic intervention suggest that tramadol (2 mg/kg IV) might be useful as an intra- and postoperative analgesic in cats sedated with acepromazine and undergoing gonadectomy.

Commentary: This research demonstrates—and verifies at least one other study—that cats are capable of converting tramadol to an active metabolite, M1. M1 is believed to be more critical to induction of analgesia than tramadol itself. Injectable tramadol has been shown to be a useful analgesic in dogs and has been approved for use in this species in Italy. This newer information in cats may help convince pharmaceutical companies in other countries to pursue approval of injectable tramadol in dogs and cats. An approved, injectable analgesic that is not an NSAID and may not have to be classified as a controlled substance would be a welcome addition to our pain management toolbox. —James S. Gaynor, DVM, MS, Diplomate ACVA