Avian Renal Disease: Noting Sometimes Surprising Differences

Many of the traditional tests used for diagnosing renal disease do not yield definitive results when used in birds. Most of the physical examination findings in these patients, with the exception of gout, are nonspecific. Plasma uric acid can be useful during screening for advanced renal disease in birds, but other serum chemistry values are either poorly studied or otherwise poorly understood and thus are of limited clinical value. Urinalysis results must be interpreted carefully in these patients, as the “urine” in bird droppings differs from the urine produced by the kidneys. The author of this article also believes that standard mammalian dipsticks are of limited use in avian urinalysis. Other diagnostic tests, such as imaging studies, water-deprivation testing, and evaluation of glomerular filtration rate, may have some value in some avian patients. In patients with articular gout, fine-needle aspiration can be used to identify uric acid crystals. For definitive diagnosis of avian renal disease, biopsy is necessary, although histopathologic lesions generally are not pathognomonic for specific diseases.

Most avian patients with renal disease are managed medically. Maintaining hydration is important in most, and a warmed, balanced electrolyte solution can be given via the oral, subcutaneous, intravenous, or intraosseous route. The estimated daily fluid requirement for most avian patients is 40 to 60 ml/kg per day. In renal failure patients, 10% of the bird’s body weight should be given in fluids. Fluids are continued until blood uric acid levels drop to a normal or only mildly elevated level (10 to 20 mg/dl) and improvement in clinical signs has been noted. For patients with bacterial nephritis, appropriate antibiotics are given for at least 4 to 6 weeks. Aminoglycosides should be avoided. Hyperuricemia and renal fibrosis may be managed with allopurinol or colchicine. A combination of these drugs is well-tolerated in most birds. Urate oxidase is another promising drug for managing hyperuricemia, but it needs further study. In addition to these drugs, omega-3 fatty acid supplementation is recommended. The author believes that supplementation with low-dose (subanalgesic) aspirin and possibly other NSAIDs may reduce the severity of some types of avian renal disease, particularly glomerular lesions. Birds in which hypovitaminosis A is suspected should receive an appropriate supplement. Dietary protein restriction of these patients is controversial, but a safe recommendation is not to feed protein levels higher than those considered normal for the species.

COMMENTARY: While birds can have the same forms of renal disease as mammals, diagnosis and management in this species is often complicated by anatomical and physiologic differences, lack of information, and differences of opinion. Regardless, the well-respected author of this article provides a concise and clinically useful summary of avian renal disease. The section on treatment based on both scientific evidence and his own clinical experience as an avian practitioner is particularly good. A surprising observation he makes is that NSAIDS may actually help resolve some forms of renal disease in birds, but only at subanalgesic doses.—Jennifer L. Schori, VMD


Demodicosis in Prairie Dogs

Nine unrelated pet prairie dogs were presented for hair loss that had been present for 1 to 3 months. Pruritus varied. Hair loss was bilaterally symmetrical and extended from the mid-dorsal back to the tail and also involved the skin of the abdomen and legs. Complete blood counts and serum chemistry panels were normal in the 7 animals tested. Fungal cultures were also negative. Skin scrapings revealed 1 to 10 short-bodied mites ranging in size from 190 to 250 µm. The prairie dogs were treated topically with amitraz every 4 days for 2 months. Clinical signs resolved in all of the animals.

COMMENTARY: Prairie dogs became relatively common as pets several years ago but declined precipitously in popularity shortly after they became associated with monkeypox virus. What is interesting and noteworthy about this case series is that the clinical signs were very similar to what has been reported for other small mammals and the mites found on the prairie dogs were very similar to the short-bodied mite seen in other species, such as cats and hamsters. It is interesting that the clinical signs in all 9 animals developed between October and March. Finally, this case series is an outstanding example of problem-oriented diagnosis in dermatology. A standard approach to bilaterally symmetrical alopecia led to the diagnosis.—Karen A. Morriello, DVM, Diplomate ACVD