

Clinical Nephrolithiasis in a Male Spotted Seal (*Phoca largha*)

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Abstract

A 10-year-old male spotted seal presented with increased urination, often red. Analysis of a fresh sample retrieved from the concrete deck revealed increased WBCs, abundant RBCs, cocci bacteria, and crystals. Initial voluntary ultrasounds of kidneys were short in duration due to behavioral limitations but were unremarkable. Following treatment with antibiotics and probiotics for a presumed urinary tract infection, clinical signs resolved. No abnormalities were noted on radiographs obtained during a subsequent routine physical under sedation, but areas of suspect mineralization within the kidneys were noted on ultrasound. A ‘clean catch’ urine sample was obtained during this procedure and while normal in coloration, on cytology it contained abundant RBCs as well as WBCs and cocci bacteria. Attempts to consistently treat and monitor this individual under behavioral control were complicated by discomfort and poor appetite. Urination, frequently red, continued at an increased frequency and his food intake decreased. Additionally, staff observed multiple episodes of apparent pain characterized by unusual vocalizations, rolling, posturing, and regurgitation. He was sedated for treatment (long-acting antibiotics, anti-nausea medications, NSAIDs, and fluids) and diagnostics including renal ultrasounds, which revealed multiple hyperechoic areas in the kidneys. Following consultation with a veterinary radiologist a CT scan was arranged and confirmed bilateral multifocal nephrolithiasis with associated hydronephrosis with no evidence of ureteral or urinary bladder urolithiasis. The largest uroliths were 2.4 mm in diameter with most less than 1 mm. Renal urolithiasis in phocids has been previously reported but is rare, may be asymptomatic, and is sometimes discovered only as an incidental finding during post-mortem exams.¹⁻³ A treatment plan was developed for this spotted seal based on the presumption the uroliths are urates, the most common stone observed in other marine mammals. Thus far, we have used increased hydration, treatment with allopurinol, and administration of analgesics as needed while we investigate dietary modifications and other treatments to limit urolith development and potentially reduce the size of existing stones.

Acknowledgements

The seal, PL1002 ‘Tunu,’ in this case report is held under NOAA NMFS Permit 18902. The report is based on findings and samples obtained under ASLC's Program of Veterinary Care. Maximizing his health and welfare is possible through the dedication of his animal care team including husbandry, veterinary, and research staff at ASLC.

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