

FIVE CASES OF UROLITHIASIS IN FREE-RANGING HARBOR SEALS (*Phoca vitulina richardsi*)

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ABSTRACT

Uroliths have been described in multiple species of pinnipeds including California sea lions, northern elephant seals, ringed seals and Weddell seals, however information on urolithiasis in harbor seals is scarce. Simultaneous ammonium urate and uric acid nephroliths were reported in a captive adult harbor seal that died of renal failure. Magnesium triple phosphate (struvite) crystals also have been reported in three harbor seal pups from California. In an effort to learn more about urolithiasis in free-ranging harbor seals, we compared necropsy records on harbor seals with uroliths (nephroliths, uretoliths, urocystoliths or urethroliths) from multiple institutions on the West Coast of North America that conduct necropsies on stranded harbor seals. Records of five cases were identified from three institutions. Two cases were pre-weaned male pups that stranded and died during rehabilitation. In both cases, necropsy revealed fine granular material in the bladder as well as mineralized debris and dilatation of multiple renal calices. The mineral composition was not analyzed in one while in the other stones were microscopically identified as magnesium ammonium phosphate (struvite). This case also presented with partial bilateral urethral obstruction and aerobic bacterial culture of urine collected at necropsy yielded light growth of alpha *Streptococcus* spp., suggesting a possible infectious role in urolith development. The other three cases identified were adult male seals that stranded. In all cases, stones were identified in the renal calices and/or common collecting ducts with attendant dilatation. In one case only one stone was present, in another only the left kidney was involved and in the third case both kidneys were involved. Granular material in the bladder and obstruction were not identified in any of the three adult cases. In one case the nephroliths were identified as ammonium urate by the Minnesota Urolith Center. Identification is pending in the other two cases. Urolithiasis appears to be rare in free-ranging harbor seals.

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