Rounds Animal Health Department Medical Rounds "medicine for all"

NATIONAL MARINE LIFE CENTER Caring for Stranded Marine Animals

Rounds Notes Veterinary Research Department Under the microscope

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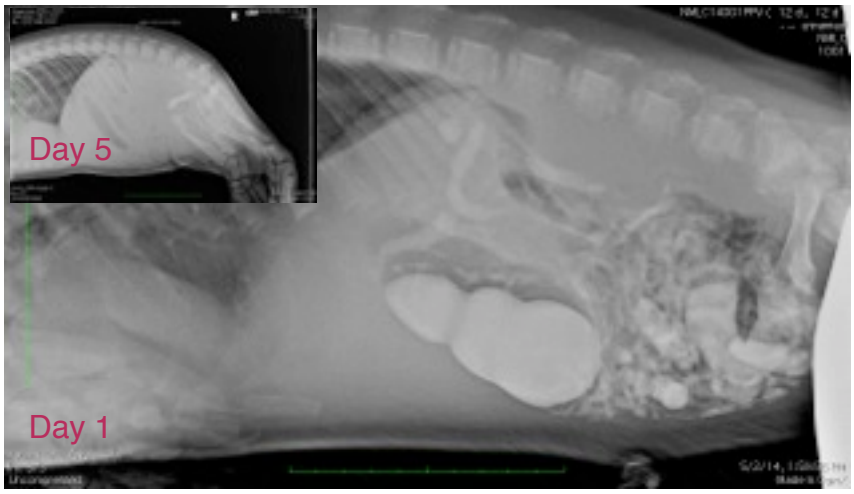
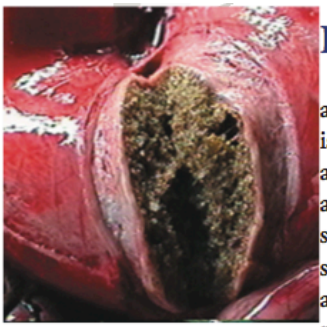
Up on a Soap Box: (special edition)

Problems with Pica



Pica (**Pica** (/ˈpaɪkə/ ***py****-kə*) is characterized by an appetite for substances largely non-nutritive, such as ice, clay, chalk, dirt, or sand- Wikipedia), is common in phocids, ice seals (Harp seals, Hooded seal) in particular. Up to 3% of all stranded animals on Cape Cod had fatal gastric rupture, peritonitis or severe impaction/ dehydration caused by the ingestions of rocks and sand (Bogomolni et al, 2010), but when you exclude cetaceans and look at juvenile Harp seals that percentage goes up to 90% so it is something we should be prepared to diagnose and address from a medical standpoint. I even included it as a disease in my Handbook (attached) in the chapter on Harp seals. Borgomolni (2010) and others have suggested that the behavior can be a stress response. I have experienced this first hand, that even the presence of humans with a seal on the beach can induce sand eating. I believe that the behavior has survival implications, if these seals are often hauled out on ice flows, eating snow and ice may be a source of fresh water and self-treat dehydration, so the behavior may help some wild animals. However, the beaches of the US are more likely to contain sand and rocks, then snow and ice, the ingestion of these is a serious and potentially fatal problem. It just illustrates the old adage, "stick and stone will break my bones, but sand and stones can kill me", particularly if ingested. Ingestions can lead to pain, stress, gastro-intestinal rupture with subsequent peritonitis and fatal septic shock, and could be considered a surgical emergency.



Ingestion of Stones and Sand

Ice seals, including harp and hooded seals, often are found to have ingested sand and/or stones. It is unknown if the material is ingested intentionally, but the author has observed stressed ice seals actively eating sand. This is a frequent event and in some cases the amount and type of material ingested strains the belief in any physiologically benefit to the animal. In one study the type and amount of material did not correlate with the degree of gastric or intestinal parasitism found at necropsy (Lucas et al., 2003). Harp and hooded seals may ingest sea water (Storeheier and Nordoy, 2001) but while this may help ion-deficient animals there is no net gain of water. Ice seals may ingest sand and rocks for the following reasons: dehydration (mistaking the substrate for ice), starvation, parasitism, displacement behavior, stress, or some factor not yet realized.

All ice seals in rehabilitation should be radiographed and assessed for the impact of such behavior. Much of the material may pass through the intestines but surgical intervention may also be necessary.

Ch. 5:3:9

If the sand does them no good, and creates significant problems, what are we to do ? First and foremost is identification of ingestion vs impaction vs obstruction. Ingestion is the presence of sand and rocks and can be irritating, impaction implies some form of physiological disturbance, such as constipation, vomiting, colic, etc. Finally obstructions will need to be to resolved quickly by medial therapy or surgery (or euthanasia) is indicated. This can often be accomplished with a history, physical exam, and radiographs. Ancillary diagnostics include barium studies and CT. Medical management consists of fluid therapy, increased dietary fiber, frequent monitoring, and consideration of lubricants. Use of pro-kinetics (erythomycin, metacolpromide, and cisapride) are largely contraindicated, and more likely to promote obstruction and lead to GI perforation then to resolution of the impaction. Pain control is used as necessary remembering that most opioids can be constipating. Use of dietary additives to facilitate passage of sand, such as lactulose and mineral oil are commonly employed. At Penn we ("penn we") abstained from the use of mineral oil, even in horses, and I prefer the use of lactuose. Pysllium has been shown to increase the removal of sand from the intestinal tract of healthy horses (Landes et al, 2008) and is often employed prophylactialy and therapeutically in cases of sand colic. If significant sand is in the colon, a warm water (100°F) enema can be tried as well. A low concentration of DSS could be added to this fluid. So the sandman has commeth, lets hope he takes nothingth away.

Levels of Foreign body consumption:

1) **Ingestion:** Evidence through history/ observation, radiographs or endoscopy of the swallowing of foreign material without evidence of physiological disturbance.
2) **Impaction:** Presence of ingestion with non-critical disruption of normal function: colic, diarrhea, constipation, vomiting, electrolyte disturbances etc.
3) **Obstruction:** Evidence that without intervention be it medical or surgical, the material will not move on it's own, can be partial or complete, can be physiological or mechanical. Complete obstructions can be a surgical emergency.

-Dr. Sea Rogers Williams (Attending Veterinarian and Director of Science)