

Rounds

Animal Health
Department

Medical Rounds

"medicine for all"



NATIONAL
MARINE
L I F E
CENTER

Caring for Stranded Marine Animals

Notes

Veterinary Research
Department

Under the microscope

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Rounds Notes is a report on the health of animals at the National Marine Life Center from Sea Rogers Williams VMD for the staff, volunteers, and community of the center including professionals involved the captive care of similar species, the views expressed are not necessarily that of NMLC. Information in Rounds Notes should be considered confidential and used solely to benefit the health of aquatic animals everywhere.

June 25, 2009

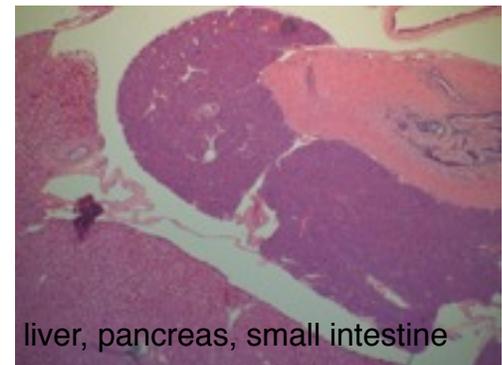
Rounds Notes

13: 32-33 (2009)

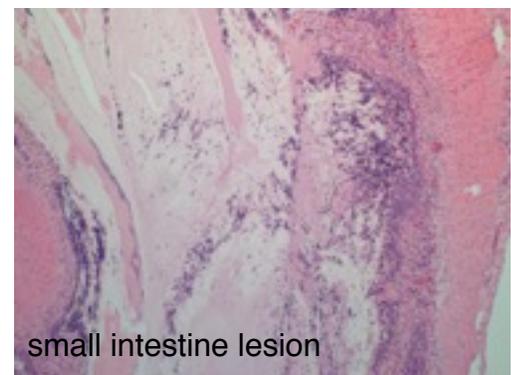
Morbidity & Mortality Rounds: 'Amelia' Systemic Inflammatory Response

The histopathology report of Amelia confirms a systemic inflammatory response attributed to sepsis. Inflammation was seen in the spleen, lungs, liver, and renal-excretory systems. A focal erosion of the small intestine with bacterial overgrowth and submucosal hemorrhage, which may be stress induced or a result of the non-steroidal anti-inflammatory (NSAIDs- this is the last time I'm going to give you this acronym), may have contributed to the death. The *E. coli* could have come from us mammals or the GI, and the *Pseudomonas* is common in all types of water habitats.

So where does this leave us? In my interpretation, bacteria are bad, antibiotics are good, and everything else becomes a little fuzzy. NSAIDs are useful, and we have an obligation to control pain in our patients, but options in reptiles are not as well established as they are for mammals. Still we must address the issue. The sequence of death in a septic patient begins with bacteria entering a protected location, like the cecum or beyond the mucosal barrier in the intestines. Once bacteria enter the blood (bacteremia) then the body prepares a massive assault (sepsis) which eventually can result in micro-vascular disease, decreased organ perfusion (septic-shock), systemic hypotension, and multi-organ failure. So what role do immuno-modulators, steroids, and anti-inflammatories have in the treatment of this condition? If I knew the answer to that I'd be working MassGeneral. NSAIDs may help but the risks of GI ulceration, renal and or hepatic disease are risks, particularly in animals that are dehydrated.



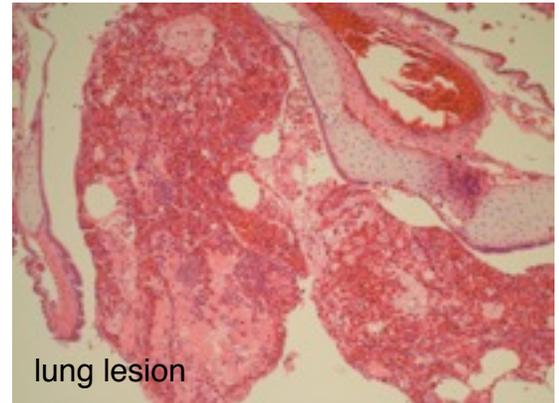
liver, pancreas, small intestine



small intestine lesion

Was the source of the bacteria the GI or through the wound ? Also, a little hard to say and in the end it may not matter. I believe there was single layer of “peritoneum” that initially protected the coleum but bacteria could have easily translocated across such a barrier. When the bone fragment was removed it tore this delicate layer and management of an open coleum in a small turtle like Amelia is difficult. If the bacteria came from the GI was the source of the ulcer stress induced or NSAID toxicity ? Also, no clear answer. We have to limit stress to these little turtles, certain procedures such as examination, treatments, and necessary husbandry tasks have to be done, but all other contact and movement, and environmental stressors need to be minimized. Keep noise down or absent from animal areas, maintain a natural daylight cycle, provide a clean but naturalistic environment when possible, provide access to food and water and minimize handling. Have safe but protective areas where the animals can effectively hide and feel secure. All wildlife sees us as predators not rehabilitators so please respect their wild dignity.

We have a teaching set of images from the gross anatomy and histology from 1-year old diamond backs and gained experience with serious if not seemingly minor marginal scute trauma in this species. The loss of Amelia is felt by us all, and care of anything living under 20g is challenging, but perhaps we are better prepared for future hatchling and yearling cases.



lung lesion

Safety Seal of Approval:

Safety is everyone's responsibility



The new hospital is going up, let's all make sure this happens without incidents. WATCH for struck by, crushed by, or ran-in-to injuries. KEEP YOUR EYES OPEN ! NEVER walk under a crane.

No one is allowed in the construction site without an escort, preferably one of the Bill's.

Personal protective Gear includes long pants, closed toed shoes, orange vest, and a hard-hat if in the “zone”.

Remember we are still open to the public so help keep them safe as well, and report any activity that even appears dangerous to Bill immediately.

We're all excited to have the ramping up of construction but realize that the site is considered an attractive nuisance, keep yourself and the public safe.

C. Rogers Williams VMD

Sea Rogers Williams VMD
attending veterinarian and director of science



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