



Rounds Notes is a monthly report from Sea Rogers Williams VMD, the views expressed are not necessarily that of the National Marine Life Center. Information in Rounds Notes should be considered confidential and used solely to benefit the health of aquatic animals everywhere.

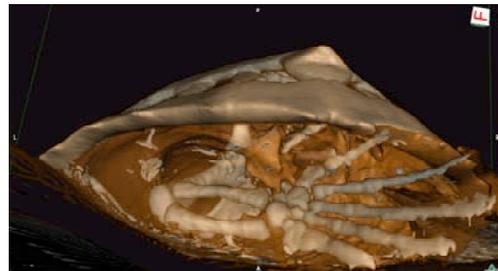
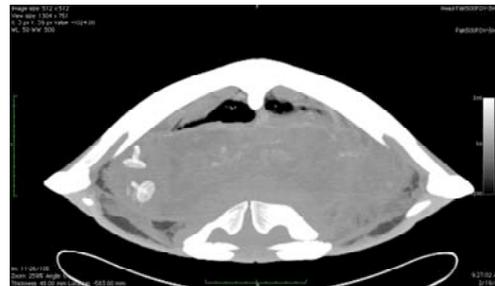
Feb. 19, 2009

Rounds Notes 5: 14-15 (2008)

Headlines News: Poop Negative, Rubber 2, Turtle 0

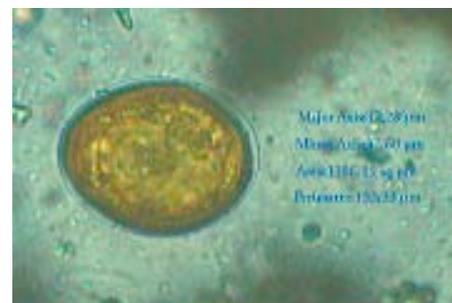
Fletcher: We have increased Fletch's base to around 2000Kcal to help move things (2, 2cm small rubber attachment pieces) through the GI and added a small amount of Laxatone® (light mineral oil in a base) to help things glide along. The protein skimmer is working overtime but the new ozone set-up is keeping coliforms to a minimum.

Blood gas analysis is fine and tissue enzymes and uric acid are declining. Fletch's appetite is great and fecal production robust. A new rule: If Fletch produces less than 2 g of collected fecal material for 2 days in a row we will perform a CT and consider surgery to remove the two pieces of rubber. A second CT performed at CSI WHOI today shows that the pieces have moved. Some loops of bowel are a little more dilated than I'd like to see but we will continue to monitor closely. With 3D reconstructions angled at the surgical approach from the left inguinal pouch it looks like one could just reach in and grab them, let's hope it does not come to that.



Science is a state of mind and I just could not resist the opportunity.

Since everyone else at the center is playing with Fletch's poop (looking for the wayward rubber stoppers) I too have taken an interest. We know there are trematode eggs in the feces and that tells us the adult flukes are in the GI. There are fifty described trematodes from Loggerhead sea turtles and no one has compiled a list of what their eggs look like or their measurements (sounds like a good summer intern project). And even if this information



was available each study likely used a different method to examine the eggs and measurements of the eggs are effected by the fixative, plus not everyone is so lucky to have fresh Fletch poo just a net-dip away. So I measured the eggs again and fixed some stool in 10% NBF and some in 70% ethanol, I'll make weekly measurements and we'll see if the size is effected by the fixative. Perhaps one day we'll know the species of fluke Fletcher is carrying along in his gut.

Caveman / woman (NMLC LK 08-20)

Histopathology:

The histopathology came back today and confirmed Mycobacteriosis in the lung granulomas while fungal stains were negative. A fungal isolate was recovered from the lungs and was forwarded to the Texas Fungal Identification Laboratory but it may be a secondary player or contaminate.

Fungal disease was still found to play a role in Caveman's overall disability, as a Candida-like organism was found colonizing the esophagus. Candida in humans is the disease "Thrush", and while there is a report from a loggerhead, I found nothing in the literature from Kemp's ridley turtles. We're looking into PCR or immuno-histochemistry to identify the organism more precisely.

Besides the two forms of bacteremia and sepsis, the other startling lesion from the histopathology report was the marked renal tubular necrosis and mineralization indicating long standing renal failure. This was present in the face of daily fluid diuresis and a uric acid level that returned to normal. Uric acid is an insensitive indicator of renal function in turtles receiving fluid therapy. And while the presence of Mycobacteria would have indicated the use of amikacin along with the enrofloxacin, I don't think Caveman's kidneys could have put up with prolonged aminoglycoside administration.

Further evidence of the state of disease in the days prior to death was the generalized necrotizing steatitis and myofiber degeneration and fibrosis. Use of vitamin E in cases of severely debilitated sea turtles has been recommended.

So what's left ?

We'll wait to hear from the fungal lab and look into further description of the Candida-like organisms.

What have we learned ?

Caveman died of sepsis and multi-organ failure with a severe Mycobacterial pulmonary abscess / granuloma. The renal failure was evident at presentation but blood work was an insensitive indicator of continued renal disease. The immuno-suppression associated with cold-stun events and the aspiration of sea-water, combined with severe dehydration or renal failure make for a grave prognosis in sea turtles with this presentation.

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