ZOOLOGICAL PATHOLOGY PROGRAM
STRANDED CETACEAN NECROPSY REPORT

Field ID: 65IMMS031711
Additional Identifier:
ZPP Accession Number: 11-39Tt
Species: *Tursiops truncatus*
Strand Date: 3/17/11
Strand Location: Cat Island, Mississippi
Sex: M
Age Class: calf
Necropsy Date:
Condition code: 2
Total Length: 105 cm
Weight: approximately 11.3 kg
Blubber Depth:
Body Condition:

Gross Necropsy: Gross necropsy report on file.

Gross findings include (from report):

INTERNAL EXAM: Left shoulder joint was normal. There was hemorrhage (edema/blood) in the ventral left mandibular and on the left side of the neck. Blood in the pharyngeal area.

CIRCULATORY SYSTEM
Heart: Foramen ovale present- 0.8 cm flat diameter. PDA present- 1.5 cm at aorta. Blood in the pericardial sac.

RESPIRATORY SYSTEM
Blowhole: Patent, no exudates observed, no parasites observed.

Lungs: Both lungs floated in water. Pinkish, red and puffy. Bruising around bronchi of left lung. Right lung was firm.

CENTRAL NERVOUS SYSTEM
Brain: Hemorrhage in the right caudal skull. Brain contents were too decomposed to evaluate (liquefied). Skull appeared formed.

Slides/Tissues Received: 7 regular slides, 1 eye slide

Microscopic Findings:
Slide 1:

Prescapular lymph node: There are multiple large cells with large smudgy nuclei scattered throughout the lymph node (presumed megakaryocytes).

Thymus: Thymic lobules are smaller than expected (presumed atrophy/depletion).

Kidney: No significant findings (NSF).

Slide 2:

Lymph node: Regionally, subcapsular and medullary sinuses contain moderate numbers of neutrophils. There are moderate numbers of megakaryocytes scattered throughout the cortex.

Liver: Portial triads occasionally contain very small numbers of myeloid precursors. A few bile ductules are plugged with golden yellow bile.

Lung: Regionally alveolar spaces and bronchioles are collapsed (atelectic). Many alveoli and bronchioles contain moderate numbers of squamous epithelial cells (amniotic cells), macrophages, and globular yellow-brown material (meconium). Some alveoli are packed with this material. Adjacent alveolar septae multifocally contain moderate numbers of macrophages and neutrophils. Scattered throughout the lung are moderate numbers of large bacilli (bacterial overgrowth, presumptive).

Slide 3:
Tongue: NSF

Skin: There are small numbers of histiocytes and fewer neutrophils in the superficial dermis occasionally surrounding blood vessels. Blood vessels are lined by reactive endothelium.

Skeletal muscle: NSF

Slide 4:
Heart: Within the atrial interstitium are a few scattered neutrophils. Focally there is a small aggregate of neutrophils and macrophages within the atrial epicardium. There are a few neutrophils and macrophages surrounding several blood vessels in the ventricular epicardium.

Slide 5:
Colonic lymph node: Regionally there are moderate to large numbers of neutrophils within sinuses.

Aorta: NSF

Esophagus: NSF

Slide 6:
Penis: NSF

Pulmonary artery: NSF

Pharynx: NSF

Slide 7:
Skin: There are small numbers of histiocytes and fewer neutrophils in the superficial dermis occasionally surrounding blood vessels. Blood vessels are lined by reactive endothelium.

Slide 8:
Eye: NSF

Final Diagnoses:

1. Lung: Moderate to marked regional atelectasis and marked diffuse histiocytic and neutrophilic pneumonia with numerous amniotic squamous cells and aspirated meconium
2. Colonic and unspecified location lymph node: Moderate to marked sinus neutrophilia (drainage reaction)
3. Thymus: Moderate depletion
4. Heart: Minimal multifocal acute neutrophilic myocarditis
5. Skin: Minimal superficial acute neutrohphilic and histiocytic dermatitis
6. Thymus: Moderate depletion
7. Liver: Mild bile stasis

Ancillary Test Results: Plesiomonas shigelloides and Aeromonas hydrophilia cultured from lung.

Comments:

The regional atelectasis noted in the lungs indicates that this dolphin did not completely inflate it's lungs after being born. Though lung was reported to have floated in formalin, significant atelectasis was still present. Partial atelectasis may occur if animals attempt to breathe following birth but fail to completely expand their lungs. Additionally there was inflammation throughout the lungs, aspirated amniotic squamous cells and aspirated meconium. Taken together, these findings are consistent with infection of the amniotic fluid in utero and a fetal stress response. When stressed, either in utero or during the birthing process, fetuses can aspirate abnormally large amounts of amniotic fluid containing amniotic squamous cells. If the amniotic fluid is infected, an inflammatory reaction will occur in the fetus in utero, such as the case in this dolphin. The inflammation was extensive and severe enough to indicate that it had been present for at least 24 hours prior to death. Bacteria noted within the lung histologically and bacterial species cultured were most consistent with post mortem overgrowth. Analysis of lung for Brucella sp. infection via PCR is recommended.

Inflammation within the heart and skin and the drainage reaction in the lymph nodes are all consistent with systemic infection, and bacterial infection is the top differential. The thymic depletion may also be related to systemic infection.

Though it is impossible to accurately determine fetal/calf age histologically, all examined tissues appeared to be of appropriate maturity for a near to full term fetus/calf. The significance of the bile stasis in the liver is unknown.

Reported By:

_____

Kathleen M. Colegrove-Calvey DVM, PhD, Dip ACVP
October 6, 2011