

**ZOOLOGICAL PATHOLOGY PROGRAM
STRANDED CETACEAN NECROPSY REPORT**

Field ID: 76IMMS080510
Additional Identifier: D-0027
ZPP Accession Number: 11-38Tt
Species: *Tursiops truncatus*
Strand Date: 8/5/2010
Strand Location: Pass Christian, Mississippi
Sex: F
Age Class: Calf
Necropsy Date:
Condition code: 2
Total Length: 141 cm
Weight: approximately 31 kg
Blubber Depth:
Body Condition:

Gross Necropsy: Report on file.
Gross findings include (from report):
Blood coming from mouth and blow hole.

Blubber: Petechial hemorrhage.

Ribs and Sternum: Fracture of 4,5,6,7 right ribs dorsal to costosternal junction. Fracture of 8 and 9th ribs on dorsal aspect.

Lung: Left lung-ecchymotic hemorrhage. Generalized irregular sized granulomas ranging in size from 0.5 cm to 2 cm. Granulomas had yellowish green caseous material. Cranial lobe – 2 greenish red circular lesions – 4 cm X 2 cm, 3 cm X 2 cm. Small lesion had two healing puncture wounds. Right lung hemorrhagic with 9 cm laceration. Clotted blood in right thorax. Generalized irregular sized granulomas in right lung. Mild small white parasites found in right lung. One granuloma contained multiple small white linear parasites.

Slides/Tissues Received: 15 regular slides, 1 eye slide.

Microscopic Findings:

Slide 1:

Spleen: There are prominent lymphoid follicles throughout the white pulp. Red pulp contains moderate numbers of erythroid and myeloid precursors and megakaryocytes (EMH).

Lymph node: There is mild lymphoid hyperplasia.

Kidneys: No significant findings (NSF).

Slide 2:

Skeletal muscle: NSF

Tongue: NSF

Slide 3:

Lung: Focally a bronchiole is obliterated by a moderately sized accumulation of large number of viable and necrotic neutrophils and necrotic debris surrounded by moderate numbers of macrophages and follicular aggregates of lymphocytes (granuloma). There are small numbers of coccobacilli within the central area of the granuloma. Several other bronchioles contain clumps of up to 5 micron wide, basophilic, irregularly and minimally branching fungal hyphae with many clear bulbous spaces. In one bronchiole these hyphae are surrounded by small numbers of macrophages. Elsewhere through the section, bronchioles and alveolar spaces multifocally to regionally contain small amounts of eosinophilic debris, few macrophages, and/or eosinophilic fluid (edema). Bronchioles are often surrounded by follicular aggregates of lymphocytes and less frequently small numbers of macrophages, increased amounts of fibrous connective tissue. There are a few small areas of hemorrhage.

Lymph node: There is moderate lymphoid hyperplasia. Sinuses contain small numbers of neutrophils.

Slide 4:

Lung: Changes are similar to those described in slide 3. Additionally several larger bronchioles are obliterated by clusters of approximately 500 micron, mineralized, necrotic, nematodes surrounded by large amounts of necrotic debris, necrotic and viable neutrophils and moderate numbers of macrophages and lymphocytes. Elsewhere throughout the section, bronchioles are often surrounded by follicular aggregates of lymphocytes. Regionally alveolar spaces and bronchioles contain moderate to large numbers of large foamy macrophages and intervening alveolar setae are expanded by similar cells.

Lymph node: There is moderate lymphoid hyperplasia. Sinuses contain small numbers of neutrophils.

Slide 5:

Lymph node: There is moderate lymphoid hyperplasia. Sinuses contain small numbers of histiocytes.

Liver: NSF

Intestine: NSF

Slide 6:

Heart: NSF

Slide 7:

Glandular stomach: NSF

Lymph node: There is moderate reactive lymphoid hyperplasia

Slide 8:

Great vessel: NSF

Colon/cecum: NSF

Slide 9:

Colon: NSF

Intestine: NSF

Squamous stomach: The mucosa is irregular, tattered and there is segmental superficial erosion.

Slide 10:

Colon/cecum: NSF

Thymus: NSF

Urinary bladder: NSF

Slide 11:

Trachea: The submucosa contains small numbers of lymphocytes and macrophages.

Small intestine: NSF

Slide 12:

Pancreas: NSF

Thyroid gland: NSF

Adrenal gland: NSF

Esophagus: NSF

Slide 13:

Brain: NSF

Slide 14:

Skin: NFS

Tongue: NSF

Slide 15:

Bone: NSF

Slide 16:
Eye: NSF

Final Diagnoses:

1. Thorax: Trauma with rib fracture and pulmonary hemorrhage (gross diagnoses)
2. Lungs: Moderate multifocal to regionally extensive histiocytic pneumonia and multiple mineralized granulomas, with intralesional degenerate nematodes, lymphoid hyperplasia and rare fungal hyphae (zygomycete, presumptive)
3. Lymph nodes (multiple sites): Moderate reactive lymphoid hyperplasia
4. Trachea: Mild histiocytic and lymphocytic tracheitis
5. Squamous stomach: Mild segmental erosion

Ancillary Test Results:

Morbillivirus PCR negative

Comments:

Based on the gross necropsy findings, the cause of death was blunt trauma to the thoracic region. The most significant histologic findings were the lung lesions. Granulomas described grossly were due to lungworm infection and were centered on degenerate nematodes. There was also a more regional moderate histiocytic pneumonia and significant lymphoid hyperplasia that was somewhat unusual for a lungworm pneumonia. Differentials for the histiocytic pneumonia include an allergic response to parasite infection or a reaction to pulmonary secretions from altered airway clearance due to bronchiole damage. In domestic species, peri-bronchiolar lymphoid hyperplasia can be seen in association with mycoplasma infections. Though mycoplasma infection has not been previously reported in dolphins there have been several suspect cases. An immunohistochemical stain for mycoplasma is available and may be utilized in this case. An addendum will follow if there are any additional findings. Additionally, in one section a few clusters of fungal hyphae were noted within bronchioles. Fungal organisms were most similar to a zygomycete and based on the low number of organisms, infection was regarded as secondary. If the sections examined are representative of 50% or greater of the lung in this dolphin, pulmonary disease may have significantly affected this individual.

Lymphoid hyperplasia is relatively common in young free ranging animals, especially those with parasitic infections. Other lesions were regarded as mild incidental findings.

Reported By:

Kathleen M. Colegrove-Calvey DVM, PhD, Dip ACVP
October 5, 2011