

**ZOOLOGICAL PATHOLOGY PROGRAM
STRANDED CETACEAN NECROPSY REPORT**

Field ID: GW2010007A
Additional Identifier:
ZPP Accession Number: 11-48SI
Species: *Stenella longirostris*
Strand Date: 06/02/2010
Strand Location: Beacon Hill, Florida
Sex: F
Age Class: Adult
Necropsy Date: 06/02/2010
Condition code: 2
Total Length: 170 cm
Weight: 63 kg estimated
Blubber Depth:
Body Condition: 4 out of 7

Gross Necropsy: Report available in pdf form.
Gross findings include (from report):

Lung surface has colorful nodules – probably parasitic granulomas. Small bronchi have lungworms present. On cut section lungs had patchy appearance - probable pneumonia.

Small hemorrhagic lesion on surface of cerebrum that on cut section appears to go to deeper tissues.

Slides/Tissues Received: 22 regular slides

Microscopic Findings:

Slide 1:

Eye: No significant findings (NSF).

Slide 2:

Intestine: NSF

Diaphragm: NSF

Lymph node: NSF

Slide 3:

Aorta: NSF

Esophagus: NSF

Liver: Diffusely hepatocytes are contain mild to moderate amounts of hemosiderin. Kupffer cells are multifocally reactive and rarely contain dark brown pigment (trematode pigment). Portal areas contain very small numbers of lymphocytes and fewer plasma cells.

Slide 4:

Lung: Regionally bronchioles and adjacent alveolar spaces contain moderate to large numbers of neutrophils, necrotic debris, and fewer macrophages. Affected bronchiolar mucosa is either absent or contains neutrophils and adjacent bronchioles have mildly hyperplastic mucosa. One bronchiole in an affected region contains an approximately 600 micron necrotic nematode. In regions adjacent to the neutrophilic inflammation, alveolar spaces often contain moderate amounts of wispy basophilic material and moderate number of foamy macrophages. A few macrophages contain clear to light yellow cytoplasmic droplets (lipid presumed). Alveoli are lined by numerous plump pneumocytes (Type II pneumocyte hyperplasia). Alveolar septae are often widened and contain small to moderate numbers of lymphocytes and macrophages, increased amounts of fibrous connective tissue, and/or small amounts of wispy basophilic material (edema). Near regions of inflammation are moderately sized areas of fibrosis that span between and shrunken, collapsed bronchioles.

Intestine: NSF

Slide 5:

Kidney: NSF

Great vessel: NSF

Urinary bladder: NSF

Slide 6:

Brain stem: There are a few very small, loose aggregates of macrophages and glial cells within grey matter horns. Occasional small clusters of similar cells are around blood vessels.

Cervix: NSF

Slide 7:

Spleen: Lymphoid follicles are very small and often poorly organized.

Lymph node: There is mild sinus congestion.

Pituitary gland: NSF

Adrenal gland: NSF

Slide 8:

Lymph node: NSF

Lymph node: There are small numbers of histiocytes in sinuses.

Kidney: NSF

Slide 9:

Adrenal gland: NSF

Spleen: Lymphoid follicles are small.

Pancreas: NSF

Heart: Focally in a moderately sized area of the ventricular subendocardium, myocytes are completely replaced by loose, poorly cellular collagenous connective tissue mixed with a few macrophages and hemosiderin laden macrophages. The endocardium is slightly depressed in this area.

Slide 10:

Mammary gland: NSF

Lung associated lymph node: There is mild congestion and medullary sinuses are sparsely cellular.

Lymph node: NSF

Slide 11:

Skeletal muscle: NSF

Lymph node: NSF

Slide 12:

Skin: Superficial dermal blood vessels are multifocally lined by reactive endothelium.

Heart: NSF

Aorta: NSF

Thymic remnant: NSF

Lymph node: NSF

Slide 13:

Skin: NSF

Ovary: NSF

Trachea: There is minimal multifocal epithelial cell hyperplasia

Slide 14:

Ovary: NSF

Oviduct: NSF

Slide 15:

Uterus: NSF

Urinary bladder or ureter: NSF

Slides 16, 17, 19 - 22:

Brain: Regionally at the edge of several sections parenchyma contains moderate numbers of scattered to clustered macrophages, fewer lymphocytes and reactive astrocytes. Blood vessels in these areas are surrounded by small numbers of lymphocytes, macrophages and occasionally hemosiderin laden macrophages. There are moderate numbers of extravasated erythrocytes surrounded several blood vessels in one section. The remainder of the brain contains more widely scattered, sometimes nodular, small accumulations of macrophages, fewer lymphocytes and glial cells. Occasional blood vessels are surrounded by small numbers of lymphocytes and macrophages. Rarely, inflammatory and glial cells surround a hypereosinophilic neuron. Neurons multifocally contain small amounts of lipofuscin.

Slide 18:

Cerebellum: Within the white matter a few small blood vessels are surrounded by moderate numbers of hemosiderin laden macrophages and fewer macrophages and lymphocytes. There is a single nodular accumulation of macrophages.

Final Diagnoses:

1. Brain: Moderate regional and mild multifocal histiocytic and lymphocytic encephalitis
2. Lung: Moderate multifocal to regional, neutrophilic bronchopneumonia and regional histiocytic alveolitis with type II pneumocyte hyperplasia and focal degenerate nematode
3. Lung: Moderate regional fibrosis
4. Heart: Focal myocardial fibrosis
5. Liver: Mild to moderate hemosiderosis

Ancillary Test Results:

None available at the time of report.

Comments:

The most significant findings in this adult dolphin were the encephalitis and the pneumonia. Both of these lesions could have contributed to stranding and death.

The encephalitis, though widespread, was most severe at the periphery of several of the examined sections. These sections may have been taken near the lesion described grossly. Given the gross description of the lesion and the morphology of the inflammation, parasitic encephalitis due to *Nasitrema* sp. infection is the most likely differential. Based on the widely scattered

inflammation throughout the brain, however, viral infection (i.e. morbillivirus) cannot be completely ruled out.

The pneumonia was consistent with both chronic and more acute disease (or acute on chronic disease). Areas of fibrosis were centered on bronchioles and are most consistent with previous lungworm infection. Differentials for the more neutrophilic inflammation include more active lungworm infection and possibly a secondary bacterial infection. The alveolitis was indicative of alveolar damage. This could occur from an allergic response to lungworms or secondary to decreased airway clearance of mucus and particles from damage to bronchioles.

Other described lesions were regarded as mild incidental findings.

Reported By:

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October 12, 2011