

ZOOLOGICAL PATHOLOGY PROGRAM STRANDED CETACEAN NECROPSY REPORT

Field ID: MB20110125-LA001
Additional Identifier: LA 450
ZPP Accession Number: 11-02Tt
Species: *Tursiops truncatus*
Strand Date: 1/25/2011
Strand Location: Grand Isle, LA
Sex: Female
Age Class: Adult
Necropsy Date:
Condition code: 2
Total Length: 243.84
Weight:
Blubber Depth:
Body Condition: 1.5 out of 5

Gross Necropsy: On File

Findings include (from gross report):

External: thin (bcs 1.5/5). Fluke: has a large rectangular notch missing from distal left fluke (7 cm long by 2cm). Appears to be very fresh (code 2)

Integument: Several irregular, small (up to 4x4cm) patches of light brown oil over parts of skin right side near head and just proximal to right pectoral flipper.

Numerous superficial scratches along body- most over cranial half (appear to be postmortem), with few scattered healed rake marks. Left side multifocal superficial round 3x3 to 8x8 cm diameter lesions into epidermis- appear to be pre-mortem as has signs of healing.

Left side of head 2cm distal to commissure of mouth- 2x2cm diameter by 1cm deep (within blubber) round ulcerative lesion with surrounding inflammatory ring. Collected culture swab and saved ½ for histo and ½ frozen.

Oral: most teeth (maxillary and mandibular) completely worn flat to gingival- few whole teeth still intact caudal maxilla and mandible bilaterally.

Respiratory system: Large amount white with yellow tinge foam throughout entire respiratory tract, including blowhole and into bronchioles.

Adhesion left mid-lobe to dorso-lateral pleura

Small numbers of granulomas (less than 8x8mm) with occasional lungworms present in distal bronchioles- no parasites noted in larger airways.

Diaphragm: mid-diaphragm has 2cm fish spine or ray barb embedded in tissue- does not appear to be grossly inflamed around foreign body

Pancreas: Mid-pancreas- multifocal black, round lesions over surface- largest 1x1 cm diameter by 4mm deep; others between 2x2 to 6x6 mm diameter and less than 4mm deep. All firm/non-caseous.

Ray barb embedded in pancreatic tissue- approximately 3cm long, serrated. Appears to minimal gross inflammation associated with tissue, no abscess/granulomas noted.

Adrenals: both appear greatly enlarged with severely reduced cortex/increased medulla.

Spleen: appears small (2x2x2 cm), globular

Lymph nodes: cranial tracheal LN pus-filled with large amount yellow custard pus (culture collected).

Slides/Tissues Received: 24 regular, 1 large cassette

Microscopic Findings:

Slide 1:

Lung (with adhesions per trim sheet): At the edge of the section, pleura is thickened by moderate amounts of fibrous connective tissue. Segmentally alveolar septae are mildly thickened by collagenous connective tissue.

Pulmonary associated lymph node: Sinuses contain small numbers of eosinophils. There are moderate numbers of macrophages containing dark brown-black pigment in sinuses (anthracosis).

Liver: Portal triads are surrounded by moderate amounts of fibrous connective tissue that sometimes bridges between portal areas. The hepatic capsule is segmentally thickened by fibrous connective tissue. A few portal areas contain small numbers of scattered lymphocytes and plasma cells. Diffusely hepatocytes contain small amounts of hemosiderin.

Slide 2:

Diaphragm: Within normal limits (WNL)

Atria: WNL

Cardiac lymph node: There is mild anthracosis.

Slide 3:

Ventricle: Multifocally, few individual to small clusters of myocytes are hypereosinophilic, lack cross striations and have pycnotic or hyperchromatic nuclei (degeneration and necrosis). Diffusely myocytes contain a small amount of lipofuscin.

Slide 4:

Kidney: There is minimal mild multifocal interstitial fibrosis. A few medullary tubules and rare tubules in the cortex are mineralized.

Cervical lymph node: Paracortical areas contain moderate numbers of plasma cells.

Slide 5:

Spleen: Lymphoid follicles are small. The red pulp contains moderate numbers of erythroid and myeloid precursors (extramedullary hematopoiesis).

Colonic lymph node: There is mild to moderate plasmacytosis and sinus histiocytosis.

Pancreas: Regionally, there are numerous moderately dilated, congested capillaries that mildly compress adjacent acinar cells. There is mild to moderate zymogen depletion

Slide 6:

Adrenal glands: Cortices are thin compared to the medulla which is thickened by increased numbers of slightly enlarged medullary cells.

Slide 7:

Skin ("2 cm ulcerative lesion" per trim sheet): The epidermis is moderately thickened with slight widening of rete pegs and increased layers of cells in the superficial keratinized layer. Within the central region of the section, the superficial epidermis is absent or pale eosinophilic, smudgy and necrotic and covered with filamentous bacteria. Underlying keratinocytes are markedly separated by accumulations of pale eosinophilic fluid and moderate numbers of neutrophils. Focally the mid to deep epidermal layers are completely obscured by neutrophils. The underlying dermis, adipose tissue, and skeletal muscle, contains moderate accumulations of viable and necrotic neutrophils and fewer macrophages and lymphocytes.

Slide 8:

Skin ("1 cm superficial lesion" per trim sheet): Centrally the epidermis is absent (partial sectioning artifact) and portions of underlying dermis are covered with mixed bacteria. Underlying superficial dermis contains moderate numbers of neutrophils. In deeper portions of dermis, moderate numbers of histiocytes, lymphocytes, and fewer neutrophils, extend between collagen bundles.

Slide 9:

Skeletal muscle: NSF

Lymph node: NSF

Slide 10:

Trachea: NSF

Peribronchial lymph node: There is mild anthracosis.

Slide 11:

Liver: See description for slide 1.

Prescapular lymph node: NSF

Slide 12:

Thyroid gland: Diffusely the thyroid gland is congested. In one small area, a few follicles are dilated and contain pale eosinophilic material.

Oral mucosa (presumptive): NSF

Pancreas: There is mild to moderate zymogen depletion

Slide 13:

Urinary bladder: NSF

Glandular stomach/pylorus: There are small numbers of scattered lymphocytes and plasma cells in the mucosa. The submucosa contains a few follicular lymphoid aggregates.

Slide 14:

Forestomach: Mucosa is mild to moderately thickened by increased layers of superficial epithelium.

Intestine: Multifocally, small to moderately sized arterioles and blood vessels in the submucosa and muscularis contain moderately sized accumulations of pale basophilic smudgy, acellular material. Similar material is adjacent to some blood vessels.

Slide 15:

Glandular stomach/fundus: Focally within the mucosa is a 150-200 micron diameter metazoan parasite with a eosinophilic integument. The parasite is surrounded by moderate numbers of macrophages, lymphocytes, plasma cells, and few multinucleated giant cells. There is an approximately 3 mm trematode in the lumen.

Slide 16:

Ovary: 3 CAs are present

Uterus: Endometrial blood vessels are thickened and have smudgy walls.

Slide 17:

Cervix: NSF

Slide 18:

Uterus: Endometrial blood vessels are thickened and have smudgy walls.

Slides 19 – 24:

Brain (cerebrum, cerebellum, brain stem): NSF

Slide 25:
Eye: NSF

Final Diagnoses:

1. Body as a whole: Thin body condition (gross and histologic diagnoses)
2. Teeth: Marked wear (gross diagnosis)
3. Pancreas: Locally extensive congestion and telangiectasia; moderate zymogen depletion
4. Skin: Moderate multifocal acute ulcerative and neutrophilic dermatitis
5. Diaphragm and pancreas: Multiple embedded fish or ray barbs (gross diagnoses)
6. Adrenal glands: Mild cortical atrophy and medullary hyperplasia
7. Small intestine: Moderate multifocal vascular and perivascular amyloid deposition
8. Forestomach: Moderate retention of superficial epithelium
9. Glandular stomach: Mild chronic lymphoplasmacytic gastritis; Minimal trematodiasis
10. Heart: Mild multifocal acute myofiber necrosis; mild diffuse lipofuscinosis
11. Liver: Moderate portal fibrosis; Mild diffuse hemosiderosis
12. Lung: Mild multifocal interstitial and pleural fibrosis
13. Pulmonary, cardiac, and peribronchial lymph nodes: Mild anthracosis
14. Cervical and colonic lymph nodes: Moderate plasmacytosis
15. Spleen: Mild extramedullary hematopoiesis

Ancillary Test Results:

None available at the time of analysis.

Comments:

The cause of stranding and death in this dolphin was not apparent histologically. Given the reported body condition score, thin body condition and debilitation may have contributed to stranding. Pancreatic zymogen depletion and retention of superficial epithelium in the squamous portion of the stomach are indicative of reduced food intake. The tooth wear and lipofuscinosis noted in the heart are consistent with this being an older dolphin.

There was no significant inflammation in the pancreas or the diaphragm to indicate that the grossly described ray or fish barbs embedded in these tissues were eliciting a significant inflammatory reaction. Red areas noted grossly in the pancreas corresponded to regions of telangiectasia (vascular dilation) and congestion. This was regarded as an incidental finding. The amorphous material described in the wall of the small intestine was most consistent with amyloid deposition, however, histochemical stains are required for confirmation. Amyloid deposition was also regarded as an incidental and age related finding. Amyloid deposition can occur secondary to chronic inflammation.

Pulmonary and hepatic portal fibrosis are noted with some frequency in free-ranging adult bottlenose dolphins and have been noted previously in dolphins from this region.

The vascular changes in the uterus and the CAs noted in the ovary indicate that this animal had historically been pregnant, though there was no indication of recent pregnancy.

Reported By:

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