

NECROPSY REPORT- SHORT FORM

Field ID: IFAW10-018Dd
 Accession Number: 10-179C
 Species: Delphinus delphis
 Date: 1/29/2010 (DOO and DON)
 Location: Eastham, MA
 Sex, Age Class: M, Adult
 TL:
 WT: 128.56 kg
 Body Condition: good
 Condition at Investigation: euthanized

GROSS REPORT

REPORTING INSTITUTION: IFAW

- Live stranding
- AEP conducted
- Various abrasions and focal scar (suspected prior rake)
- Focal pulmonary fibrosis
- Wet, heavy left lung
- 2nd and 3rd Stomach Chambers-Verminous gastritis
- Gastric Lymph Node-Fibrosis

ANCILLARY FINDINGS

Test	Tissue Tested	Result	Comment

TISSUES/SAMPLES RECEIVED

Received 25 May 2010 is a bag of labeled and unlabeled formalin fixed tissues. Tissues were submitted, trimmed, and sectioned at Histology Consultation Services and a total of 20 slides resulted.

MORPHOLOGIC DIAGNOSES

Systems with Significant Findings/Incidental Findings

Respiratory System:

A. Lung (Lesions 2 and 3):

1. Alveolar histiocytosis, multifocal, mild to occasionally moderate with abundant mucoproteinaceous exudates and occasional intra-alveolar mineral (**Figure 1**).
2. Interstitial fibrosis, multifocal.

B. Trachea: Tracheitis, lymphoplasmacytic, multifocal, mild.

Digestive System:

Stomach (Ulcer): Gastritis, granulomatous and ulcerative, regionally extensive, moderate with intralesional nematodes (**Figure 2**).

Hepatobiliary System:

Liver: Periportal fibrosis, multifocal, mild with mild biliary hyperplasia.

Hematopoietic/Lymphoreticular System:

A.Gastric Lymph Node:

- 1.Melanosis (presumptive).
- 2.Fibrosis.
- 3.Plasmacytosis.

B.Prescapular Lymph Node: Hyperplasia.

C.Right Lung-Associated Lymph Node: Anthracosis.

Endocrine System:

Thyroid Gland: Follicular cysts, multiple.

Integumentary System:

Skin:

- 1.Hypopigmentation.
- 2.Mild hydropic swelling of basal layer.

Genital System:

Testes: Active.

Tissues without Significant Findings/Incidental Findings: Left ventricle, left atrium, right atrium, right ventricle, interventricular septum, spleen, apex of heart, left kidney, pylorus, right kidney, tracheobronchial lymph node, duodenum, diaphragm, mid-intestine, mesenteric lymph node, right adrenal gland, pancreas, pancreatic lymph node, aorta, brain, urinary bladder, skeletal muscle, and tonsil.

FINAL DIAGNOSES/INTERPRETATIVE SUMMARY

Diagnosis
Euthanasia
Verminous Gastritis
Alveolitis

The cause of death of this stranded, adult male *Delphinus delphis* was euthanasia. Systemic factors (e.g. infection, inflammatory disease, chronic diseases (e.g. renal failure) contributing to stranding were not evident with microscopic examination. Verminous gastritis is not an uncommon finding in free-living cetaceans and unless there is either an extremely high load of parasites or perforation of the wall of the viscus with associated peritonitis, this finding is less likely to have played a role in stranding. In the lung, there was mucoproteinaceous fluid within alveolar spaces along with macrophages. The source of this inflammatory and exudative response was not determined and could have occurred during the course of stranding in an animal with compromised respiratory function (mechanical). Basophilic substance was occasionally observed within alveolar lumina. This is likely mineralized debris. Special stains for calcium salts (Von Kossa) and infectious agents (fungi) can be done to better define this substance. Fibrosis was observed in the liver and lung, but neither are considered severe enough to result in organ dysfunction.

FIGURES

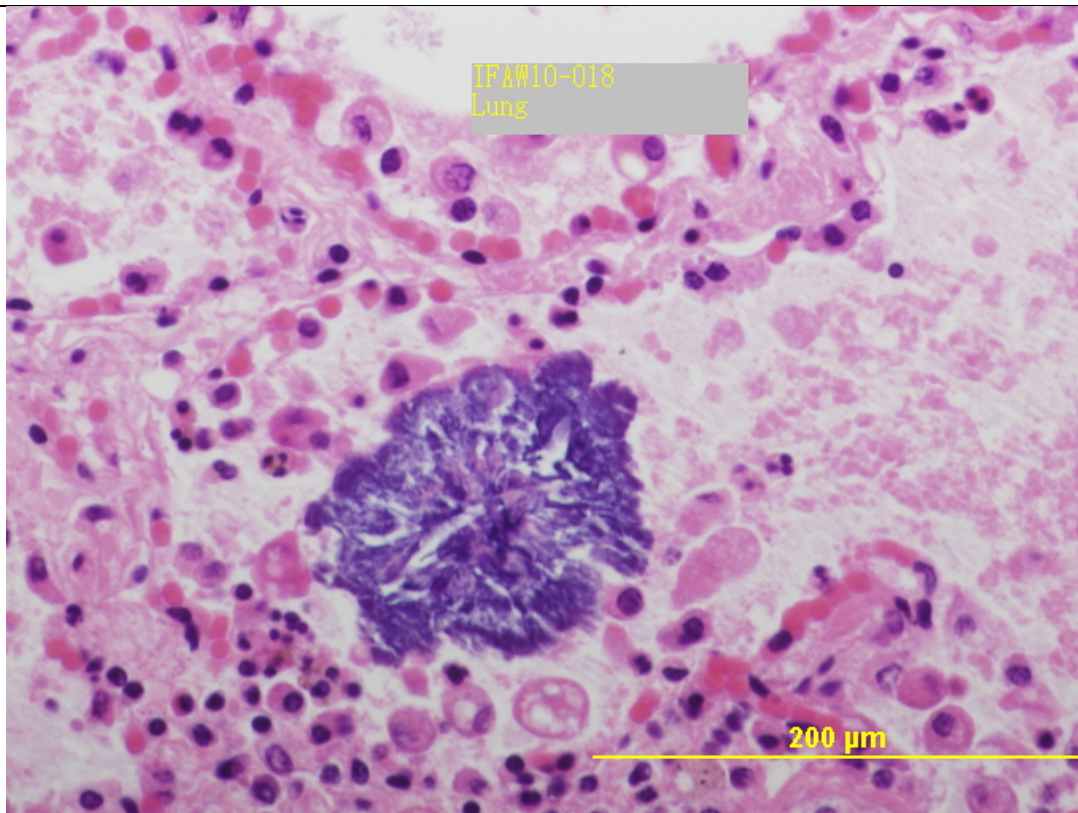


Figure 1. Lung. The alveolar lumen contains eosinophilic fluid, macrophages, and basophilic substance (mineral).

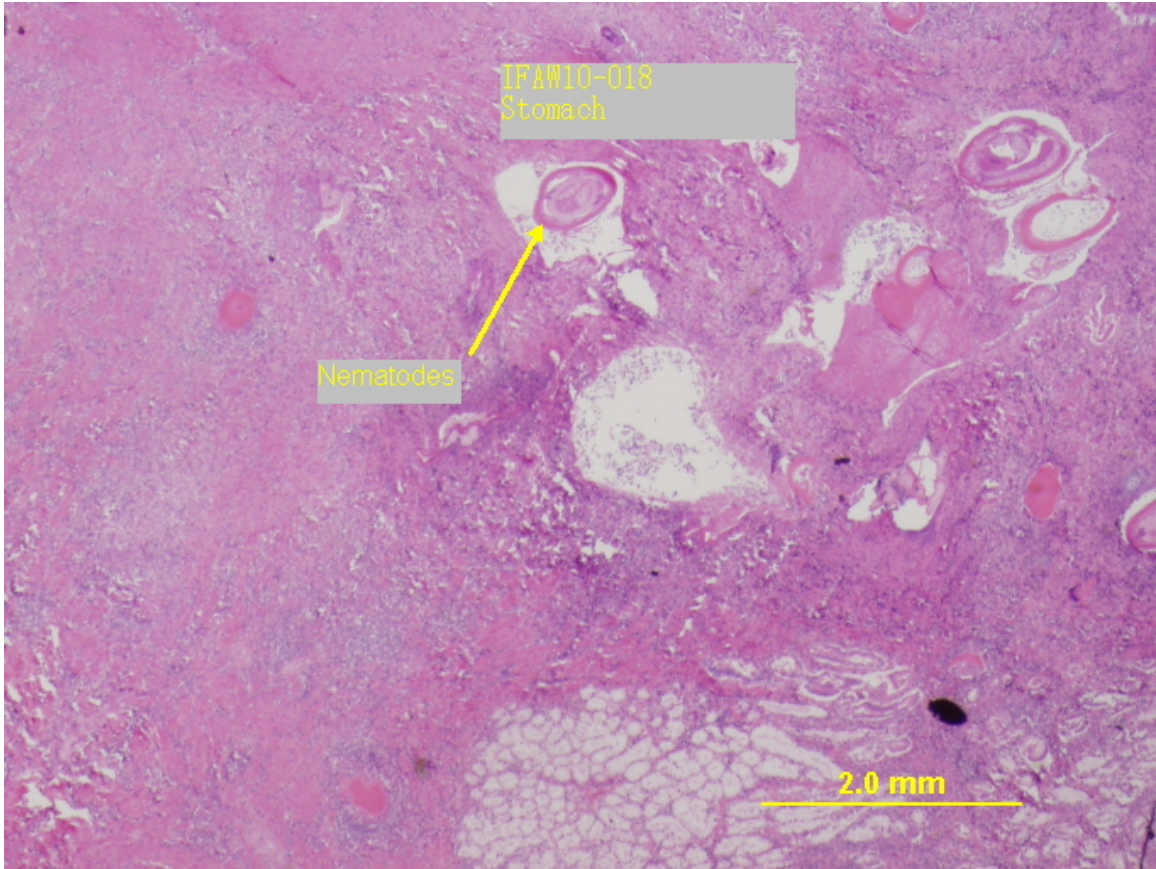


Figure 2. Stomach. Within the tunica submucosa and muscularis, there are granulomas centered around nematodes.

PENDING TESTS-PATHOLOGIST			
TEST	PURPOSE	SITE	RESULT
DATE: 21Aug2010		REPORTING PATHOLOGIST: David S. Rotstein, DVM, MPVM, DACVP	

Event Info
Report Date: <u>1/29/2010</u>
Recovery Date: <u>1/29/2010</u>
<u>Euthanized</u> / Died
Date & TOD: <u>1/29/2010 19:42</u>
Necro Date & Time: <u>1/30/2010</u>
Storage Prior to Necropsy: <u>chiller</u>
Stranding Location: <u>Thumpertown Beach, Eastham</u>
Lat/Long: _____N/_____W

Animal Info
Sex: <u>M</u> F CBD
Length: _____cm / in / ft
Weight: <u>128.65</u> lbs / <u>Kg</u>
Pup / Calf / YOY / Sub-adult / <u>Adult</u> / CBD
Condition at Stranding: <u>1</u> 2 3 4 5 6
Condition at Necropsy: 1 <u>2</u> 3 4 5 6
Human Interaction: Yes / No / CBD / NE
Mass Stranding: Yes / <u>No</u>
Animals: <u>1</u>

Necropsy Summary – Differential Diagnosis From Gross Exam:

Death due to stranding/exposure to elements, not primarily due to stress Of stranding. Environmental conditions rather than stress caused ultimate Death. Right lung gross pathology.

Test Results:

Tests Completed/Sent Out:

- √ Ultra Sound
 - √ AEP
 - √ CT Scan
 - √ Blood work
 - √ Microbiology
 - √ Histology
- (See end of report for details)

Final Diagnosis (only after all reports are completed):

Final Diagnosis Code:

History

Reported trying to strand in the morning, at 2 pm the animal stranded on an outgoing tide with winds up to 50 knots, sandblasted. Animal transported in trailer where it was assessed. Decided to try and sedate (for the first time) with 0.1 mg/kg midazolam sedated, ultrasound performed, (for the first time) AEP procedure conducted, at the end of which no palpebral reflex noted, and it was euthanized at 19:42 1/29/10.

Necropsy Observations: Please note general observations of color, condition, textures, etc. even when utilizing NA= not applicable, NE= not examined, NSF= no significant findings, NVL= no visible lesions. List weights (g) next to each organ examined.

External Exam

Body Condition: robust thin emaciated CBD

Skin/Hair Coat (color, condition): Skin appears bubbly, de-vitalized, frost bitten. Air temperature below freezing (most likely cause).

Wounds/Scars:

Scar on right side of eye, cloud shaped- 2 x 4 cm. Eye abraded on left side. Linear scar on right side of eye leading to pectoral fin. Left side of fluke abraded with no skin left, vessels apparent. Sloughed skin on both axilla/pec fin. ventral side, scraped off (compression from lying on pec fins). Ventral side- skin from anus to peduncle scraped off. Left hand side of the peduncle, 3 straight clear indentations appear to be scars that are 15 cm long, appear that two are spaced 3 cm apart, look like old rake marks, but hard to tell because skin is bad shape.

Lesions: Few rake marks present throughout surface.

Parasites (found externally): none external

Nostrils/Blowhole: Traces of dried froth behind blow hole. Narial sacs clean

Mouth (tongue, teeth condition, ulcers)/ Mucous membranes (color): Frothing in mouth while in trailer. Teeth some worn upper left (3), mucosa pale, right upper side mid jaw section of worn teeth (6+) Left pharynx – some streaking ? laryngitis – histo taken. Also some redness on right.

Eyes (discharge, color, ruptures): Left eye abraded superficial posterior to eye, intact. Blood coming from abrasion, but not eye itself. Skin around it is sloughing off.

Ears: Pinnae very apparent externally. Skin coloration of line leads right to opening.

Genital slit/anus: NSF, well defined pores between slit and anus.

Umbilicus: Pink Open Healed

Musculo/Skeletal System

Blubber: Good cervical fat pad, thick blubber layer, creamy white, oily. From ventrum to right side mid dorsal, discolored reddish blubber color, appears hemorrhaged 2/3 of body- more in epidermis than in blubber. Phyllobothrium within 15 cm of anus only. Cluster ventral and dorsal only 15 cm to each side of anal slit.

Muscle: Good condition, not friable/degraded, not dehydrated. Fat pad under umbilical region (blubber/muscle/blubber layer)

Diaphragm:

Circulatory System

Pericardium: Full of blood within, unclotted, thick tissue, opaque

Heart: No bubbles on epicardium, fat layer surrounding vessels, Surface of right side is a dry/gritty texture (heart stick euthanasia).

Vessels: NSF

Pulmonary System

Trachea: Clear no froth,

Bronchi: No froth

Lungs (color, condition, edema, congestion, consolidation, granulomas, emphysema, lesions):

(R) Deflated lung on right side. Dark, heavy wet, serosanguinous fluid. 2 cm area of inflammation and fibrosis. No parasites. Vascular congestion. 3 sampling areas 1) in with label lung and lesions- 2) and 3) are lung lesions 2 and lung lesion 3.

Left and right lung associated lymph- dark in color with white mottling.

(L) Inflated lung on left side. External.

Gastrointestinal System

Esophagus: NSF

Stomach (contents, ulcers, mucosa, parasites):

Weight Full - _____ Weight Empty - _____

Stomach empty in first and second chambers. First chamber is very clean/dry, stained yellow. The second/main stomach has ulcerative area due to live nematodes attached 1.5 cm diameter.

Pyloric stomach with small focal dark black lesions (pen tip size). One lesion is red, superficial to the internal area of stomach.

Mesentary normal, abdomen not shocky, visceral fat everywhere, no active chyle/lacteals.

Intestines:

Gassy, uniform color, empty except for green fluid/pasty at last third. No signs of blood in posterior gut/colon, duodenum and last chamber of stomach full of very thin clear pale yellow fluid (watery).

Colon: NSF

Omentum, Mesentery, Peritoneum:
NSF

Liver (color, congestion, lesions, size): right lobe appears sunken, while right lobe is firm. When cut, the sunken area released blood and fluid, while the right side did not. Tissue is "flat" on left side as well. Nodular consistency, fragmented, but not friable. Left side firm, blood in vessels, homogenous color.

Gall Bladder/ Bile Duct/ Pancreaticoduodenal Duct (color, amount): Yellow color, no parasites.

Pancreas: Hemorrhage on surface/middle of pancreas surface. Tissue of this area is soft and falls apart (friable). Areas of hemorrhage also deep within the tissue. Tissue without red areas are firm and normal pancreas tissue. Three areas within that are red deep within the organ. The side connecting the pancreadudo. Junction has few areas of red, while the other side further is deeper. (photographed and points to areas)

Gastric lymph node- (on stomach, underneath pancreas, mesentery on first chamber of stomach) large, mostly inactive, external areas of dark black hemorrhaging but in uniform pattern. (accumulation of black) Dry, pale glistening internally. Mostly fiber connective tissues. Several round darkened areas in circular pattern around caudle most pole- 3 to 4 clusters, spherical 1/2 to 1 cm. Tough, fibrotic, appears to be black tissue interlaced with white shiny connective tissue.

Urinary/Reproductive Systems

Kidneys (reniculi differentiation, color, condition):

(R) No stones, interlobular fat present throughout, loosely adhered reniculi, can see differentiated cortex/medulla, homogenous red color throughout.

(L) capsular bubbles – same as right. More held together/adhered (reniculi) than right.

Bladder: Firm, no urine, thick tissue, beige/light color, NSF

Testes / Ovaries: Immature / **Mature-**
Sperm present in semifirous tubules

(R) weight: 750.7 (with epy)

Lx W x H cm: 36 x 8.5 x 3.5

(L) weight: 736.3 g (with epy)

Lx W x H cm: 36x 9x 3

Pregnant? : Y / N / **NA (male) / CBD**

Peri-Anal Ducts- apparent 2 mm wide ducts through blubber, move laterally

Lymphatic System

Sub-Scapular Lymph Node:

(R) NE

(L) NE

Pre-Scapular Lymph Node:

(R) edematous, dark red , moderaltely reactive

(L) NE (might be with head)

Thymus:

Mandibular lymph: enlarged (R) swollen, reactive, wet, hemorrhagic, edematous.

Tracheobronchial Lymph Node:

(R) Small- very dark red internally, white mottled areas (follicular demarcation). Dark black on one margin, grey on the other.

Maxillary lymph node- acute, large, red, wet.

Spleen: nodular, firm in center, pulp is red with white striations, small round shape, 1 spleenete,

Mesenteric Lymph Node: Depleted, not active, tan to beige in color.

Endocrine System

Thyroid:

Thyroid tissue firm, believe what is the parathyroid visible internal as an orange dot.

Adrenals:

(R) 6.2 g

Lx W x H cm: 6.3 x 2 x 1.5 cm

Tissue appears "flat" , NSF

(L) 6.5 g

Lx W x H cm: 5.0 x 2.3 x 1.4 cm

Sub cortical hemorrhage on left side.

Right labeled in histo, not left.

Other:

CNS

Spinal Cord:

Brain: minor bubbling in cortical vessels. Surface of brain and meninges normal

Pterygoid Sinuses: clear both sides

Skeletal- right pectoral joint, synovial fluid is present, blood tinged. Scapular left side NSF.

Other

Thoracic Cavity: NSF

Abdominal Cavity: 50 CCs of thin serosanguinous fluid, NSF.

Internal Parasites Summary (location, type, #):

Phyllobothrium on dorsal and lateral sides of the animal, live nematodes in fore and main stomach, monorygma substantial (12+) at the end of the abdomen, near penis and bladder.

SUMMARY- Differential Diagnosis from Gross Exam (Same as front page):

Tests Completed or Sent Out:

- X Ultrasound
- X AEP
- X CT Scan
- Blood Work (In house)
- Blood Work (IDEXX)
- Microbiology (IDEXX)
- Histology (Date sent: _____)
- Ultrasound Report
- Ultrasound Images
- AEP
- CT Report
- CT Images
- In house Blood Work Paper work
- IDEXX Blood Work Report
- IDEXX Microbiology Report
- Histology Report

Reports/Results Received:

CARCASS DISPOSITION:

Soft tissue: MRF freezer

Skeleton: MRF freezer Head in a separate bag

[# of bags: ____]

]

PROSECTORS (list names with primary prosector signature, & pp highlighted):

Early, Bogomolni, Harper, Cassoff

SAMPLES/DISPOSITION

See attached list

PHOTOS/VIDEO

Camera Used: MRF Sony

Photo disposition:

Video: Y/N Video disposition:

ASSOCIATED DATA SHEETS

- NMFS Level A Data Form
- Human Interaction Protocol
- Pinniped / Cetacean Data Record
- Necropsy/ Archive sample list

Researcher Sample Collection List

Researcher	Affiliation	Sample type	# of samples	Method of storage/location