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Doctor: Okimoto	Date: August 4, 2014
Clinic: Honolulu Zoo 151 Kapahulu Avenue Honolulu, HI 96815	Access: V118600-5 Species: Artiodactyla Breed: Hippopotamus Sex: Female Name: -
ISIS: 910075	Age: 24 Years Type:

CLINICAL INFORMATION

Recently exposed to construction noise adjacent to sleeping quarters and exhibit. Recently, the animal had decreased food consumption and a change in behavior. It was found dead on 7/18/14.

GROSS EXAMINATION

There was variable postmortem degeneration. Free fluid was seen in the abdominal cavity. The lungs appeared to be congested. Adrenal glands were not found. Possible mucosal erosions were noted in the glandular stomach, and a portion of small intestine appeared to be reddened.

MICROSCOPIC

Submitted are multiple sections of tissue. Moderate to severe autolysis is noted, affecting essentially all tissues.

Forestomach: Multiple sections are examined. No lesion is seen.

Glandular stomach: Multiple sections are examined. No lesion is seen.

Small intestine: Multiple sections are examined. No antemortem lesion is seen.

Large intestine: Multiple sections are examined. No antemortem lesion is seen.

Uterus/cervix: No lesion recognized.

Large artery: No lesion recognized.

Pancreas: The pancreas is comprised of large islands of acinar cells separated by histologically normal adipose tissue.

Skeletal muscle: No lesion recognized.

Kidney: No lesion recognized.

Liver: Several sections are examined. Within some sections, there is mild vacuolation of hepatocytes.

CONTINUED

Lung: Diffuse congestion is present. Within one section, there is diffuse alveolar edema.

Heart: No lesion recognized.

Spleen: Lymphoid depletion is noted.

Lymph node: There is lymphoid depletion. No lymphoid follicles are seen.

DIAGNOSIS

- 1) **MODERATE TO SEVERE AUTOLYSIS – MULTIPLE SECTIONS**
- 2) **POSSIBLE FAT INFILTRATION/PANCREATIC ATROPHY – PANCREAS**
- 3) **MILD DIFFUSE VACUOLAR HEPATOPATHY – LIVER**
- 4) **MILD DIFFUSE CONGESTION – LUNG**
- 5) **SEVERE DIFFUSE EDEMA – LUNG (ONE SECTION)**

COMMENT

Unfortunately, the autolysis makes evaluation of tissues, particularly in the intestinal tract, difficult. Even with the changes, however, I do not see any indication of any underlying inflammatory or necrotizing process. This does not rule out the possibility of mild acute necrosis with no inflammation; however, it certainly would suggest that the changes noted in the gastrointestinal tract grossly may have been due to autolysis. The edema noted in one section of lung is considered postmortem and represents hypostatic edema. The changes in the spleen and lymph node could indicate a stress reaction; however, comparison with an age matched control would be necessary to make an accurate evaluation. The appearance of the pancreas suggests that there may be some fatty infiltration into the pancreas with separation of portions of the exocrine pancreas. It could be that this change is enough to have caused a minor metabolic problem; however, that is difficult to determine morphologically. Remaining pancreas appears to be essentially normal. The cause of death of the animal is not determined. The pancreatic and hepatic changes could indicate some sort of mild metabolic problem, and the splenic and lymph node changes may indicate a stress reaction; however, there is certainly no evidence of any underlying active disease process present. The role of environmental stress should be speculative but certainly is one possibility to consider.

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