



The office of Drs. Jason and Jamie Sullivan

Sloth presented deceased in AM; he passed earlier in the morning.

No outward signs of illness or injury

BCS 5/9

Ventral midline approach to necropsy

- No free fluid in abdomen
- Moderately distended forestomach with gas (post mortem)
- Stomach small and normal in appearance and feel. Small amount digesta within consisted of a few sticks or twigs with critical care (biopsied)
- Liver normal shape, color and consistency (biopsied); Gallbladder appeared normal in size and shape
- Spleen very small/contracted (biopsied)
- Small intestines- slightly pale in color (biopsied) This structure is relatively empty with some feces in colon
- Kidneys normal (biopsied)
- Adrenals not visualized
- Testis normal (biopsied)
- Bladder full- urine appeared normal
- No free fluid in thorax
- Normal lungs- pink and light fluffy tissue throughout (biopsied)
- Heart- small amount of light pink fluid in pericardium. Upon opening heart, some fat pad or similar tissue in the ventricle (normal?)- Entire heart submitted for pathology.

The only abnormality on necropsy is the mild changes on the heart (and those may be normal or post mortem). Heart submitted in its entirety as well as other to NW Zoopath for histopathology. Awaiting diagnostics for zinc toxicity from Idexx.

Addendum:

Zinc levels- 0.4ppm (reference for cage birds is 0.8 to 2.5ppm) @ Louisiana State University

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Case No.:

Obtained: 04/08, rec'd 04/12/21

Reported: 04/14/21

Dr. Sullivan
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Patient ID: Two-toed Sloth
Account #:
Telephone:
FAX #:
E-mail:

HISTORY: This 2-year-old male two-toed sloth had been acquired four months earlier and was doing well. It had a one-week history of focal erythema on the inside aspects of the elbows. The lesions were nonpainful and resolved spontaneously. The animal subsequently developed reduced food intake, was subsequently found hypothermic, and then minimally responsive on the floor of the enclosure. Supportive care was administered, and as the animal recovered, it developed twitching behavior. The animal was discharged but subsequently died. Necropsy revealed a small amount of fluid in the pericardium and no other remarkable findings. A conspecific had a similar presentation and was diagnosed with intravascular hemolysis, disseminated intravascular coagulation, and necrosis due to hypoxia in various tissues.

CLINICAL DIAGNOSIS: Open, toxicosis.

GROSS: Received in formalin are multiple tissues to 6 cm. in greatest dimension that are processed in seven blocks.

MICROSCOPIC: **Heart:** Thrombi are present within the vessels of the myocardium and within the central lumen of the left ventricle. Multifocal mild neutrophilic/lymphocytic inflammation is in the myocardium, and multifocal individual myofiber necrosis is mild to moderate. **Liver:** Kupffer cells are hypertrophied and contain phagocytized cell debris, and centrilobular regions have congestion. **Spleen:** The spleen is congested and has some mild erythrophagocytosis. **Kidney:** Moderate to marked tubular necrosis is noted, and some of the tubules contain protein casts and are lined by epithelial cells that contain pigment interpreted as bile or iron. **Lung:** The parenchyma is congested, and mild emphysema is noted. The following tissues are histologically within normal limits: testicle (active spermatogenesis), colon, intestine, duodenum, stomach, adipose, and diaphragm.

HISTOPATHOLOGIC DIAGNOSIS:

1. Acute thrombosis with myocardial necrosis and mild acute myocarditis.
2. Kupffer cell activation and centrilobular congestion, liver.
3. Congestion and emphysema, lung.
4. Erythrophagocytosis, spleen.
5. Moderate to marked renal tubular necrosis.

COMMENT: Histologic findings in this case share many features of those seen in a conspecific submitted earlier, and it is likely that this is the same disease process but at an earlier stage in disease development. I have some concerns for an infectious process based on the myocarditis and thrombosis. You may want to consider PCR for encephalomyocarditis virus and possibly herpesvirus. These procedures are best performed from fresh or frozen tissue, although the PCR can be performed from paraffin-embedded tissue with less sensitivity. Please notify the laboratory if you would like PCR

Page 2

G21-1521, Two-toed Sloth
Aloha Animal Hospital

attempted from the paraffin block (block #1 or #2). The cause for the twitching behavior could not be determined from the submitted tissues, which did not include the central nervous system. This animal was in good nutritional status at the time of death.

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NZP Code: M, 1, 9f, 2; myocardial necrosis, myocarditis, thrombosis, renal tubular necrosis.