

Veterinary Diagnostic Laboratory
College of Veterinary Medicine
1333 Gortner Avenue
St. Paul, MN 55108

Diagnostic Summary Report

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Accession Number: D20-004113

Owner: DNR NON GAME
BRAINERD, MN

Received Date: 02/03/2020

Site:

Reference:

Species: Avian, Miscellaneous

Premises ID:

Breed: Trumpeter Swan

Date(s) Sampled:

Age: Adult **Sex:** Unknown

Submitted by: DNR-Non Game & Wildlife
Program
Attn: Pam Perry
1601 Minnesota Drive
Brainerd, MN 56401
US

Weight: 9 kg

Status: Preliminary

Preliminary: [02/04/2020 16:30:00](#)

Preliminary: [02/06/2020 13:08:00](#)

History: This adult male trumpeter swan was found dead on a lake near the shoreline on February 03, 2020. The necropsy was performed by Melissa Wolfe, Dr. Albert Canturri and Dr. Arno Wunschmann on February 04, 2020 between 2 and 3.15PM on the necropsy floor of the Minnesota Veterinary Diagnostic Laboratory.

Specimen: The whole carcass of an adult male trumpeter swan was submitted in a state of good postmortem preservation.

Necropsy: General condition: The animal was underweight based on the scant amount of internal adipose tissue (BW: 9.2kg).

Body cavity: There were no significant macroscopic lesions.

Integument: There were no significant macroscopic lesions.

Alimentary system: The ventriculus contained a silver metallic, approximately 3mm by 2mm by 2mm structure with a central opening (interpreted a fishing line weight). The ventricular mucosa was green (bile-stained). The liver weighed 217g (considered to be of normal size and weight).

Urinary system: There were no significant macroscopic lesions.

Respiratory system: There were no significant macroscopic lesions.

Endocrine system: There were no significant macroscopic lesions.

Hemolymphatic system: The spleen was mildly enlarged, light brown and soft.

Nervous system: There were no significant macroscopic lesions.

Reproductive system: There were no significant macroscopic lesions.

Cardiovascular system: The heart appeared to be mildly enlarged (weighing 119g). Less than 2ml of watery clear colorless fluid were present in the pericardial sac.

Locomotive system: There were no significant macroscopic lesions.

Histopathology: Slide A: Spleen, red pulp hyperplasia, moderate.

Tibiotarsal diaphyseal bone marrow, nsml.

Slide B: Lungs, thyroid gland and parathyroid gland, nsml.

Slide C: Liver: a. canalicular bile stasis, moderate to marked.

b. Kupffer cell hyperplasia and hemosiderosis, widespread.

c. accumulation of brownish granular pigment in hepatocytes, moderate.

d. hepatitis, lymphoplasmacytic, portal/periportal, mild.

Cerebellum and brainstem, nsml.

Slide D: Cerebrum, thalamus and mesencephalon, nsml.

Slide E: Cerebrum, thalamus and mesencephalon, nsml; (possibly capillary thrombosis with necrosis in one nucleus of the mesencephalon).

Slide F: Adrenal gland, testis, duodenum and pancreas, nsml.

Slide G: Heart, fibrinoid necrosis of myocardial vessel, focal with fibroplasia in adjacent myocardium.

Slide H: Intestine and kidney, nsml.

Slide I and J: Eyes, fibrinoid necrosis of a conjunctival artery/arteriole.

Toxicology: A sample of liver was submitted for ICP mineral element and heavy metal analysis.

Molecular diagnostics: A cloacal swab was submitted for avian influenza virus and Newcastle disease virus-specific PCR.

Diagnosis: Preliminary

1. Hydropericardium, mild.
2. Ventriculus, intraventricular metallic foreign body.
3. Heart, fibrinoid necrosis of myocardial vessel, focal with fibroplasia in adjacent myocardium.
4. Eyes, fibrinoid necrosis of a conjunctival artery/arteriole.
5. Spleen, red pulp hyperplasia, moderate.
6. Liver:
 - a. canalicular bile stasis, moderate to marked.
 - b. Kupffer cell hyperplasia and hemosiderosis, widespread.
 - c. accumulation of brownish granular pigment in hepatocytes, moderate.
 - d. hepatitis, lymphoplasmacytic, portal/periportal, mild.

Comments: The vascular lesions and heart lesion are suggestive of lead toxicity. The presence of a metallic foreign body in the ventriculus may be supportive of this diagnosis although chemical analysis of the metallic material would be necessary to prove that it was in deed composed of lead. Further investigation is pending.

The metallic foreign body and samples of spleen and kidney were saved frozen.

Testing Summary

Laboratory/Procedure	Ordered	Count	Result	Quantifier	Interpretation	Result Value	Entered	Completed
Histology H&E Slide Preparation-Tissue	02/06/2020	10	Slide Prep Complete				02/06/2020	02/06/2020

Testing Summary

Laboratory/Procedure	Ordered	Count	Result	Quantifier	Interpretation	Result Value	Entered	Completed
Unstained Paraffin Sections-Tissue	02/07/2020	3	Slide Prep Complete				02/07/2020	02/07/2020
Immunohistochemistry								
Calcitonin IHC-Thyroid Gland	02/07/2020	1	Slide prep complete				02/07/2020	02/07/2020
Parathyroid Hormone IHC-Thyroid Gland	02/07/2020	1	Slide prep complete				02/07/2020	02/07/2020
MN Poultry Testing Lab								
Avian Influenza Vet Max Gold Real-Time PCR-Cloaca	02/07/2020	1	NEG				02/07/2020	02/07/2020
Newcastle Disease Matrix Gene Real-Time PCR-Cloaca	02/07/2020	1	Incomplete					
Necropsy								
Nec/Gen Exam Zoo/Exotic/Wildlife 0-20 lbs-N/A	02/05/2020	1	Animals Examined				02/05/2020	02/05/2020
Necropsy/Histopathology Only								
Histopathology-Tissue	02/05/2020	1	See report				02/05/2020	02/05/2020
Outsourced Lab Service								
Minerals, tissues - MSU-Liver	02/07/2020	1	Incomplete					
Outsource Preparation-Liver	02/05/2020	1	Reference Lab				02/07/2020	02/07/2020