S01682-18
Report Date
26 JUL 2018 09:35

UNIVERSITEIT VAN PRETORIA
UNIVERSITY OF PRETORIA
YUNIBESITHI YA PRETORIA

Faculty of Veterinary Science
Pathology Laboratory

Owner: OLD CHAPEL VET CLINIC
PO BOX 32439
TOTIUSDAL, GP 0134

Accession Number: S01682-18
Reference Number: JOSEPH - LION

Received: 05/14/2018 **Finalized:**
Sampled:

To: .
OLD CHAPEL VET CLINIC
PO BOX 32439
TOTIUSDAL, GP 0134

History: Age related deterioration; bilateral glaucoma; corneal ulceration, CNS symptoms, turning and reversing. Possible brain related disease (brain tumour). Inappetance. Lethargy. Euthanasia by IV Pentobarbitone after sedating with medetomidine and ketamine.

Preliminary Report

TEST REPORT: PATHOLOGY - (PENDING)

HISTO SPECIAL STAIN

ANIMAL ID	Joseph
SPECIES	Exotic & Game
BREED	Lion
SEX	Male Intact
AGE	16yr
SPECIMEN DESC	Cassettes
SPECIAL STAIN HISTOPATHOLOY	PERIODIC ACID SCHIFF

NECROPSY WITH HISTO LA

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TEST REPORT: PATHOLOGY - (PENDING)

ANIMAL ID	Joseph
SPECIES	Exotic & Game
BREED	Lion
SEX	Male Intact
AGE	16yr
SPECIMEN DESC	Dead Animal
PM LAB TEST	Blood Smear – no abnormalities. No blood parasites seen. Faecal float: 3+ Toxocara eggs seen (Leonina). Urine dipstick: pH 6.5 and 3+ proteins. Skull measurements: 2.8cm diameter of the foramen magnum, 1cm at cranial cranium ,0,5 cm mid cranium and 1 cm at cerebellum.
PM CHANGES	Moderate autolysis and putrefaction.
SPECIFIC CHANGES	Severe bilateral corneal oedema and ulceration (history of bilateral glaucoma); mild diffuse pulmonary atelectasis, multiple well circumscribed hepatic cysts.
INCIDENTAL FINDINGS	Mild diffuse right ventricular endocardial congestion; mild diffuse splenomegaly due to red pulp hyperplasia; moderate verminosis.
HISTOPATHOLOGY	Liver: multilocular cysts lined by single cuboidal epithelium with entrapped groups of hepatocytes and generalised severe hepatic congestion. Lungs: focal mineralisation associated with locally diffuse histiocytic inflammatory infiltration; mild multifocal anthracosis (incidental). Eyes: chronic moderate lympho-plasmacytic anterior uveitis with narrowing of the draining angle; moderate retinal atrophy (neurons were mostly absent and some areas of the granular layers were also absent). Brain: multifocal lympho-plasmacytic meningo-encephalitis and mild satellitosis of neurons as well as marked accumulation of lafora bodies and neuronal lipofuscinosis, particularly in the white matter. Spinal cord: multifocal subdural mineralisation. The spleen, heart, stomach, adrenal glands, thyroid glands, small and large intestine, skeletal muscle, sciatic nerve, kidneys, pancreas, testes and tongue, did not show significant histopathological changes.
DIAGNOSIS	Euthanasia due to neurological symptoms; meningo-encephalitis; severe bilateral glaucoma.
COMMENTS	The cause for the neurological clinical signs are attributed to two possible causes. Firstly, meningo-encephalitis and satellitosis, for which a cause could not be found, included lympho-plasmacytic cellular infiltrate, which suggests a possible viral or protozoal origin. An alternative cause for the neurological signs is the striking lafora body accumulation in the brain and spinal of this lion. Lafora bodies are complex glycoprotein neuronal inclusions. They are circular in shape and stain positive with Periodic Acid Schiff stain (PAS) stain. Although lafora bodies and lipofuscinosis (also present in this animal) are common findings in older animals, the lafora body inclusions were in such high numbers that it may have bordered on pathological in this lion. In humans, Lafora Body Disease is described clinically as an epileptic disorder and in dogs, excessive lafora body inclusions are associated with neurological signs. The extent of lafora body accumulation in this lion was investigated with PAS special staining. In addition to these two findings, bilateral glaucoma with associated corneal ulceration and loss of eyesight likely contributed to the “neurological signs” by causing voluntary in-coordinated movement due to animal being unsure of its surroundings.

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The spinal cord mineralisation was insufficient to cause pacchymeningitis and was thus not considered to be a significant contributor to the neurological signs.

The focal mineralised histiocytic lesion in the lung was unusual and thought to be associated with previous localised infection or infarction.

Hepatic biliary cysts are considered more common in lions than in other nondomestic felids and can be congenital or associated with pathological changes, such as cholangiocellular carcinoma and polycystic disease, which mainly includes renal cysts as well. Given the lack of associated pathology in the kidneys, gall bladder and liver, it was more likely a congenital condition in this lion.

There was no macroscopic or histological evidence of a brain tumour.

References:
Bernard, J.M., Newkirk, K.M., McRee, A.E., Whittemore, J.C. and Ramsay, E.C., 2015. Hepatic lesions in 90 captive nondomestic felids presented for autopsy. Veterinary pathology, 52(2), pp.369-376.

Caliendo, V., Bull, A.C. and Stidworthy, M.F., 2012. Congenital biliary tract malformation resembling biliary cystadenoma in a captive juvenile African lion (Panthera leo). Journal of Zoo and Wildlife Medicine, 43(4), pp.922-926.

Summers, B.A., Cummings, J.F. and De Lahunta, A., 1995. Principles of neuropathology. Veterinary neuropathology.

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