MICHIGAN STATE UNIVERSITY

DIAGNOSTIC CENTER FOR POPULATION AND ANIMAL HEALTH

Protecting Human and Animal Health

Director: Dr. Thomas Mullaney
4125 Beaumont Road
Lansing, MI 48910-8104
Phone: 517-353-1683
Fax: 517-353-5096
www.animalhealth.msu.edu

REPORT OF LABORATORY EXAMINATION

Client:

White Shepherd Genetics Project (295483)

Project
PO Box 2068
Howell, MI 48844-2068 USA

Owner:

Erskine, Gloria

Rcvd Date:	04/05/2007 12:02:00 PM	Animal:	QUEST	MRN:	
Admitted By:	Not, Provided	Species:	Canine	Breed:	German Shepherd
Ordered By:	N/A	Age:	11 years	Gender:	Male, Castrated
Encounter:	00345830	Tag/Reg ID:			
CR#:	AP 709512022	Other ID:			

Necropsy Preliminary Report

Accession Number:	Received Date/Time:	Verified Date/Time:	Pathologist:
NC-07-0000541	04/05/2007 12:02:00 PM	04/06/2007 08:05:16 PM	Kiupel, Matti

History

According to the history provided, this dog had chronic dysplasia of the hips and elbows and arthritis of the stifle joints. Also, the dog was losing control of his hindquarters. The dog had been previously diagnosed with epilepsy. The dog possibly had a seizure this past Monday (April 2nd, 2007). A complete history is on file at the Diagnostic Center for Population and Animal Health.

Gross Description

This 39.7 kg neutered male white German Shepherd dog was in adequate nutrition and hydration status and was freshly preserved. The skin of the left and right lower lip fold were hyperemic and mildly alopecic. These lesions were 1.5 - 2 cm x 4.5 - 5 cm in size. The lungs were diffusely mottled light red to pink. The lungs contained numerous gritty, cream colored, pinpoint to 0.1 cm diameter lesions both on the pleural surface and throughout the pulmonary parenchyma. The left limb of the pancreas was nearly diffusely hyperemic with numerous petechia and ecchymoses scattered throughout the parenchyma. There were 5-10 light brown to golden plaques on the capsular surface of the spleen (hemosiderotic plaques) that did not extend into the splenic parenchyma. There was mild cartilage changes of the femoral heads, bilaterally. There was severe degenerative joint disease of the elbows and stifles, bilaterally. These lesions were characterized by cartilage remodeling and osteophytes, which were particularly evident within the elbow joints. The right elbow joint had 2-4 osteophytes, and the let elbow joint had > 5 osteophytes, several of which were floating free within the joint. There was bridging spondylosis of nearly all thoracic vertebrae, excluding the T1-T2 joint. There was bridging spondylosis of the lumbar vertebrae at L1-L2, L2-L3 and L3-L4. There was chronic disc extrusion within of the intervertebral discs of L1-L2, L2-L3 and L3-L4, with increasing severity from cranial to caudal. There was moderate compression of the spinal cord at L2-L3 and marked compression at L3-L4.

1. Vertebrae: Multifocal bridging spondylosis
2. Intervertebral Discs: Multifocal chronic intervertebral disc disease with moderate to marked spinal cord compression
3. Stifles, elbows: Severe degenerative joint disease, bilaterally

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4. Femoral head: Mild degenerative joint disease, bilaterally
5. Spleen: Multifocal hemosiderotic plaques
6. Lungs: Multifocal disseminated pulmonary mineralization

Gross Diagnosis(es)

Multifocal bridging spondylosis and intervertebral disc disease with spinal cord compression

COMMENT:
There were severe changes seen within the lumbar intervertebral spaces with associated compression of the spinal cord, which provides an explanation for the hind end neurologic deficits seen in this dog. There were also severe changes seen within the elbows and stifles, bilaterally, though the changes seen within the hip joints were very mild. The lesions seen within the spleen and lung are common changes sen in aged canines. Representative sections of numerous tissues and organs, including the spinal cord, were taken and submitted for microscopic evaluation. Results of this additional analysis will be included in the final report for this case.

Jessica S. Hoane, DVM

Matti Kiupel, DVM, PhD, DACVP

(Electronically signed by) MK

Verified: 04.06.2007 20:05

MK /JSH

Necropsy Final Report

Accession Number:	Received Date/Time:	Verified Date/Time:	Pathologist:
NC-07-0000541	04/05/2007 12:02:00 PM	04/18/2007 05:27:27 PM	Kiupel, Matti

Microscopic Description

Sections of lung, liver, heart, kidney, spleen, adrenal gland, right and left thyroid and parathyroid glands, right and left eyes, pancreas, stomach, duodenum, ileum, colon, skin, and numerous sections of brain and spinal cord were examined microscopically. The vasculature of the lung was mildly distended with blood. The hepatic sinusoids were mildly distended with blood. Occasional muscular arteries within the heart had moderate diffuse hypertrophy of the smooth muscle (tunica media) as well as a moderate to marked accumulation of amorphous light basophilic material expanding the tunica intima resulting in moderate to marked diminution of the vessel lumens. Within the kidneys, there was mild multifocal segmental thickening of the parietal layer of Bowman's capsule and mild multifocal glomerular atrophy. There was mild hyperplasia of the adrenal cortex, characterized by multifocal clusters of fully-differentiated adrenal cortical cells within the adrenal capsule. Skin taken from the lower lip fold was characterized by a focally extensive moderate to severe superficial perivascular to blending dermal infiltrate of predominantly plasma cells. The epidermis was moderately hyperplastic and there was focal serocellular crust formation on the surface. Within scattered neurons throughout the

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central nervous system, there was mild to moderate neuronal intracytoplasmic accumulation of a finely granular pale yellow material (lipofuscin). There were mild degenerative changes within the white matter of the spinal cord, including occasional dilated myelin sheaths rarely containing macrophages (digestion chambers).

Morphologic Diagnosis(es)

1.) Lung: Mild diffuse pulmonary congestion
2.) Liver: Mild diffuse hepatic congestion
3.) Heart: Moderate to severe multifocal arteriosclerosis
4.) Kidneys: Mild glomerulopathy
5.) Haired Skin: Focally extensive moderate severe plasmacytic dermatitis
6.) Brain, spinal cord: Mild to moderate neuronal lipofuscinosis
7.) Spinal cord: Mild multifocal myelin degeneration

Final Diagnosis(es)

1. Vertebrae: Multifocal bridging spondylosis
2. Intervertebral Discs: Multifocal chronic intervertebral disc disease with moderate to marked spinal cord compression
3. Stifles, elbows: Severe degenerative joint disease, bilaterally
4. Femoral head: Mild degenerative joint disease, bilaterally

COMMENT:
The changes seen microscopically were relatively mild. The congestion within the liver and lung were consistent with barbiturate euthanasia. Surprisingly, there was no evidence within the lung sections examined of the mineralization appreciated grossly. The changes within some vessels of the heart were not causing any significant alterations to the heart, though over time, the diminution of the vascular lumens may have resulted in compromise of oxygen supply to the cardiac musculature. The changes within the kidney are not unexpected for an aged canine, and do not represent any specific disease process. The skin lesions most likely represent a chronic lip fold dermatitis. An autoimmune or immune-mediated pattern was not appreciated within the sections examined. Also, lipofuscin accumulation within neurons is not uncommon in older animals and is due to accumulation of non degradable cellular components over the life of the neuron. The changes within the spinal cord were mild and were not in any specific region. The lesions also did not represent the typical Wallerian degeneration expected for a chronic compressive spinal cord lesion. The site of compression in the lumbar spinal cord was also not appreciated histologically, though microscopic analysis of numerous additional sections of the lumbar spinal cord is in progress. Any significant additional findings will be forwarded as a report addendum when available.

Jessica S. Hoane, DVM

Matti Kiupel, DVM, PhD, DACVP

(Electronically signed by) MK

Verified: 04.18.2007 17:27

MK /JSH