

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

1-800-605-8787
612-625-8787
Fax: 612-624-8707
e-mail: vdl@umn.edu
www.vdl.umn.edu

Accession Number: D05-061536

Owner: HUSTON, JUDY
HEALTH AND GENETICS CHAIR
AMERICA WHITE SHEPHERD
ASSOCIATION
PO BOX 2068
HOWELL, MI 48844

Veterinarian:
Dr. D. A. Spong
Hopkins Pet Hospital
8870 Excelsior Blvd
Hopkins, MN 55343

Site:
Received: 11/29/2005
Reference:
Species: Canine "FRIEDA"
Breed: White German Shepherd Dog
Age: 11 years and 11 months
Sex: Female
Weight: 27 kg (per submitter)

History: 18 months ago spondylosis. Ambulating slow, but no ataxia. Long history of constipation, resulting in need for regular treatment with enemas and manual evacuation of feces. 1 month ago anorexia, weight loss, severe constipation. Euthanized on 11/29/05.

Necropsy: An adult, female, White German Shepherd dog in excellent post mortem condition is necropsied on 11/29/05. The body condition is moderate with reduced musculing, especially affecting hind limbs and lumbosacral region. Adipose stores are adequate.

Integument: The subcutis of the dorsolateral aspect of the right antebrachial region is expanded by partially coagulated blood. The subcutis in the left dorsal metatarsal region has a circumscribed, flattened ovoid, approximately 3 x 2 x 1 cm, firm elastic, dark red mass. Cut surfaces are spongy, dark red and release blood.

Alimentary tract: The colon and ileum are greatly distended (up to 8 cm diameter) by semiliquid, foamy, pale gray, malodorous feces. The rectum and distal portion of the colon are occluded by an approximately 15 x 6 x 6 cm, 500 g firm aggregate of inspissated feces. The contents of the rectum and colon have a total mass of 1.9 kg. Stomach, duodenum and jejunum are virtually empty.

Adrenal glands: The left adrenal gland is slightly enlarged and has multiple nodular protrusions, up to 2 x 2 x 2 mm beyond the capsule.

Uterus: The serosa of both horns is disrupted by several translucent cysts of 1 to 3 mm diameter that are filled with colorless, aqueous liquid.

Spine: Intervertebral disks are collapsed or lost and replaced by yellow gray, firm tissue at intervertebral spaces T4/T5, T5/T6, T13/L1. Intervertebral disks mildly protrude into the vertebral canal at T2/T3, L2/L3, L4/L5, L5/L6. There is ventral bridging of vertebra by smooth bony proliferations at T4/T5 (mild), T5/T6 (marked), T6/T7, T7/T8, T8/T9, T9/T10, T10/T11, T13/L1, L1/L2 (marked), L2/L3 (marked), L5/L6 (mild). The epiphyses of T5 and T6 adjoining the collapsed intervertebral space T5/T6 are eroded.

No significant gross lesions are detected in brain, spinal cord, pituitary gland, oral cavity, pharynx, larynx, thyroid gland, trachea, lungs, heart, spleen, liver, right adrenal gland, kidneys, urinary bladder (approximately 20 ml clear urine), ovaries or bone marrow

Histopathology: Brain: There is diffuse, mild to moderate polymicrocavitation of the white matter, particularly evident in corpus callosum and corona radiata. Occasional venules in the medulla oblongata have thin perivascular rims of lymphocytes. Large perikarya throughout contain scant to moderate amounts of granular, golden brown pigment (lipofuscin).

Spinal cord: There is diffuse, moderate to marked intraneuronal lipofuscin accumulation. In a section of lumbar intumescence, numerous Lafora bodies are scattered throughout the gray matter. Rare Lafora bodies occur in other locations, both within gray and white matter. Rare, disseminated myelin sheaths are distended. There is diffuse, mild polymicrocavitation, mainly affecting the deep white matter at the junction between gray and white.

Parathyroid glands: Glands are slightly diffusely enlarged (up to 5 x 2 mm) by hypertrophy and hyperplasia of chief cells.

Heart: Intramural arteries of the left ventricular wall have circumferential, mild to marked medial expansion and hyalinization.

Liver: Hepatocytes are diffusely small and hepatocellular cords narrow. Hepatocytes of zones III and II are laden with granular, yellow brown pigment (lipofuscin). Fairly numerous Ito cells are disseminated throughout and occasionally aggregate together with pigment laden histiocytes to small clusters.

Duodenum: A section close to the pylorus has focal ulceration of mucosa and replacement by mature granulation tissue admixed with numerous plasma cells and lymphocytes.

Colon: In a section representing a greatly distended portion, there is segmental collapse of crypts, associated with loss of crypt epithelium and replacement by small amounts of fibrous connective tissue.

Uterus: In sections representing the grossly noted serosal cysts, these structures are mainly located within or near the mesometrium, lined by a single layer of flattened cuboidal epithelium and supported by a band of smooth musculature.

No significant microscopic lesions are seen in sections of pituitary gland, thyroid gland, lungs, mesenteric lymph node or kidneys.

Diagnosis: Gross 1. Fecal impaction, severe, rectum with megacolon and megaileum, chronic, severe 2. Degeneration, necrosis and loss of multiple intervertebral disks with spondylosis, thoracic and lumbar spine and osteolysis, locally extensive T5/T6 3. Muscular atrophy, moderate (lumbar region and hind limbs) 4. Nodular cortical hyperplasia, left adrenal gland 5. Multiple serosal cysts, uterus 6. Cutaneous cavernous hemangioma, haired skin (left metatarsal region) 7. Subcutaneous hematoma (right antebrachial region)

Microscopic 1. Duodenal ulcer, focal, chronic 2. Fibrosis, locally extensive, mild, lamina propria, colon 3. Serosal and myometrial lymphangiectasia, uterus

Comment: Findings in the intestinal tract are consistent with the history of chronic constipation. A specific cause is not evident. Myelopathy resulting from compression of the spinal cord associated with degeneration of intervertebral disks and related lesions may have contributed to rectal dysfunction and loss of normal defecation; however, absence of ataxia and distension of the urinary bladder would argue against myelopathy as the cause of constipation. Incidental findings include cortical adrenal hyperplasia, serosal uterine cysts and a cutaneous hemangioma. The subcutaneous hematoma in the right antebrachial region is attributed to venipuncture. Microscopically, most tissue changes are considered age-related and incidental. A specific cause for constipation and megacolon is not evident; in particular, there is no evidence for an underlying nervous lesion. Small subserosal uterine cysts are interpreted as distended lymphatics; however, precise identification of the lining cells (e.g. by ultrastructure) would be required for a definitive diagnosis.

Work pending: None

Patrick Caplazi, DVM, PhD, Diplomate ACVP

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Fax (952) 935-1823 Ph (952) 935-5566

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