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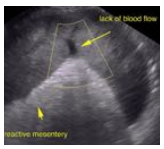
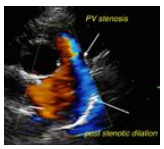
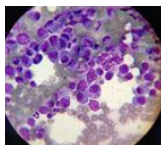
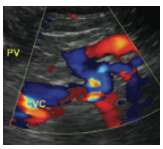

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1-800-838-4268 info@sonopath.com

PATIENT
Murphy Kinnison

SPECIES
Canine

BREED
Havanese Mix

SEX
Neutered male

AGE
13 years

WEIGHT
8 kg

INTERPRETED BY
Eric Lindquist, DMV DABVP, Cert. IVUSS

IMAGING PERFORMED BY
Dr. Biederbeck

HOSPITAL NAME
Lomsnes VH

REFERRING VET
Dr. Biederbeck

INVOICE
32409

DATE
8/18/22

PRESENTING CLINICAL SIGNS

History: Lethargy, poor appetite for a few days. Lost 1 kg since Jan
Abnormal PE/Chem/CBC/UA Results: Lethargic, slightly wobbly when we took outside here. Blood: ALKP 9954 U/L (23-212), MCV 58.4 fL (61.6-73.5), MCH 20.6pg (21.2-25.9), RDW 22.9% (13.6-21.7), EOS 0.01K/uL (0.06-1.23), PLT 719K/uL (148-484), PDW 8.7fL (9.1-19.4), PCT 0.70% (0.14-0.46), GLU 190mg/dL (70-143), SDMA 42ug/dL (0-14), CREA 2.0mg/dL (0.5-1.8), BUN 96mg/dL (7-27), PHOS 8.4mg/dL (2.5-6.8), ALT 564U/L (10-125), GGT 65U/L (0-11), CHOL 440mg/dL (110-320), Na 143mmol/L (144-160), Cl 97mmol/L (109-122), TT4 0.8ug/dL (1.0-4.0) Urine: Free catch, straw, clear, SG 1.011. pH 6.0, PRO 30mg/dL, BLD 250Ery/uL

ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN

Urinary System

The **urinary bladder**, trigone, and pelvic urethra presented normal thicknesses and normal tone. The ureters were not visible which is normal. No uroliths or sediment were visualized and anechoic urine was present. No evidence of inflammatory or neoplastic changes was noted. Ureteral papillae were normal.

The **kidneys** presented a relatively uniform cortical hyperechogenicity when compared to the renal medulla, spleen and liver. No overt masses were noted. Corticomedullary definition was nebulous and the ratio favored the cortex slightly. The ureters were not visible and assumed to be normal. These changes are most consistent with chronic interstitial nephritis yet infiltrative disease could not be entirely ruled out without biopsy though neoplasia is not suspected. Cortical cysts and disrupted architecture was noted in both kidneys. Both kidneys measured 4.0 cm with similar end stage changes.

Adrenal Glands

The left **adrenal gland** appeared slightly enlarged and swollen. No evidence of focal capsular expansion or invasion into the phrenic veins was noted. No overt suspicion of neoplasia was noted. The left adrenal gland measured 0.7 cm. The right adrenal gland appeared heterogenous and was visualized obliquely.

Spleen

The **spleen** was normal size and relatively normal contour with multifocal hyperechoic areas of mineralization. This is a benign change; however, can be related to Cushing's disease or other endocrinopathies.

Liver

The **liver** revealed multi-focal, hypoechoic nodular changes with increased portal markings. The nodules were mildly disruptive with swollen, irregular hepatic contour. The gallbladder was over distended and rounded with striating bile. This is consistent with mucocele formation.

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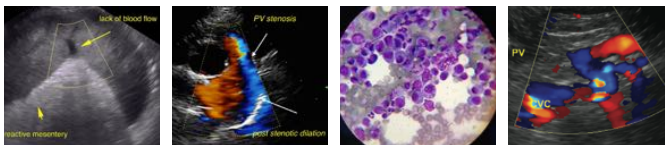

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Gastrointestinal

The **gastrointestinal tract** was deviated caudally. The stomach and intestines were free of stasis, of normal wall thickness, acceptable curvilinear mural detail, and peristaltic activity. Small and large intestine demonstrated normal luminal chyme and stool consistency respectively. No obstructive or overt infiltrative disease was noted. No associated abnormal lymphatic activity was noted.

Pancreas

The base and limbs of the **pancreas** were observed to be largely isoechoic to surrounding omental fat. Some parenchymal remodeling, however, with mild deviation from curvilinear normalcy was observed. Pancreatic duct and capsular irregularities were present consistent with age related changes. If pain upon imaging (+ Murphy sign) was present or if the patient is focally painful in subxiphoid palpation then low-grade smoldering chronic pancreatitis should be suspected.

ULTRASONOGRAPHIC FINDINGS

Subjectively end stage interstitial nephrosis with cortical cysts.

Pronounced nodular hyperplasia, vacuolar hepatopathy liver pattern with gallbladder mucocele.

Enlarged left adrenal gland.

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

I am most concerned about the kidneys as they subjectively appear to be end stage especially given the azotemia and isosthenuria. 72-hour IV fluid protocol, blood pressure measurements and urine culture could be considered, yet may be negative. If azotemia is able to be stabilized then cholecystectomy and liver biopsy can be considered. However, I am most concerned about the ability of the kidneys to rebound in the current chronic degenerative state.

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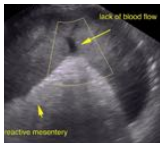

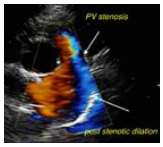

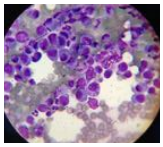
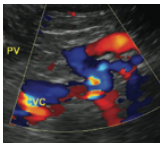

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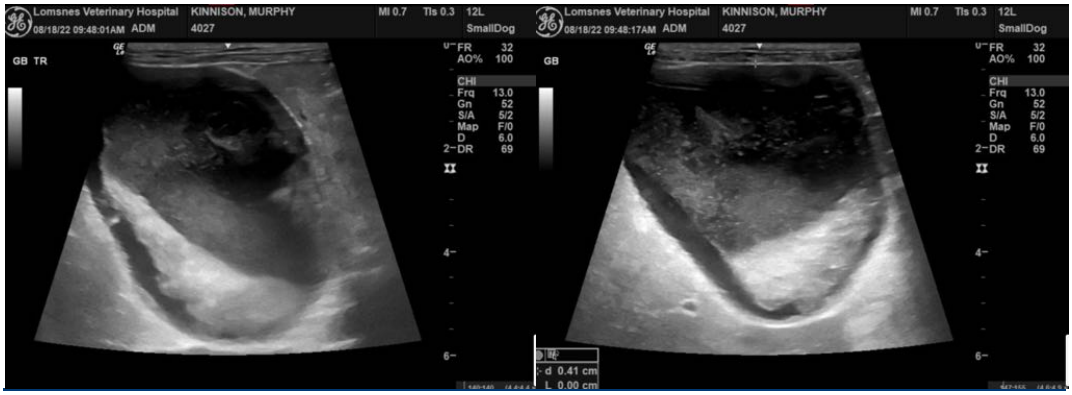

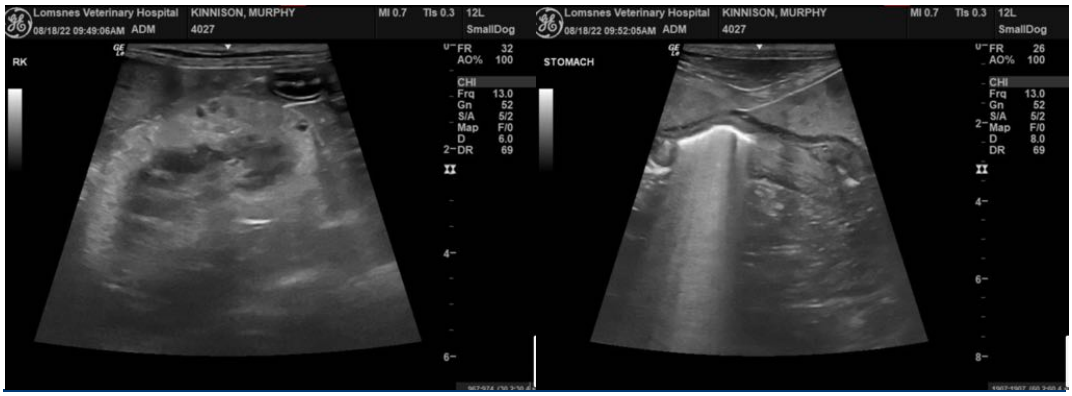

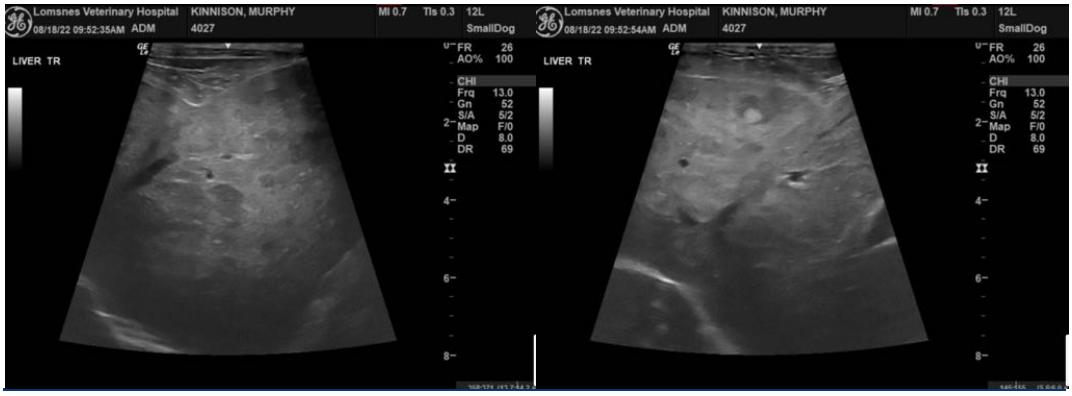

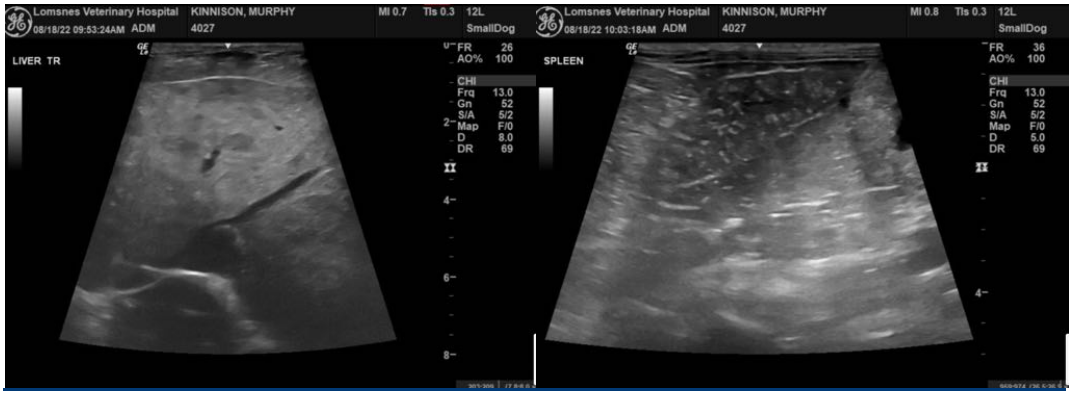

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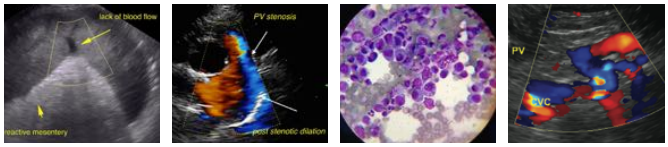

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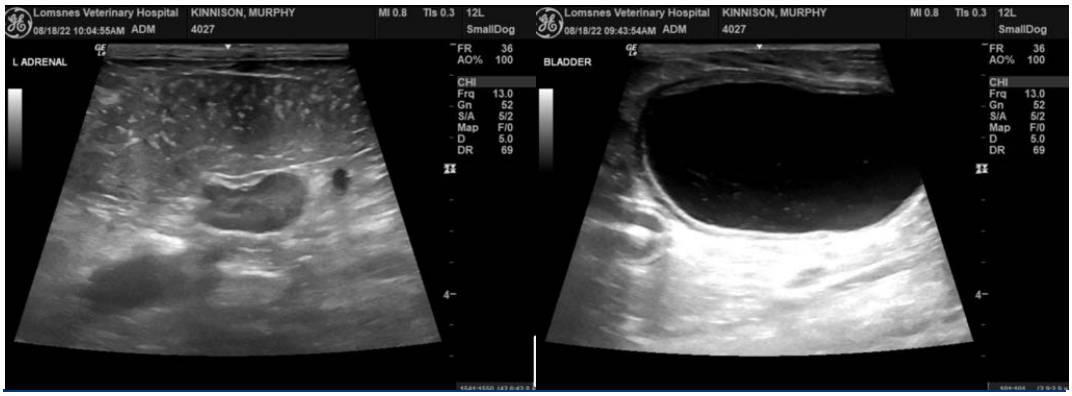

The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

Thank you for this referral. If the clinical or image interpretation does not parallel your findings or if I can be of any further assistance please contact me.

Eric Lindquist, DMV, DABVP, Cert. IVUSS, CEO of SonoPath.com
info@SonoPath.com