



**PATIENT PRESENTING CLINICAL SIGNS**

**Lily Calkins** Lethargy lately, decreased app for about 2 weeks and vomiting after eating Is on thyroid pills for hypothyroidism (controlled as of last year) and is on proin for urinary incontinence.  
**Abnormal PE/Chem/CBC/UA Results:** PE- weight loss, all lymph nodes palpable (not huge but submandibular, prescapular, and popliteal all prominent) HCT 28%, non regenerative, Creat 2.2, BUN 46 , awaiting first morning urine sample lymph node aspirate: inconclusive- atypical hyperplasia or emerging lymphoma, increased number of mast cells

**SPECIES**

Canine

**BREED ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN**

Tibetan Terrier

**Urinary System**

**SEX**

Female

The urinary bladder is adequately distended with anechoic contents. The wall is mildly irregular. No abnormalities are noted with the trigone. The proximal urethra is not visualized due to interference from the pelvis. There is no evidence of sediment, cystoliths, polyps or a mass.

**AGE**

10 years

**Kidneys**

**WEIGHT**

17.9 lbs

The **left** kidney measures 3.91 cm. The capsule is smooth. The cortex is mildly hyperechoic and a mild loss of the normal definition of the cortico-medullary junction is present. Mineralizations of the diverticulae and pelvis are present, without evidence of nephroliths or pyelectasia. An accumulation of intrapelvic fat is noted. The surrounding mesentery is not hyperechoic.

The **right** kidney measures 3.76 cm. Findings are similar to the left kidney.

**INTERPRETED BY**

Lisa Carioto, DVM, DVSc, Diplomate ACVIM

**Aortic bifurcation/trifurcation**

No abnormalities observed.

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Dr. Scott

**Adrenal Glands**

**HOSPITAL NAME**

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The **left** adrenal gland is not observed due to the large amount of gas in the gastrointestinal tract and the enlarged lymph nodes in the surrounding area, No abnormalities are noted with the gland's overall architecture, echogenicity or echotexture. The phrenico-abdominal vein and surrounding vasculature and mesentery are unremarkable.

The **right** adrenal gland measures 0.52 cm in diameter. No abnormalities are noted with the gland's overall architecture, echogenicity or echotexture. The phrenico-abdominal vein and surrounding vasculature and mesentery are unremarkable.

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**Spleen**

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A mottled echotexture is present throughout. The capsule is rounded at the head and appears "swollen". Neoplasia, such as, lymphoma, mast cell, other round cell tumour, histiocytic sarcoma, etc., are possible differential diagnoses for the splenic changes observed. Possible target lesions are observed at the head; it measures 4.2 mm in diameter x 4.3 mm in length. Other hypoechoic lesions are also observed. A hypoechoic, well-circumscribed mass, that appears to alter the integrity of the capsule

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**PATIENT**

Lily Calkins

is also noted. Extramedullary hematopoiesis, hypersplenism and reactive hyperplasia are less likely, but remain possible. A fine needle aspirate is required to obtain a definitive diagnosis.

**SPECIES**

Canine

**Liver**

Hepatomegaly is suspected. The liver's borders are smooth, but rounded. A diffuse, mildly coarse or granular echotexture is observed. The liver is mildly to moderately hyperechoic, i.e., it is mildly hyperechoic to the spleen. No obvious abnormalities are noted with the hepatic vessels.

**BREED**

Tibetan Terrier

The gallbladder wall is within normal limits in thickness and echogenicity. A trivial amount of echogenic material is present within the GB, some of which appears inspissated and nodular. The portions of the cystic and/or common bile ducts observed are not dilated or tortuous, i.e. there are no signs of an obstruction.

**SEX**

Female

**Gastrointestinal**

**AGE**

10 years

A large amount of gas is present within the lumen of the stomach. The gastric wall is within normal limits in thickness and the wall layers are well defined. No obvious abnormalities are observed with its peristalsis.

**WEIGHT**

17.9 lbs

The small intestinal wall thickness, however, is within normal limits and the definition of the wall layers is preserved. The duodenum is filled with gas, ingesta and fluid. Mild, yet diffuse, fogging of the mucosa of the duodenum and small intestines is noted. Abnormally dilated loops of bowel are not observed.

The colonic wall is not thickened and mural detail is considered normal.

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DVSc, Diplomate  
ACVIM

**Pancreas**

An in-depth evaluation of the pancreas is not possible due to interference from the large amount of gas in the surrounding gastrointestinal tract.

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**Other**

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**Lymph nodes (LNs)**

Lymphadenomegaly is present. Multiple lymph nodes are enlarged and mildly hypoechoic caudo-medially to the left kidney. Some are very round and smooth, while others are slightly irregular.

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0.84 cm in diameter x 0.86 cm in length

1.5 cm in diameter x 1.4 cm in length

Other LNs are mildly enlarged medial to the stomach.

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**Abdominal effusion** is not visualized.

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**ULTRASONOGRAPHIC FINDINGS**

- The splenic changes are highly suggestive of neoplasia, such as, lymphoma, mast cell tumour, histiocytic sarcoma, etc. Severe hypersplenism, extramedullary hematopoiesis and reactive hyperplasia are less likely, but remain possible. A fine needle aspirate is required to obtain a definitive diagnosis.
- Presence of lymphadenomegaly. Lymphoma, mast cell, other round cell tumour, such as histiocytic sarcoma, are possible differential diagnoses.
- The hepatomegaly and diffuse hyperechogenicity of the liver, and mildly coarse or granular echotexture may be due to vacuolar and reactive hepatopathies, respectively. A vacuolar hepatopathy may occur due to stress (chronic illness), such as chronic, intermittent vomiting. Other differential diagnoses for a diffusely hyperechoic liver include, cholestasis and cholangitis/cholangiohepatitis. Cholangitis/cholangiohepatitis and hepatitis are considered unlikely. Infiltration of the liver with neoplastic cells cannot be excluded.
- Renal changes are suggestive of age related degeneration, however, glomerulonephritis and pyelonephritis may be contributing to the changes observed.
- A urinary tract infection may be present based on the mildly irregular mucosa of the bladder.

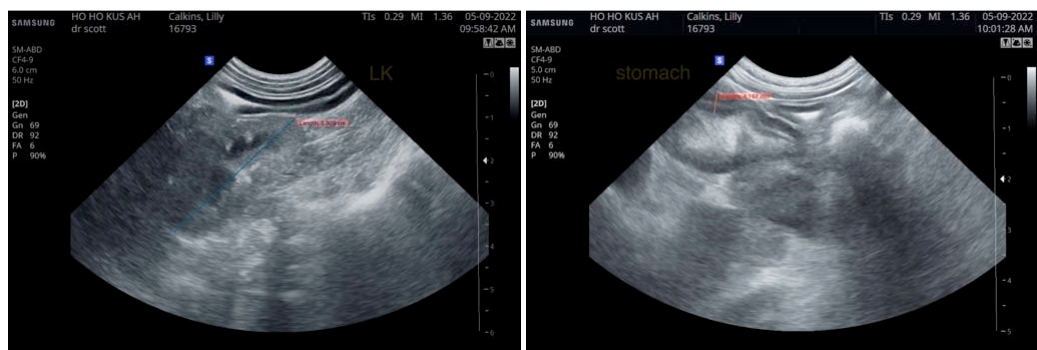
**INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS**

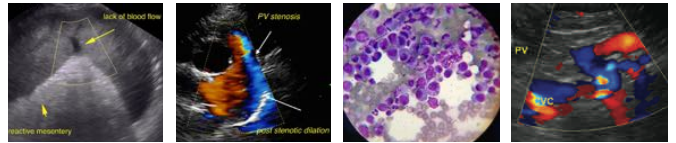
Fine needle aspirates of the spleen, lymph nodes and liver are recommended.

Performing a coagulation profile prior to the final aspirates would be prudent but is not a necessity. Administration of vitamin K (0.5 mg/kg SQ q8-12h for 1-3 doses) is suggested even if the results of the PT/PTT are within normal limits.

Mastocytoma (diffuse mast cell tumours) is less likely compared to lymphoma, however, it would be prudent to administer cetirizine or loratadine orally 24 hours prior to the procedure to decrease the risk of degranulation. Diphenhydramine may be administered instead (2 mg/kg intramuscularly or subcutaneously approximately 20 minutes prior to the procedure), however, it is not considered as effective.

A urinalysis and urine culture and sensitivity are recommended to exclude a urinary tract infection and pyelonephritis.





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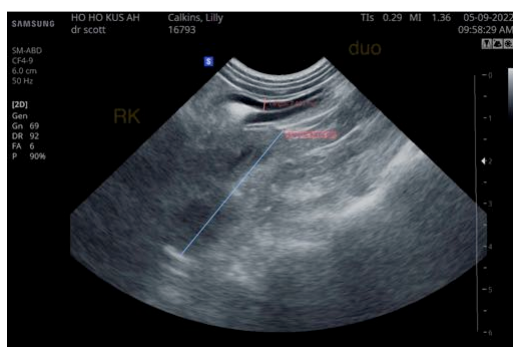
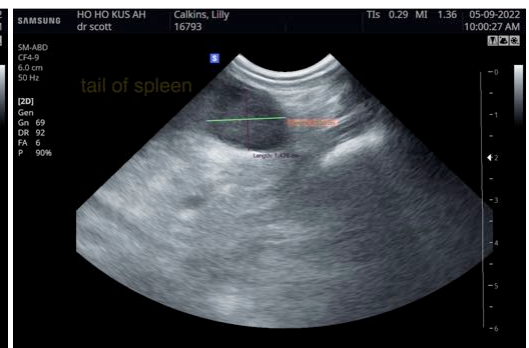
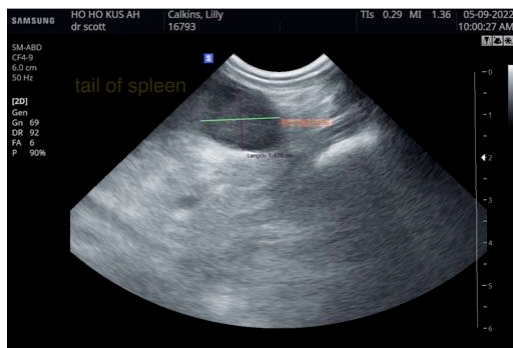
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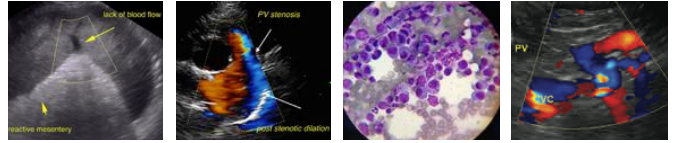
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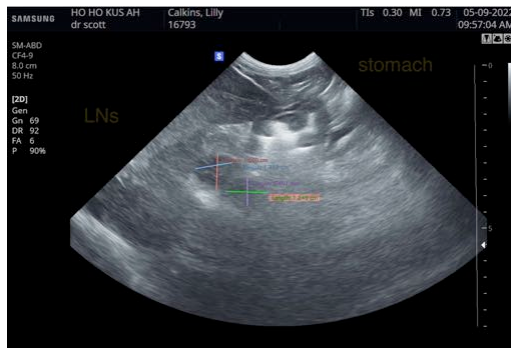
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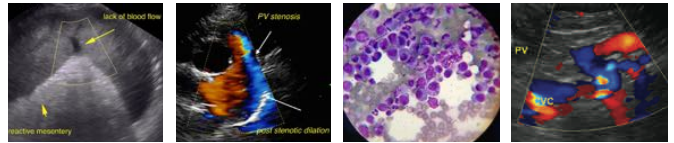
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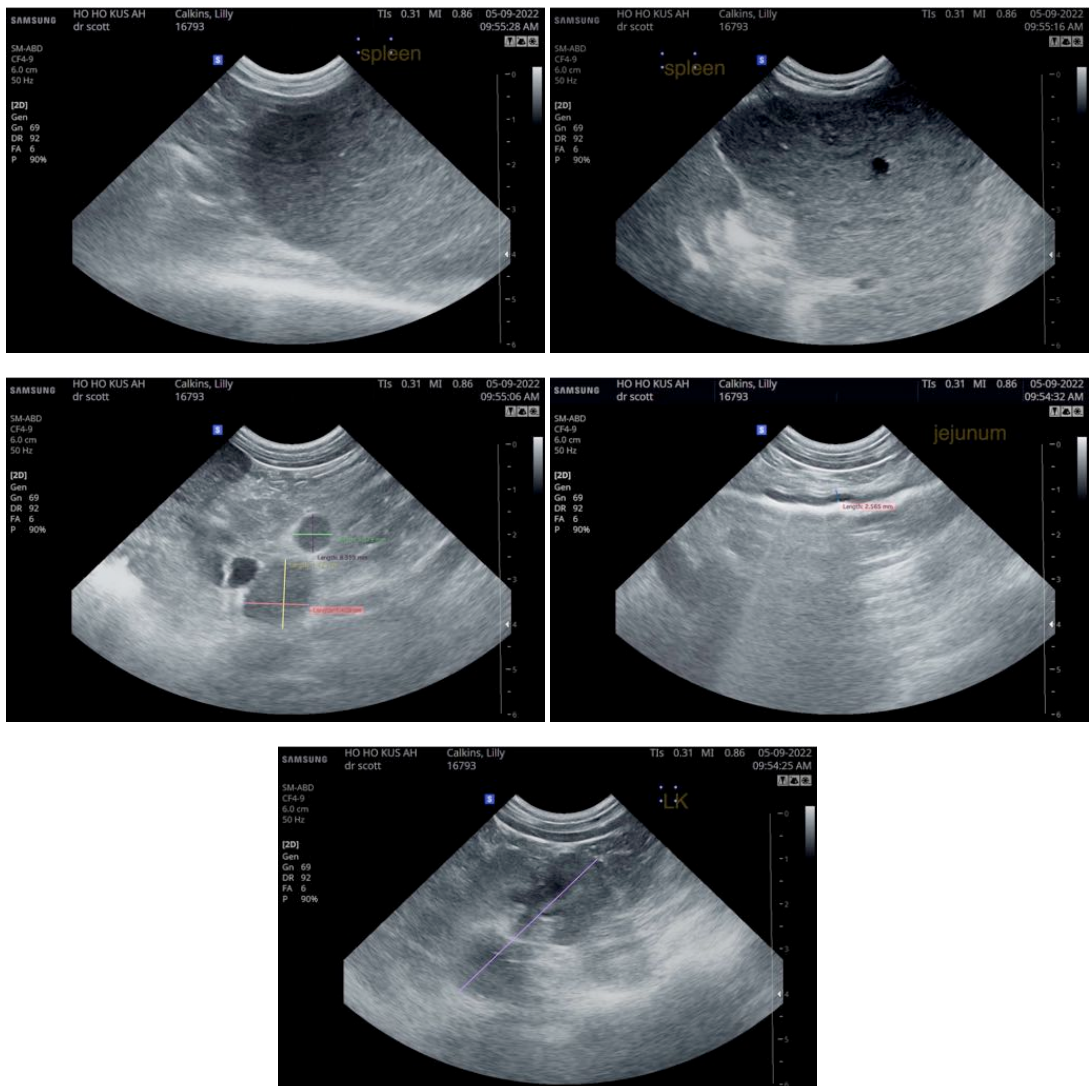
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The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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.

Lisa Carioto, DVM, DVSc, Diplomate ACVIM

[Lisa.Carioto@sonopath.com](mailto:Lisa.Carioto@sonopath.com)