



**PATIENT**

Lucky Sternberg

**SPECIES**

Canine

**BREED**

Shih Tzu

**SEX**

Neutered male

**AGE**

14 years

**WEIGHT**

26.5 lbs

**INTERPRETED BY**

Dr Brittany Sinclair,  
BVSc(hons), DACVECC

**IMAGING PERFORMED BY**

Dr. Smatt

**HOSPITAL NAME**

The Pets I Love

**REFERRING VET**

Dr. Smatt

**INVOICE**

43252

**DATE**

3/13/23

**PRESENTING CLINICAL SIGNS**

History: Patient was here for routine exam. Abdomen has pot belly appearance. Owner did not drinking a lot of water.

Abnormal PE/Chem/CBC/UA Results: ALT (SGPT) 405 HIGH Alk Phosphatase 1,403 HIGH CALCIUM 11.7 HIGH Urine - 3+ proteinuria with 1.5 UPC

**ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN**

**Urinary System**

The urinary bladder, trigone, and visible pelvic urethra were of normal thickness. The ureters were not visible which is normal. There was normal wall layering with no masses, uroliths or abnormal thickening visualized. Urine was anechoic. No evidence of inflammatory or neoplastic changes were noted.

The kidneys were both normal size and structure, with smooth capsule and normal corticomedullary definition and ratio (cortex 1/3 of medulla). Medullary structure differed distinctly from that of the cortex. No evidence of pelvic dilation was present. The right kidney measured 6.7 cm. The left kidney measured 6.7 cm.

**Adrenal Glands**

Both adrenal glands were visualized and recognized. Both were enlarged and hypoechoic. Right adrenal caudal pole was best visualized allowing for measurement. The phrenic vasculature, glandular echogenicity and detail were unremarkable. The left adrenal gland measured 3.1 cm in length x 1.06 cm at the caudal pole and 0.81 cm at the cranial pole.

**Spleen**

The spleen was normal in size with a slightly mottled or coarse parenchyma and smooth capsule. Normal splenic vasculature with no signs of congestion or thrombosis.

**Liver**

The liver is subjectively mildly enlarged with slightly rounded borders. The parenchyma is slightly heterogenous with a coarse appearance. Vascular and biliary tracts are of normal volume with no evidence of congestion. No pathological hepatic lymphadenopathy observed. The gallbladder is markedly distended with partially striated organized hyperechoic layered material most consistent with gall bladder mucocele.

**Gastrointestinal**

The stomach contains minimal luminal contents. It measures at a normal thickness of with some variability due to the presence of rugal folds. The distinction of the gastric wall layers is adequate and there is no impression of reduced peristaltic activity. No masses or focal lesions were observed. The visualized areas of duodenum, jejunum and ileum have a relatively uniform diameter with minimal fluid distension. Wall thickness is normal. Bowel loops follow a curvilinear path with distinct wall layering maintaining the typical 1:3 muscularis:mucosa layer ratio. Visualized peristalsis appears appropriate.



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There were no focal lesions consistent with obstruction or a mass effect observed. The ileocecal junction was visualized and exhibited normal intact wall layering and is subjectively of normal thickness. Sections of colon are visualized with formed fecal material and gas shadowing distally. There is no observed focal or generalized colon wall thickening or loss of layering.

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**Pancreas**

The base and limbs of the pancreas were observed to be largely isoechoic to surrounding omental fat. Pancreatic duct and capsular contour and parenchyma were normal. No overt evidence of active inflammatory or neoplastic disease was noted.

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**Lymph Nodes**

Peri-pancreatic lymph nodes are enlarged, slightly rounded and hypoechoic.

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**Free Abdomen**

No masses or free fluid were noted.

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**ULTRASONOGRAPHIC FINDINGS**

1. Gall bladder mucocele
2. Hepatomegaly with coarse appearance
3. Normal pancreas
4. Prominent peripancreatic lymph node
5. Bilateral adrenomegaly
6. Mild splenic parenchymal changes with smooth capsule

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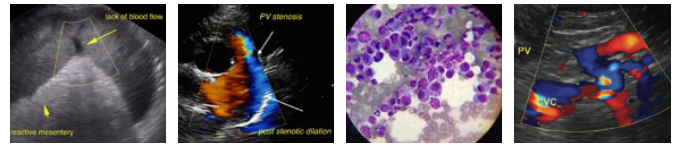
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**INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS**

Gall bladder changes are most concerning for a gall bladder mucocele. Recommended treatment is cholecystectomy. Liver biopsy should be obtained at the time of surgery to investigate for hepatic parenchymal disease. Medical therapy including liver supportive medications (SAM-E, milk thistle, Vitamin E, ursodiol) and GI support as needed. Empiric antibiotic therapy is not unreasonable and antibiotics that are effective against gram-negative, aerobic, enteric bacteria and excreted into the bile are recommended. Amoxicillin, amoxicillin-clavulanic acid, cephalosporins, and fluoroquinolones are suggested first choices. Metronidazole (7.5 mg/kg PO, IV q 12 hrs) may be added for extra anaerobe coverage. If medical therapy is elected, serial imaging and bloodwork monitoring are recommended. Peripancreatic lymphadenopathy with parenchymal changes and loss of normal length to width ratio is most concerning for infiltrative disease (lymphoma, MCT, other) and lymph node aspirate and cytology is recommended, though this location is challenging for percutaneous aspiration. There is only one node affected and this may also represent focal inflammation associated with visible cholangiohepatitis. If surgery is pursued this area should be explored and biopsy obtained if indicated. Less likely but possible causes include infectious lymphadenitis (bacterial, viral, protozoal or less likely fungal infection) or reactive lymphadenitis (parasitism, migrating foreign body). Lymph node culture could be considered. Serial monitoring with imaging if medical therapy is pursued is reasonable.



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Adrenomegaly is bilateral and may represent stressful illness or hormonal stimulation as is seen with pituitary dependent hyperadrenocorticism. If corresponding clinical signs are present, testing for hyperadrenocorticism should be considered (ACTH stimulation test vs LDDST).

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Splenic changes are a common benign age related change, but infiltrative disease (lymphoma, MCT, other) cannot be definitively ruled out. No significant disruption of architecture noted to suggest significant pathology. Fine needle aspirate could be considered to further characterize parenchymal changes if clinically indicated, especially if any weight loss is noted or for baseline cytological assessment.

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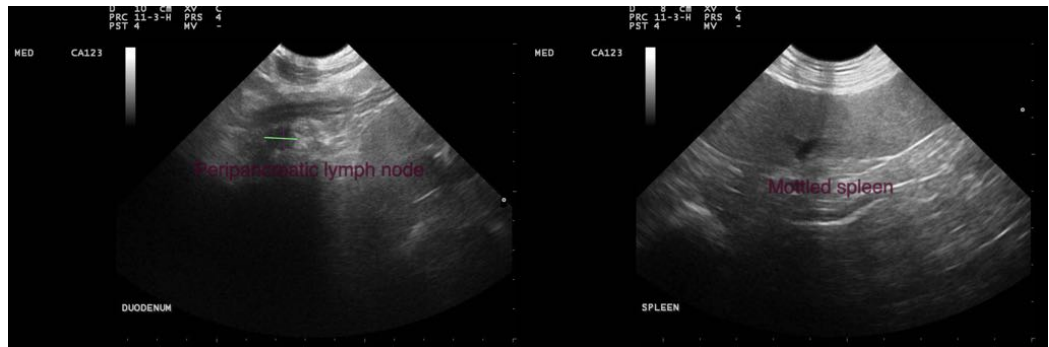
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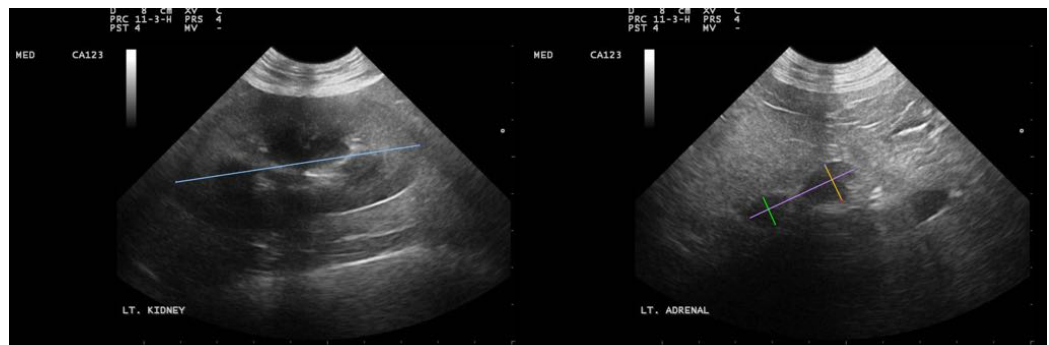
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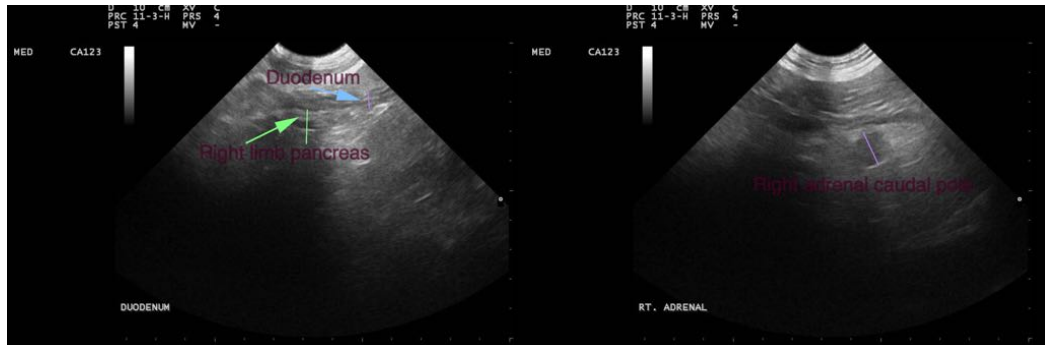
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The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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.

Dr Brittany Sinclair, BVSc(hons), DACVECC  
info@SonoPath.com