



**PATIENT**

Autumn Parker

**SPECIES**

Canine

**BREED**

Shih Tzu Mix

**SEX**

Female

**AGE**

7y

**WEIGHT**

16.6lbs

**INTERPRETED BY**

R. McKenzie Daniel,  
DVM, DABVP (Canine  
and Feline)

**IMAGING  
PERFORMED BY**

Arunachala Kutagulla

**HOSPITAL NAME**

434 Animal Hospital

**REFERRING VET**

Arunachala Kutagulla

**INVOICE**

10320

**DATE**

7/14/2023

**PRESENTING CLINICAL SIGNS**

The pet was presented for behavior change and being lethargic, owner complained sometimes the pet circles and wanders off. pet has hepatomegaly on radiographs. pet was sent home with liver supplement sAME and metronidazole.

Abnormal PE/Chem/CBC/UA Results: CBC- reticulocytosis, monocytosis, elevated liver values -ALT-592.ALKP -1721,GGT-68. normal UA.

**ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN**

**Urinary System**

The urinary bladder, trigone, cystourethral junction, and visible pelvic urethra to a depth of 3 cm exhibited normal thickness and tone. Anechoic urine was present in the lumen with no uroliths. Mild nondependent particulate sediment which may indicate mild cellular debris/protein crystalline debris mucus. The ureteral papillae were normal. The ureters were not visible which is normal. No evidence of inflammatory or neoplastic changes was noted.

No overt pathology in the area of the uterus or bilateral ovaries if clinically applicable.

The area of the aortic trifurcation was free of pathology.

Normal size and margination were present in the kidneys. A normal 1:3 cortex / medulla ratio and normal corticomedullary definition were maintained. The echogenicity of the cortex was similar to or slightly less than normal liver parenchyma while the medulla echogenicity was hypoechoic to the cortex with no evidence of pelvic dilation. The left kidney measured 4.4 cm in length. The right kidney measured 4.4 cm in length.

**Adrenal Glands**

The left adrenal gland was uniform in size and contour with a uniformly hypoechoic parenchyma. The left adrenal gland measured 0.62 cm in width at the caudal pole The right adrenal gland was not definitively visualized.

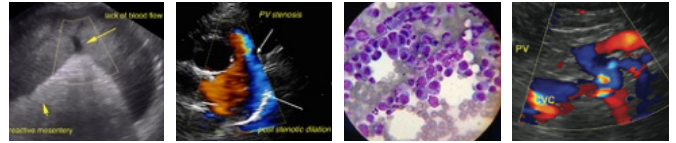
**Spleen**

The spleen exhibited a finely textured and homogenous parenchyma which was hyperechoic to the liver and renal cortical parenchyma. The capsule was smooth and regular without apparent expansion. The splenic vasculature at the hilus was normal in volume with no evidence of congestion or thrombosis. Acute to chronic inflammatory, neoplastic, or benign parenchyma changes were not noted.

**Liver/ Gallbladder**

The liver was subjectively moderately to markedly enlarged, exhibiting low bar swelling with asymmetrical hepatic capsule contour. Generalized non homogenous hepatic parenchyma with diffuse variably sized intraparenchymal nodules. Some of the nodules exhibited mild central hyper echogenicity with mild hypoechoic periphery consistent with target nodule criteria. Example of nodules 2.8 cm in diameter. The hepatic and portal vasculature were normal in appearance without signs of congestion. The gallbladder was non-distended in size with thin walls and primarily anechoic content with minor nonorganized gallbladder debris. The cystic and common bile ducts were normal.

**Gastrointestinal**



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The stomach presented intact wall layering with a normal wall layer ratio. The lumen of the stomach was empty with no signs of ileus, obstruction, or foreign material.

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The small intestine presented intact wall layering with 1:3 muscularis/mucosa ratio. The lumen of the small intestine was empty with no signs of ileus, obstruction, or foreign material.

Normal visible colon wall layers were present with apparent formed feces in lumen.

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Shih Tzu Mix

**Pancreas**

The parenchyma of the left limb, body, and right limb of the pancreas presented isoechoic to the adjacent omental fat. A normal curvilinear capsule contour of the pancreas was present. The visible pancreatic duct was normal. No signs of active inflammation or neoplastic disease were evident.

**SEX**

Female

**Free Abdomen**

**AGE**

7y

Mild volume perihepatic to peritoneal effusion was present.

No overtly visualized lymphadenopathy was present.

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16.6lbs

**ULTRASONOGRAPHIC FINDINGS**

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**Primary Findings**

- Moderate to markedly enlarged non homogenous to nodular liver.
- Mild volume perihepatic/peritoneal effusion.

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**INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS**

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Although sampling is required for further assessment the sonographic appearance of the liver consistent with infiltrative neoplastic criteria, benign etiology i.e., vacuolar hepatopathy, inflammatory hepatopathy, hyperplasia, hemopoiesis, hepatic fibrosis, or similar considered less likely. FNA cytology of the liver, assuming normal clotting status recommended for further assessment with potential for oncology consultation. Bile acid testing could be considered given neurological signs. No evidence of a portosystemic shunt.

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Discontinuation of Metronidazole suggested given hepatic presentation in conjunction with neurological signs. Unfavorable prognosis unfortunately indicated.

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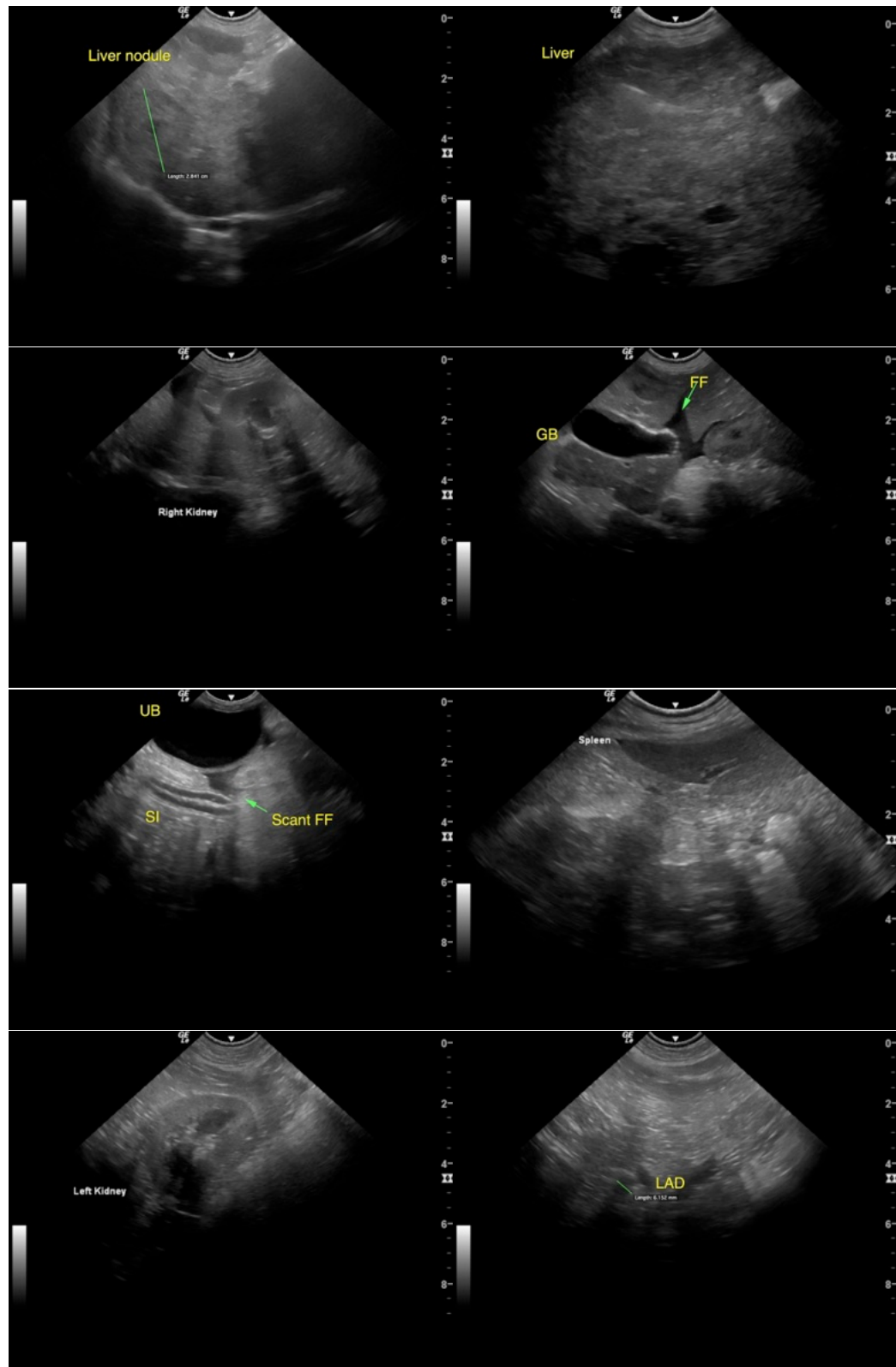
Arunachala Kutagulla

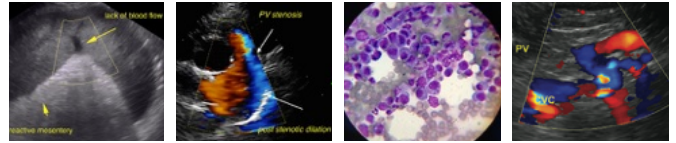
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veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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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.

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R. McKenzie Daniel, DVM, DABVP (Canine / Feline Practice)  
info@SonoPath.com

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