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**DATE PRESENTING CLINICAL SIGNS**

7/20/22 Presented for dental procedure recently. Pre-anesthetic labwork showed elevated liver values (ALP > 2000, ALT 583). Dental procedure was postponed. Bile acids pre 39.5 umol/L, post 40.5 umol/L

**PATIENT**

Milou Goldstein Current Medications: Optimune 0.2% - applied OS q 12 hours  
Simparica Trio 22-44# - once monthly. Was previously using Neopolydex drops - 1 drop OS q 12 hours for 6 weeks from early April until mid May. No other medications or supplements.

**SPECIES**

Canine Date of Previous IntraPet Ultrasound: No previous.  
Sedation: Not required to complete full diagnostic ultrasound.  
Stat Report: Not requested.

**BREED**

Shih Tzu X

**SEX**

Spayed Female

**AGE**

4/30/12

**WEIGHT**

24.2 Pounds

**INTERPRETED BY**

Beth Johnson, DVM  
DACVIM

**IMAGING PERFORMED BY**

Rachel Brillhart RDMS

**HOSPITAL NAME**

Stevenson Village Vet

**REFERRING VET**

Dr. Vinson

**INVOICE**

39702

**ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN**

**Urinary System**

The urinary bladder is moderately distended with anechoic contents. No masses, inflammatory changes, echogenic sediment or cystoliths are observed. The urinary bladder, trigone and visible pelvic urethra are normal in thickness with a smooth mucosal surface.

Kidneys are overall normal in size and shape with smooth peripheral margination. A normal 1:3 cortex to medulla ratio is maintained. The medulla and cortices are uniform in texture with some mild increased cortical echogenicity and mild loss of corticomedullary distinction, expected in this age patient. There is no evidence of pyelectasia, mineral or infarcts observed. The left kidney measures 5.07 cm. The right kidney measures 5.51 cm.

**Adrenal Glands**

The right adrenal gland is normal in size (1.7 cm long x 0.62 cm at the cranial pole and 0.61 cm at the caudal pole), shape and contour. Corticomedullary structure is unremarkable. Visible surrounding vasculature appears normal.

The left adrenal gland is normal in size (1.95 cm long x 0.62 cm at the cranial pole and 0.65 cm at the caudal pole), shape and contour. Corticomedullary structure is unremarkable. Visible surrounding vasculature appears normal.

**Spleen**

The spleen is subjectively normal in size with a normal smooth capsular contour. Parenchyma is appropriately finely textured and homogenous with normal echogenicity relative to surrounding tissue (hyperechoic to liver). No focal nodules or masses are observed. Splenic vasculature appears normal.

**Liver**

The liver is subjectively normal in size with normal smooth curvilinear peripheral contour. Parenchyma is appropriately hypoechoic to the spleen in echogenicity and appropriately mildly coarse and homogenous in echotexture. The left caudal liver contains an approximately 9.0 cm in diameter heterogeneous, primarily hypoechoic vascular mass. Visible vasculature and biliary tree appear normal without distension or congestion.

The gallbladder is non-distended in size. The wall is smooth without visible thickening. Luminal contents are primarily anechoic. There is no evidence of cystic or common bile duct dilation.

**Gastrointestinal**

The visible stomach wall is normal in thickness and layering. The lumen of the stomach is mildly distended with echogenic non-shadowing luminal contents and gas consistent with normal ingesta. There is no evidence of obstruction, foreign material or infiltrative disease. Pyloric outflow tract appears patent.

The visible small intestines are normal in wall thickness and layering. Small intestinal motility appears adequate (1-3 contractions per min). The lumen of the small intestine is mildly distended with echogenic non-shadowing luminal contents and gas consistent with normal ingesta. There is no evidence of obstruction, foreign material or infiltrative disease.

The visible colon is normal in wall thickness (< 0.2 cm) and layering. Contents are consistent with normal formed feces and gas.

### ***Pancreas***

The area of the pancreas contains irregular hyperechoic pancreatic remodeling.

### ***Free Abdomen***

There is no evidence of free peritoneal effusion noted in these images.

The medial iliac lymph nodes are prominent in size (0.57 cm thick) with swollen capsular contour. Normal elongated shape (length to width ratio) is maintained. There is no loss of parenchymal detail.

## **PRIMARY FINDINGS**

- **Left caudal heterogeneous liver mass** – primary differentials include primary hepatic neoplasia such as hepatocellular carcinoma versus sarcoma versus potentially infiltrative round cell neoplasia. Benign differentials such as marked nodular hyperplasia are possible, but considered less likely.

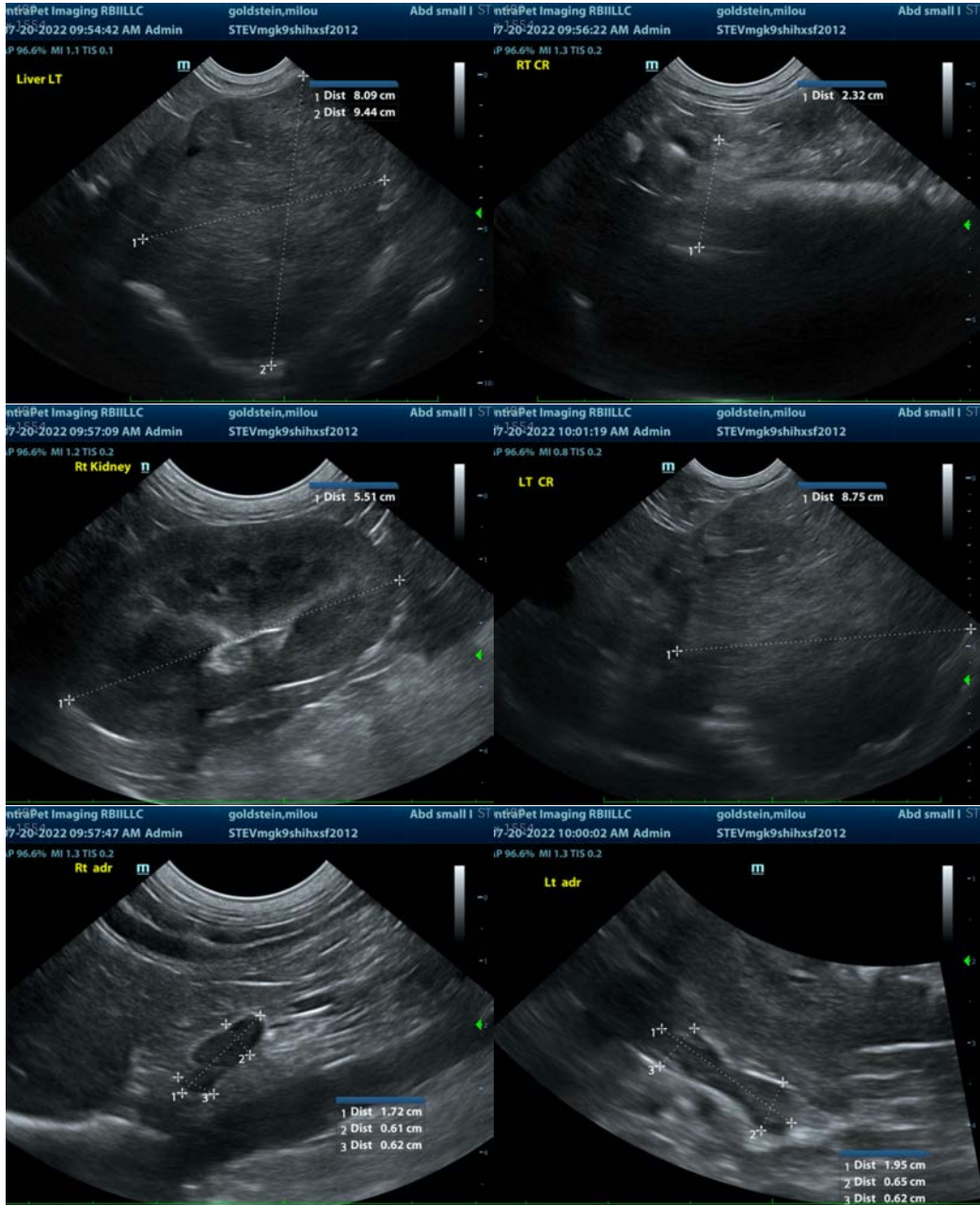
## **SECONDARY FINDINGS**

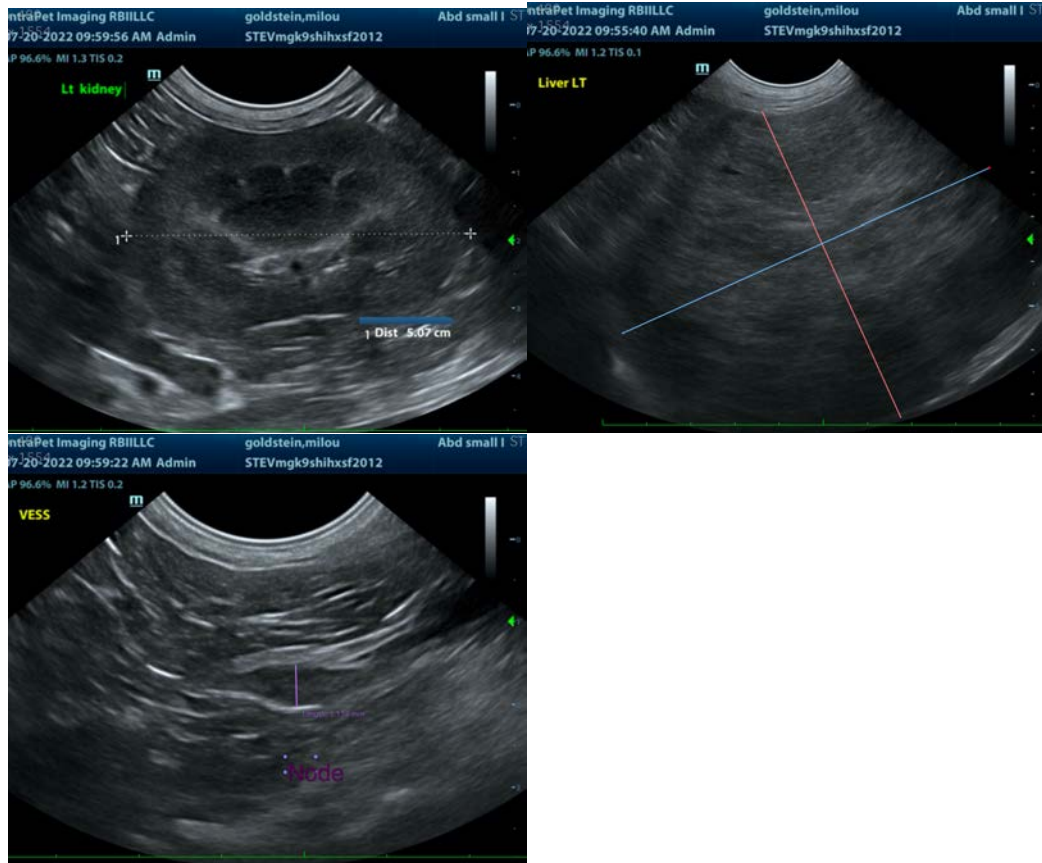
- **Hyperechoic pancreas** – This finding is suggestive of pancreatic fibrosis, possibly secondary to chronic pancreatitis. A TLI is recommended to rule out exocrine pancreatic insufficiency (EPI), especially if clinical signs (weight loss, diarrhea, etc.) are present.
- **Reactive medial iliac lymph nodes** – infiltrative neoplastic disease cannot be ruled out but is considered less likely.
- **Age related kidneys**

## **INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS**

Recommendations include:

- Three view thoracic radiographs are recommended for further assessment of cardio-pulmonary status as well as to further evaluate for any evidence of metastatic disease, if not recently evaluated.
- A fine needle aspirate of the liver mass is recommended if patient's coagulation status is appropriate, to rule out round cell neoplasia. However, given the future risk of hemorrhage, necrosis, torsion, etc., an exploratory laparotomy with excisional biopsy/liver lobectomy may be elected without pre-surgical fine needle aspirate necessary.
- The mass appears ultrasonographically to be excisable. However, a pre-surgical planning abdominal CT scan could be considered for a more definitive answer.





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.

**Beth Johnson, DVM, DACVIM**  
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