



PATIENT

Chewy Pattersen

SPECIES

Canine

BREED

Shih Tzu

SEX

Neutered Male

AGE

9 Years 6 Months

WEIGHT

7.3 kg

INTERPRETED BY

Kathleen Sennello DVM,
MS, Diplomate ACVIM
(Small Animal Internal
Medicine)

IMAGING PERFORMED BY

Dr. Jill Rankin

HOSPITAL NAME

Northwest Animal
Hospital

REFERRING VET

Dr. Bath

INVOICE

72147

DATE

11/26/25

PRESENTING CLINICAL SIGNS

The patient presents for investigation of elevated liver enzymes and bile acids while being otherwise clinically asymptomatic. The primary findings include elevated liver enzymes, specifically an ALT of 199, elevated cholesterol at 9.9, and elevated postprandial bile acids. A complete blood count (CBC) and T4 level were both within normal limits. To determine the underlying cause of these biochemical abnormalities, a sedated fine needle aspirate of the liver is planned. Clotting times had not yet been assessed at the time of this discussion.

ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN

Urinary System

The urinary bladder is moderately distended with anechoic urine. The Bladder wall, trigone, ureteral papillae and visible urethra (to a depth of 2cm) appear normal with no evidence of wall thickening, mucosal irregularities, masses or cystic calculi.

The prostate is normal in size (1.02 cm) and shape for this neutered male dog. The parenchyma is homogenous and the external margins are smooth. The prostatic urethra appears normal with no evidence of irregularity, invasion, mass effect or calculi.

The left kidney has a normal shape and size (4.15 cm). Overall echogenicity is slightly hyperechoic with mildly reduced corticomedullary distinction and a typical 1:3 cortex:medulla ratio. There is no evidence of focal perinephric inflammation or effusion. There is no evidence of pyelectasia, nephroliths, infarcts or hydroureter. Renal vasculature is normal.

The right kidney has a normal shape and size (3.87 cm). Overall echogenicity is slightly hyperechoic with mildly reduced corticomedullary distinction and a typical 1:3 cortex:medulla ratio. There is no evidence of focal perinephric inflammation or effusion. There is no evidence of pyelectasia, nephroliths, infarcts or hydroureter. Renal vasculature is normal.

Adrenal Glands

The left adrenal gland is "plump" measuring 0.50 cm at the cranial pole and 0.59 cm at the caudal pole. It is observed in its normal position cranial to the left renal artery. It is normal in appearance (uniformly hypoechoic) and shape with no evidence of a mass effect.

The right adrenal gland is "plump" measuring 1.08 cm at the cranial pole and 0.86 cm at the caudal pole. The right adrenal gland is "boomerang" shaped, resulting in a prominent cranial pole. It is observed in its normal position between the cranial aspect of the right kidney and the caudal vena cava.

Spleen

The spleen is subjectively normal in size (0.97 cm) with slightly irregular margins. The blood flow through the hilus and splenic parenchyma appears normal. No focal parenchymal abnormalities are visualized.

Liver

The liver is large in size, and normal in echogenicity with smooth peripheral margins. The parenchyma is heterogenous in echotexture with subtle, indistinct focal mottling. The visible portions of the



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vasculature and biliary tract appear normal. There are numerous poorly defined hyperechoic nodules, examples measure 0.30 cm and 0.94 cm.

The gall bladder lumen is significantly distended. Some areas of the wall appear mildly thickened with adherent debris. There is a large amount of primarily non-organized echogenic debris. There is no evidence of bile duct dilation.

Gastrointestinal

The stomach contains minimal luminal contents. It measures at a normal thickness of <0.7cm 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. Duodenum wall measures 0.43 cm. Jejunum wall measures 0.35 cm. Visualized peristalsis appears appropriate. There were no focal lesions consistent with obstruction or a mass effect observed.

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.

Pancreas

The pancreas is normal and isoechoic to surrounding mesentery. There is no evidence of nodules or cystic lesions. There is no evidence of regional mesenteric inflammation or fluid.

Free Abdomen

Evaluation of the peritoneal cavity did not reveal any evidence of effusion, or subjective lymphadenomegaly. The Medial iliac nodes appear normal and there was no evidence of a caudal aortic thrombus at the bifurcation. The omentum is of normal uniform echogenicity.

ULTRASONOGRAPHIC FINDINGS

- Age related changes visualized associated with both kidneys.
- Heterogeneous liver with ill-defined hyperechoic nodules – The diffuse hepatic changes are non-specific and could be consistent with vacuolar hepatopathy, nodular hyperplasia, inflammatory/immune-mediated disease, fibrosis, extramedullary hematopoiesis, toxic hepatopathy (e.g., copper), infiltrative neoplasia (less likely) or other hepatopathy. The hyperechoic nodules have the appearance most consistent with benign nodules such as regenerative nodules. A neoplastic process cannot be definitively ruled out.
- Large gallbladder debris – A large amount of debris is evident in the gall bladder with no evidence of a mucocele or associated inflammation at this time. This could represent an early mucocele or cholestasis, with minimal evidence of associated inflammation at this time. Continued monitoring of labwork and ultrasound are warranted for progression of this lesion. Ursodiol therapy could be considered.
- Borderline “plump” adrenal glands – Differentials include anatomic variation or early hyperplasia. Recommend continued monitoring of the right adrenal.



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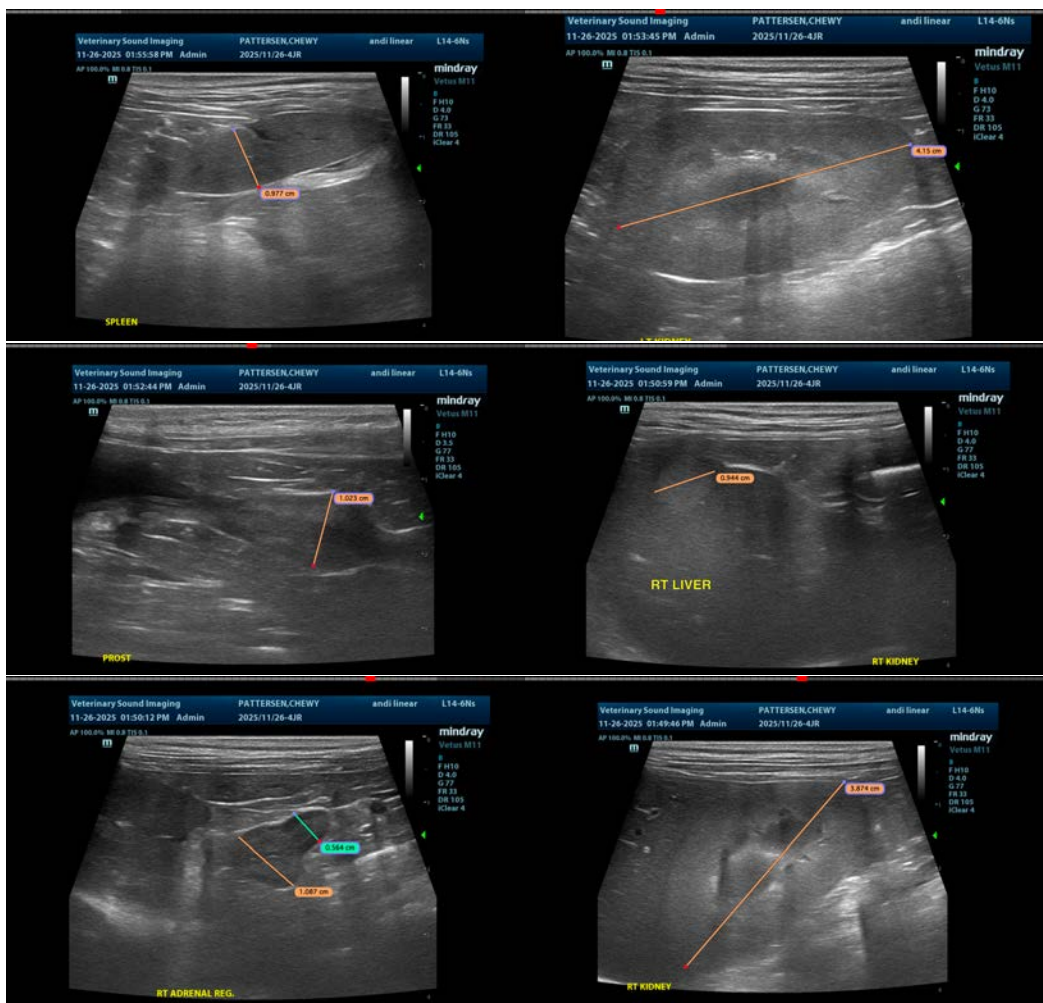
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INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

The liver subjectively appears somewhat heterogeneous with some ill-defined hyperechoic nodules. The appearance of the nodules trends more towards benign process such as regenerative nodules or similar. If an underlying neoplastic process is a significant concern, then a fine needle aspirate could be considered (provided coagulation parameters are normal). If there is concern for a primary hepatopathy, then it is likely that a biopsy of the liver with samples for histopathology, copper levels and cultures would be necessary. If there is any clinical concern for Leptospirosis, testing could be considered.

There is a large amount of debris visualized within the gallbladder, but no evidence of surrounding inflammation or wall thickening. You could consider chronic Ursodiol therapy and continued monitoring of the gallbladder.

Both adrenals are somewhat "plump". Lab work is not classic for Cushing's, but if symptoms are classic, you could consider adrenal function testing, keeping in mind that non-adrenal illness can cause false positives.





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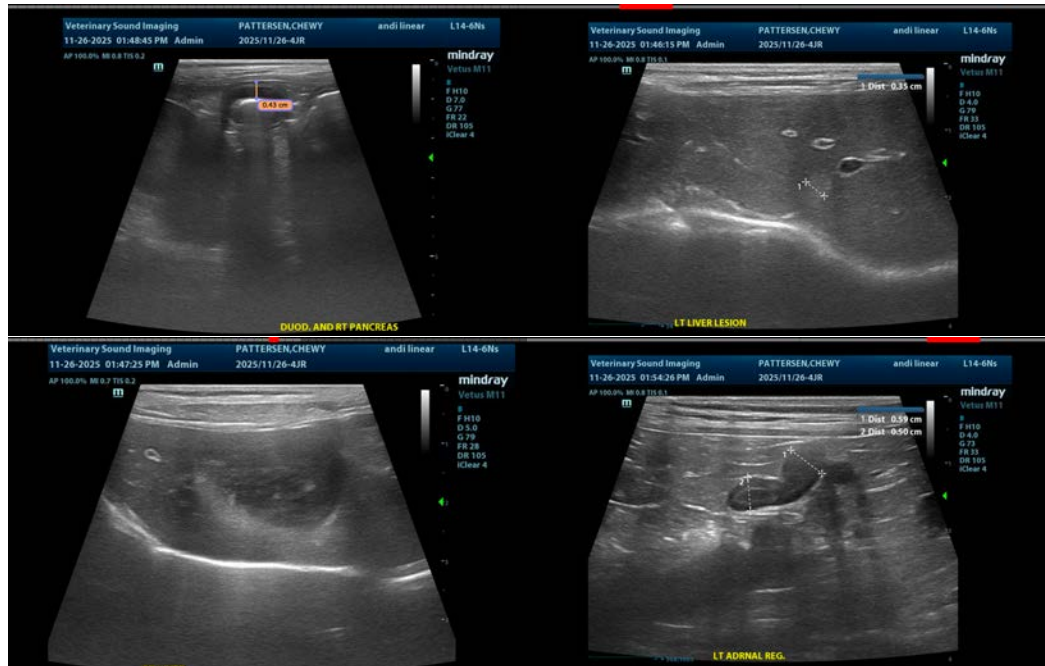
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The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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.

Kathleen Sennello DVM,MS, Diplomate ACVIM (Small animal Internal Medicine)

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