



PATIENT

Bowie Atkinson

SPECIES

Canine

BREED

Miniature Schnauzer

SEX

FS

AGE

10yr

WEIGHT

9.7kg

INTERPRETED BY

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

IMAGING PERFORMED BY

Dr Jill Rankin

HOSPITAL NAME

Royal Loop Vet Clinic

REFERRING VET

Dr Jodi

INVOICE 24193

DATE
03/13/2026

PRESENTING CLINICAL SIGNS

- The patient's medical history is primarily significant for the investigation of elevated liver enzymes.
- laboratory testing revealed multiple abnormalities. A chemistry panel showed elevated liver enzymes, including an AST of 74 (reference high 66), an ALT of 418 (reference high 118), and an elevated ALP of 168. Total protein was also slightly high at 7.5 (reference high 7.4). A CBC identified a slight thrombocytosis with a platelet count of 415 (reference high 400), along with neutropenia at 53% (reference low 60%) and lymphocytosis at 40% (reference high 30%). A T4 level was within the normal range at 28. A urinalysis performed on 02/23 showed a specific gravity of 1.031, a pH of 8, +1 protein, and +1 bilirubin. A bile acid test was noted as a potential next step for further investigation.

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 evidence of urine/lumen sediment, mineral, or calculi. The ureteral papillae were normal. The ureters were not visible which is normal. No evidence of inflammatory or neoplastic changes was noted.

Normal size and margination were present in the kidneys. A normal 1:3 cortex / medulla ratio was maintained. The medulla and cortices were uniform in texture with some increased echogenicity and mild loss of corticomedullary symmetry and definition expected for the age of the patient. No evidence of pelvic dilation was present. The left kidney measured 4.8 cm in length. The right kidney measured 5.0 cm in length.

The area of the aortic trifurcation was free of pathology.

Adrenal Glands

The left adrenal gland was uniform in size and contour with a uniformly hypoechoic parenchyma. The left adrenal gland measured 0.46 cm width at the caudal pole. The right adrenal gland was uniform in size and contour with a uniformly hypoechoic parenchyma. The right adrenal gland measured 0.51 cm width at the caudal pole.

Spleen

The spleen exhibited a finely textured and primarily homogenous parenchyma which was hyperechoic to the liver and renal cortical parenchyma. Discrete indistinct areas of hypoechoic parenchyma, likely consistent with differentiation between red /white pulp, hyperplasia or hematopoiesis, were present with no evidence of neoplastic criteria. 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.

Liver/Gallbladder

The liver was subjectively mildly enlarged. The liver parenchyma was mildly nonuniform and hypoechoic to the spleen with a moderate coarse echotexture and subjective mild parenchymal remodeling. The hepatic and portal vasculature were normal in appearance without signs of congestion. The gallbladder was non-distended in size with thin walls and congealed to non-dependent, hyperechoic non-mineralized debris. The cystic and common bile ducts were normal.



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Gastrointestinal

The stomach presented intact wall layering with a normal wall layer ratio. The lumen of the stomach contained mild non-shadowing ingesta sonographically suggestive of food echogenicity with no signs of obstruction or foreign material.

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 mechanical/metabolic ileus, obstruction or foreign material.

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

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 was evident.

Free Abdomen

No omental masses, overt lymphadenopathy or peritoneal effusion was present.

ULTRASONOGRAPHIC FINDINGS

Primary

- Hepatopathy exhibiting mild parenchymal remodeling
- Congealed non-dependent non-organized gallbladder debris (non-mucocele)
- Age-related renal changes
- Normal adrenal glands

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

The appearance of the liver was nonspecific but most consistent with benign hepatopathy. Considerations for the liver may include benign vacuolar hepatopathy, inflammatory/infectious/immune mediated disease, hyperplasia, hematopoiesis, toxic hepatopathy (i.e., copper) or other with neoplasia thought less likely. No evidence of intrahepatic or extrahepatic macroscopic shunt. Ultrasound guided FNA of the liver using a 25-gauge needle and assuming normal coagulation parameters would be warranted for screening cytology. Hepatosupportive medications such as Denamarin or Vitamin E as well as Ursodiol due to its antioxidant and immunomodulatory effects within the liver would be warranted, although these medications may not result in decreased hepatic enzyme levels. Leptospirosis titers / PCR may be considered if clinically indicated. Core or surgical biopsy is likely required for definitive diagnosis.



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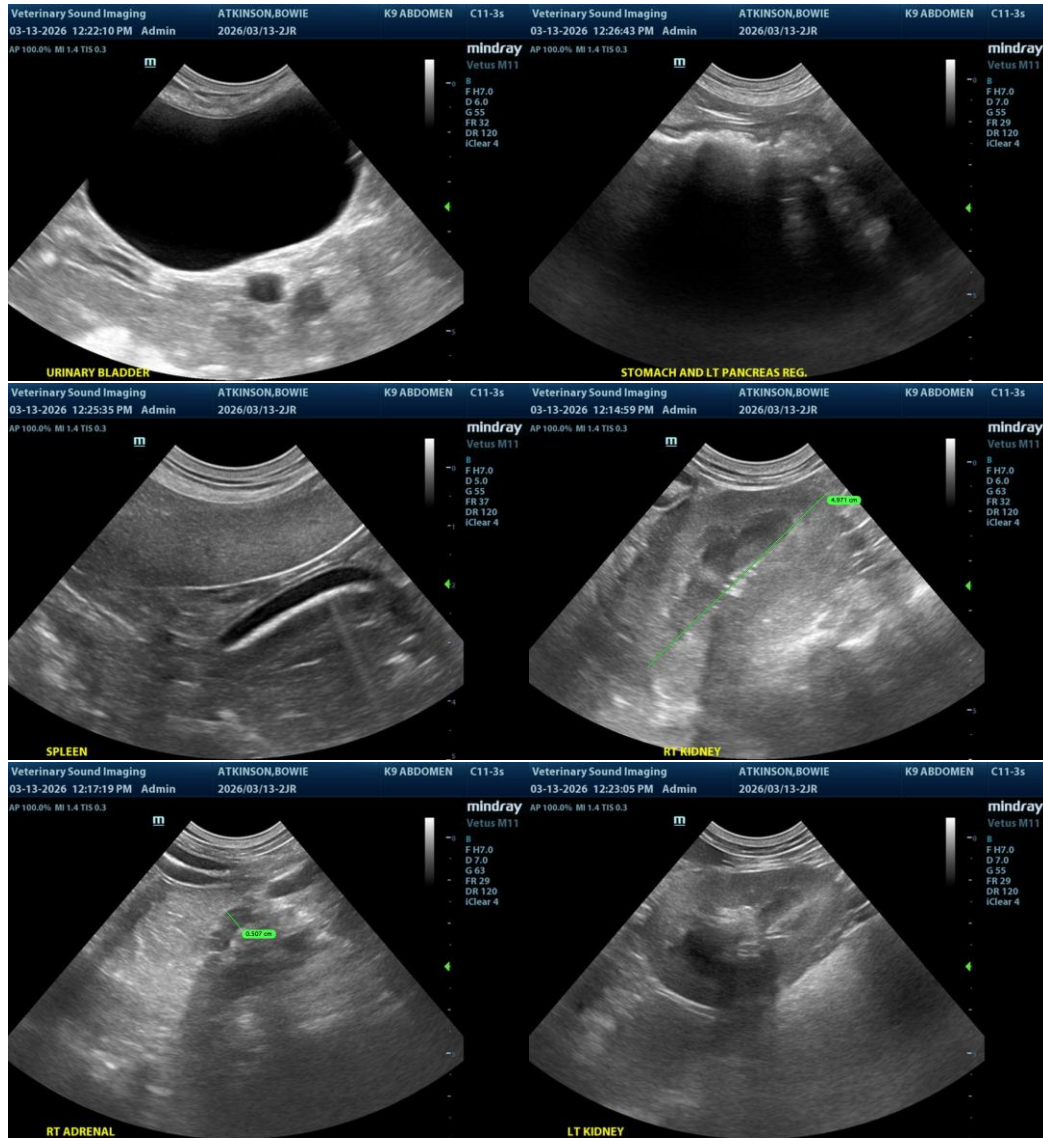
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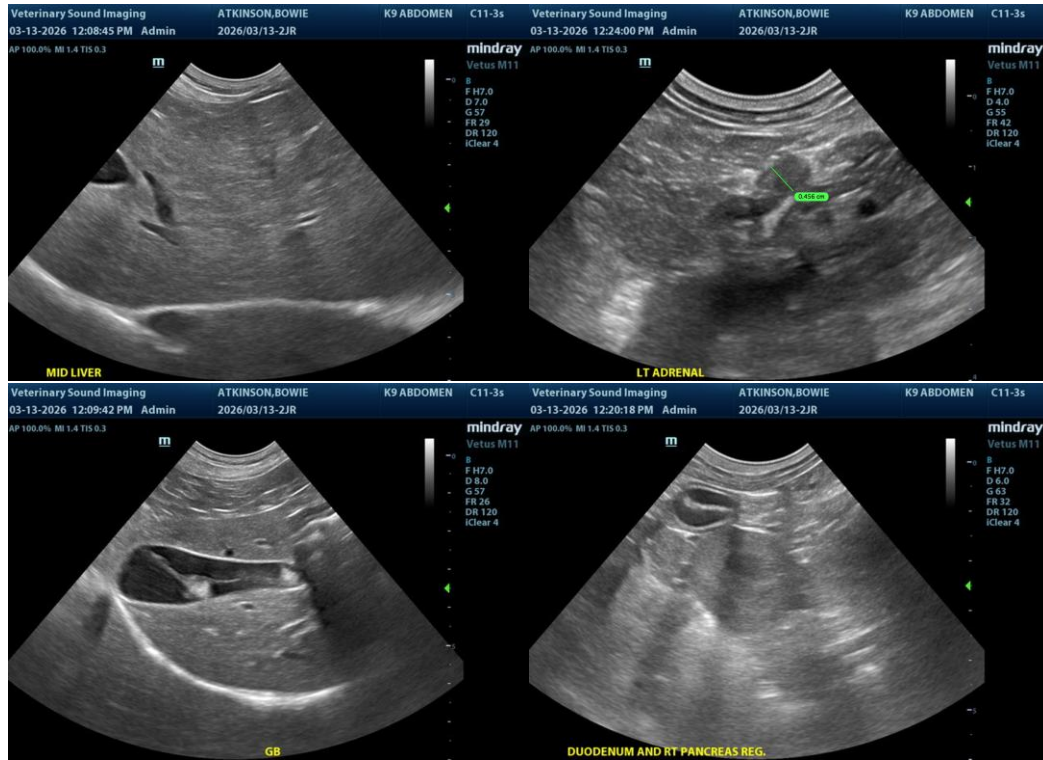
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The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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.

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