



## PATIENT

Jake Morra

## SPECIES

Canine

## BREED

Terrier Cross

## SEX

Neutered male

## AGE

9 years

## WEIGHT

15.2 lbs

## INTERPRETED BY

Dr. Alicia Angosto  
Guerrero

## IMAGING PERFORMED BY

Kristi Whitten

## HOSPITAL NAME

North Fork VC

## REFERRING VET

Dr. Whitten

## INVOICE

69606

## DATE

12/11/25

## PRESENTING CLINICAL SIGNS

**History:** Jake is a 9-year-old neutered male Terrier mix whose primary medical issues include recently diagnosed, persistently elevated liver enzymes and a history of significant dental disease requiring multiple extractions. Other notable but resolved issues include transient episodes of hind end pain and lameness, and allergic conjunctivitis.

**Abnormal PE/Chem/CBC/UA Results:** PE: NSF at this time. On 11/03/25, pre-anesthetic bloodwork for a dental procedure revealed elevated liver enzymes, specifically an ALT of 188 U/L (normal 10-125) and an ALP of 303 U/L (normal 23-212). A recheck on 11/17/25 showed a mixed trend, with the ALT increasing to 201 U/L and the ALP decreasing to 252 U/L, both remaining above normal ranges.

Following these results, the owner opted for medical management, and the patient was started on Clavamox and Denamarin on 12/01/25. An abdominal ultrasound is scheduled for 12/11/25 to further investigate the cause of the liver enzyme elevations.

## ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN

### *Urinary System*

The bladder lumen is poorly distended, and the wall of the urinary bladder appears thin and smooth. Due to underdistension, wall measurement may be overestimated. The small amount of urine present is apparently anechoic. The bladder neck and proximal urethra appear normal. There are no calculi and no evidence of inflammatory or neoplastic changes.

The left kidney is normal in shape and size (3.83x2.22 cm), and the cortical thickness is 0.35 cm in the sagittal plane. The right kidney is normal in shape and size (4.21x2.33 cm), and the cortical thickness is 0.38 cm in the sagittal plane. The cortex is isoechogetic compared to the liver parenchyma. The corticomedullary ratio is normal and corticomedullary definition is preserved. There is no evidence of pyelectasia or hydronephrosis, although small mineral foci or sand-like material are observed within the renal calyces of the left kidney. Color Doppler shows a normal pattern.

The prostate measured 1.62 x 0.7 cm, small, homogeneous, and hypoechoic, compatible with post-orchietomy atrophy.

### *Adrenal Glands*

Both adrenal glands show normal shape and echogenicity. The left adrenal gland measures 0.47 cm at the cranial pole and 0.48 cm at the caudal pole. The right adrenal gland measures 0.49 cm at the cranial pole and 0.51 cm at the caudal pole (maximum measurements obtained from three views).

### *Spleen*

Splenic thickness is 1.09 cm. The parenchyma demonstrates normal echogenicity and a fine homogeneous echotexture with a few hyperechoic foci, the largest measuring 3.97x6.22 mm. The splenic capsule is smooth and regular.



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## Liver

The liver is subjectively normal in size; its margins are sharp, and it does not extend beyond the greater curvature of the stomach. The liver parenchyma appears uniform and isoechoic compared to the falciform fat. There is a very subtle difference in echogenicity between adjacent hepatic lobes, although it is minimal. The parenchyma appears homogeneous overall, but when using the high-frequency linear probe, several small hypoechoic foci are observed, the largest measuring 5.49x6.85 mm. No hepatic lymphadenopathy is observed.

The gallbladder lumen is normally distended. The wall is thin and the contents are primarily anechoic. No dilation of the cystic duct or common bile duct is observed.

## Gastrointestinal

The stomach is empty and folded, with a gas pattern, mural thickness of 2.73 mm, and preserved wall layering.

The pylorus measures 4.20 mm, up to 6.23 mm in one region, although wall layering remains preserved; muscularis thickness 1.78 mm. Duodenum: 2.32 mm. Jejunum: 2.65 mm with normal wall layering. No signs of inflammation, ileus, or foreign material are identified.

Colon (transverse): 0.85 mm and 0.71 mm, with formed feces in the descending segment.

## Pancreas

No evident abnormalities were observed in the pancreatic areas evaluated.

## Peritoneal Cavity

No abdominal effusion or peritonitis is observed. Abdominal lymph nodes are not visualized, but the surrounding regions appear unremarkable. The iliac trifurcation is normal.

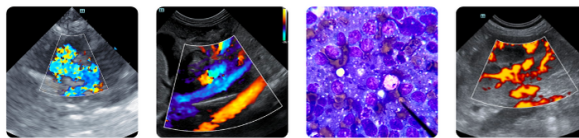
## ULTRASONOGRAPHIC FINDINGS

### PRIMARY FINDINGS

- Normal hepatic size, with a very subtle echogenicity variation between adjacent hepatic lobes and small hypoechoic hepatic foci.

### SECONDARY FINDINGS

- Tiny mineral foci within the left renal calyces (incidental).
- Few small hyperechoic splenic foci (largest 3.97x6.22 mm), most consistent with benign lesions such as myelolipomas or Bates bodies.



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## INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

The very subtle variation in echogenicity noted between adjacent hepatic lobes is a nonspecific but not uncommon finding in middle-aged to older dogs. Mild regional differences in hepatic echogenicity may occur with early or low-grade chronic hepatopathy, benign nodular hyperplasia, localized fibrosis, or mild fatty infiltration, even when overall liver architecture and size remain normal. These changes do not indicate clinically significant liver disease on their own, but they support the possibility of mild chronic hepatic change, which can only be definitively characterized by histopathology. Notably, terrier-type dogs, schnauzers, small poodles, and small-breed mixes have a well-recognized tendency to develop mild metabolic or diet-associated hepatic lipodosis, as well as chronically elevated ALT and ALP without evidence of progressive hepatobiliary disease. In this context, the subtle hepatic findings in this patient may represent benign or stable chronic change rather than clinically significant liver pathology.

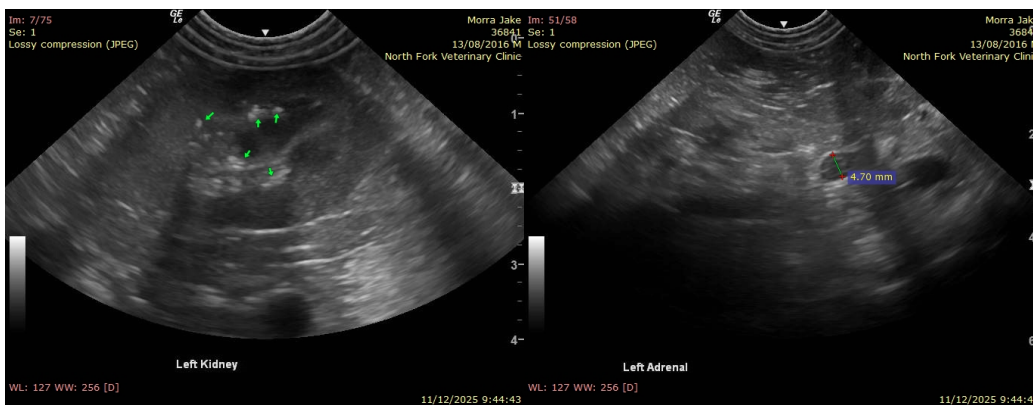
No biliary dilation, gallbladder wall thickening, or evidence of cholestasis is observed.

Although one segment of the pylorus measured up to 6.23 mm, the wall layering is fully preserved, and such measurements are commonly associated with transient muscular contraction rather than true pathology. In small to medium-sized dogs, brief pyloric thickening during peristalsis is considered a normal physiologic finding. There is no evidence of fixed focal thickening, loss of wall layers, mass effect, or delayed gastric emptying to suggest a clinically significant pyloric disorder.

Mild mineral sediment or tiny calculi are present within the left renal calyces but without pyelectasia or hydronephrosis, and these findings are unlikely to be clinically significant. The prostate is small and homogeneous, consistent with post-castration atrophy.

### Recommendations

- Continue Denamarin and recheck liver enzymes 6 weeks.
- If ALT or ALP continue to rise or fail to improve → consider bile acids test.
- Liver FNA or biopsy if enzymes continue progressively increasing, new imaging abnormalities appear, or clinical signs develop.
- Maintain dental follow-ups, as chronic oral inflammation can exacerbate hepatic enzyme elevations.





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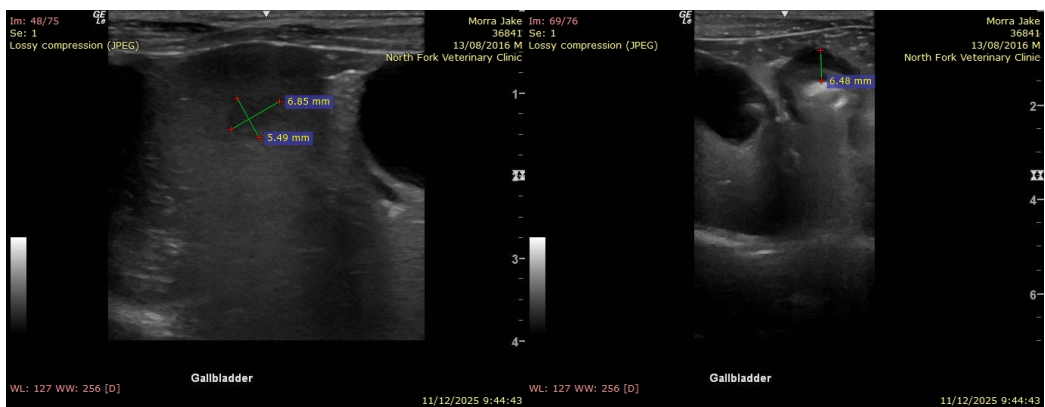
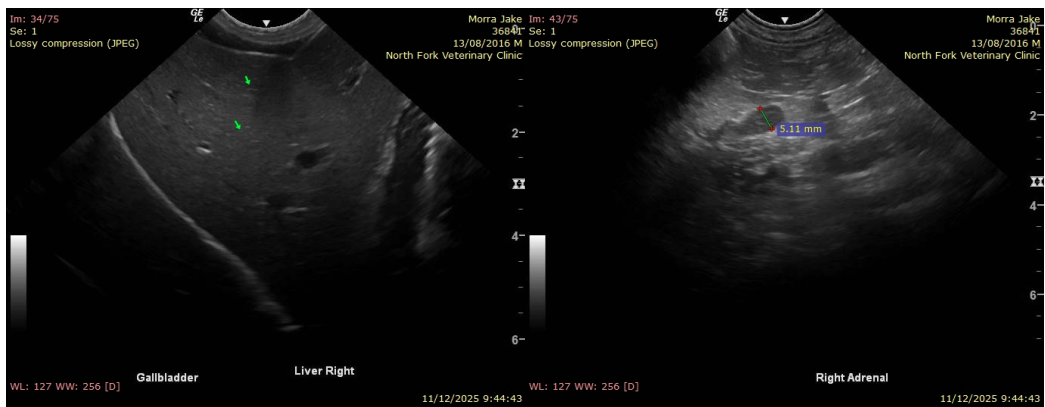
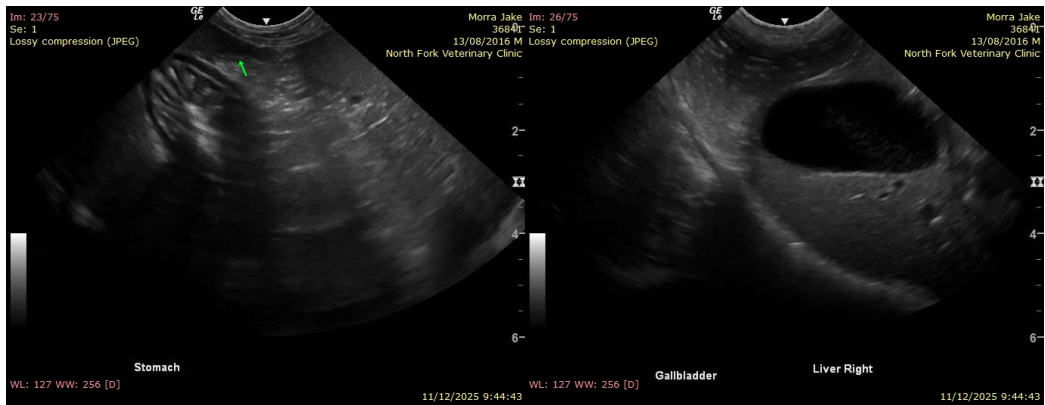
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The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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.

Alicia Angosto Guerrero, DMV, PgDip, MSc.



**PATIENT**

MV Esp Ultrasound in Domestic and Wild Animals

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[info@SonoPath.com](mailto:info@SonoPath.com)

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