



PATIENT

Mojo Evans

SPECIES

Canine

BREED

Schnauzer

SEX

Spayed Female

AGE

12 years

WEIGHT

16.5 lbs

INTERPRETED BY

Dr. Alicia Angosto
Guerrero

IMAGING PERFORMED BY

Dr. Mueller

HOSPITAL NAME

Cold Lake VC

REFERRING VET

Dr. Mueller

INVOICE

72131

DATE

3/2/26

PRESENTING CLINICAL SIGNS

- Hx: Vomiting and lethargic over the weekend.
- CBC - borderline anemia
- Chemistry - moderate elevations in ALT, ALKP, GGT, Cholesterol and Pancreatic Lipase levels
- Currently on Zentonil.
- Heart murmur noted today
- CBC - borderline anemia Chemistry - moderate elevations in ALT, ALKP, GGT, Cholesterol and Pancreatic Lipase levels

ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN

Urinary System

The urinary bladder is normally distended. The urinary bladder wall is thin and smooth. The urine is anechoic. The bladder neck and proximal urethra have a normal ultrasonographic appearance. No uroliths are identified. There is no sonographic evidence of inflammatory or neoplastic changes.

Left kidney: Normal shape and size, measuring 3.98×2.48 cm. Cortical thickness measures 0.47 cm in the sagittal plane. The renal cortex is isoechoic relative to the liver parenchyma. The corticomedullary ratio is within normal limits and corticomedullary definition is preserved. No pyelectasia, nephrolithiasis, or hydronephrosis is observed. Color Doppler evaluation demonstrates a normal vascular pattern.

Right kidney: Normal shape and size, measuring 3.45×2.02 cm. Cortical thickness measures 0.45 cm in the sagittal plane. The renal cortex is isoechoic relative to the liver parenchyma. The corticomedullary ratio is within normal limits and corticomedullary definition is preserved. No pyelectasia, nephrolithiasis, or hydronephrosis is observed. Color Doppler evaluation demonstrates a normal vascular pattern.

Adrenal Glands

Both adrenal glands have normal shape and echogenicity.

- Left adrenal gland: dorsoventral diameter measures 0.47 cm at the cranial pole and 0.58 cm at the caudal pole.
- Right adrenal gland: dorsoventral diameter measures 0.49 cm at the cranial pole and 0.44 cm at the caudal pole.

All measurements are within accepted reference limits for a dog of this size (generally <0.74 cm caudal pole in dogs of comparable body weight), supporting normal adrenal dimensions.



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Spleen

Splenic thickness measures 1.24 cm, which is within normal limits for a dog of this size. The splenic parenchyma demonstrates normal echogenicity and a fine, homogeneous echotexture without focal abnormalities. The splenic capsule is smooth and regular.

Liver

The liver is subjectively normal in size, with sharp margins and a regular contour. The hepatic parenchyma is homogeneous and isoechoic relative to the falciform fat, with a normal echotexture. No hepatic lymphadenopathy is identified.

The gallbladder lumen is normally distended. The gallbladder wall is mildly irregular in some regions, with an appearance consistent with very early mucosal glandular hyperplasia. The gallbladder contents consist of a moderate amount of biliary sludge, including a small portion of more mineralized-appearing sediment. No choleliths are identified. There is no sonographic evidence of cystic duct or common bile duct dilation.

Gastrointestinal

The stomach is moderately distended with ingesta. Gastric mural thickness measures 2.22–2.49 mm with preserved wall layering. The pyloric wall thickness measures 4.01 mm. These measurements fall within accepted canine reference ranges (stomach generally <5 mm when distended).

- Duodenum: wall thickness 3.5 mm (within normal canine reference range, typically <5 mm).
- Jejunum: wall thickness 3.82 mm (within normal reference range, typically <5 mm). Mucosa: 2.62 mm. Submucosa: 0.80 mm. Muscularis propria: 0.28 mm. Muscularis-to-mucosa ratio: $0.28/2.62 = 0.11$

No sonographic evidence of obstruction, ileus, mural loss of layering, or intraluminal foreign material is identified.

Colon: Transverse colon wall thickness measures 0.92 mm with mild fecal content and normal appearance. Descendent segment measures 2.01 mm, empty and mildly folded.

Both values fall within expected limits for the canine colon.

Pancreas

The pancreatic parenchyma is isoechoic relative to the adjacent omental fat. Within the right pancreatic lobe, a cystic structure measuring 6.16×7.04 mm is identified. No peripancreatic fat hyperechogenicity, free fluid, or parenchymal heterogeneity is observed. No sonographic evidence of active pancreatitis or pancreatic neoplasia is identified.



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Peritoneal Cavity

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No abdominal effusion is identified. There is no sonographic evidence of peritonitis or abdominal lymphadenomegaly. The iliac trifurcation appears normal.

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ULTRASONOGRAPHIC FINDINGS

BREED

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PRIMARY FINDINGS

- Mild gallbladder wall irregularity compatible with early mucosal glandular hyperplasia.
- Moderate biliary sludge with small mineralized component.

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SECONDARY FINDINGS

- Cystic structure (6.16×7.04 mm) in the right pancreatic lobe.

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INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

WEIGHT

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The gallbladder demonstrates early mucosal glandular hyperplasia with moderate biliary sludge. In a 12-year-old Miniature Schnauzer with hypercholesterolemia and cholestatic enzyme elevation, this is most consistent with early chronic cholestatic gallbladder disease. There is no ultrasonographic evidence of extrahepatic biliary obstruction.

INTERPRETED BY

Dr. Alicia Angosto
Guerrero

The structurally normal liver, in the context of moderate liver enzyme elevation, and cholesterol elevation, supports a diffuse vacuolar hepatopathy below the threshold of ultrasonographic detection. Most likely differentials include metabolic or lipid-associated vacuolar change, particularly given the patient's breed predisposition. Endocrine-associated hepatopathy is less supported by the normal adrenal dimensions, although functional disease cannot be excluded without testing.

IMAGING PERFORMED BY

Dr. Mueller

The small cystic lesion within the right pancreatic lobe is most consistent with an incidental pancreatic cyst (likely retention cyst) than with a pseudocyst. Despite elevated pancreatic lipase, there are no imaging features of active pancreatitis; however, mild pancreatitis cannot be excluded based on ultrasound alone, as sensitivity is limited in early or mild disease.

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No ultrasonographic abnormalities of the gastrointestinal tract were identified to account for the reported vomiting.

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No ultrasonographic explanation is identified for borderline anemia.

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Recommendations

- Correlate pancreatic lipase with quantitative Spec cPL if clinically indicated.
- Hepatobiliary support (S-adenosylmethionine and/or ursodeoxycholic acid, provided biliary obstruction is confidently excluded) may be considered in light of the cholestatic biochemical profile and ultrasonographic evidence of biliary sludge. Evaluation and management of possible hyperlipidemia are also reasonable. Final therapeutic decisions should be made at the discretion of the attending clinician, based on the patient's overall clinical status and laboratory trends.

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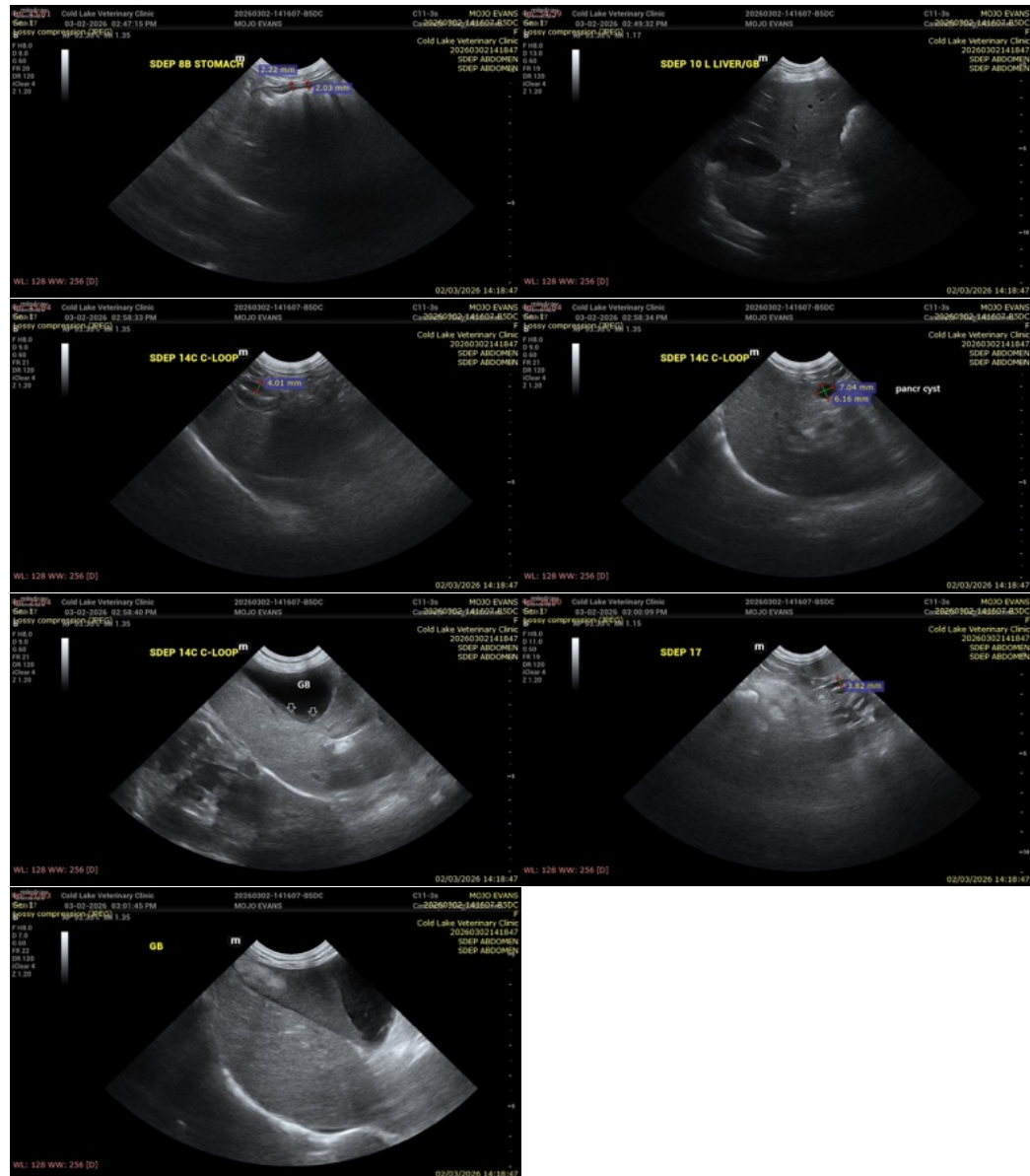
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- Reassess liver enzymes; pursue endocrine testing only if clinical suspicion exists.
- Given the patient's breed predisposition and biochemical profile, the current biliary sludge and early mural change warrant monitoring for potential progression to biliary mucocele.



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.



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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.

Alicia Angosto Guerrero, DMV, PgDip, MSc.

MV Esp Ultrasound in Domestic and Wild Animals

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