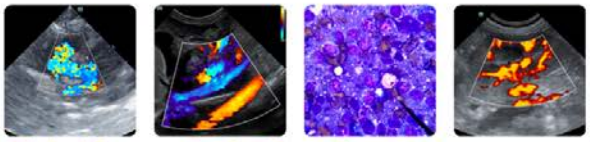


PATIENT

Possum Reyes

SPECIES

Rat

BREED

Domestic

SEX

Male

AGE

2 Years

WEIGHT

440g

INTERPRETED BY

Alicia Angosto Guerrero, DMV, PgDip, MSc.

IMAGING PERFORMED BY

Dallas Reynolds, LVT

HOSPITAL NAME

Lone Mountain Animal Hospital

REFERRING VET

Dr. Lindsay Geiger

INVOICE

72781

DATE

12/26/25

PRESENTING CLINICAL SIGNS

P has a history of liver elevations and hematuria w/ no bacteria present on urinalysis. Managed with milk thistle and values initially began improving but most recent blood work showed enzymes still increasing.

Abnormal PE/Chem/CBC/UA Results: 8/30/25 - ALT 111, AST 312, ALP 348 9/28/25 - ALT 104, AST 211, ALP 285 12/7/25 - ALT 172, AST 352, ALP 386

ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN

Urinary System

The urinary bladder lumen is normally distended, and the urinary bladder wall appears thin and smooth. The urine is predominantly anechoic, with scant suspended echoes. Normal appearance of the bladder neck and proximal urethra. There are no calculi and no evidence of inflammatory or neoplastic changes.

The left kidney is normal in shape and size, measuring 2.06×1.12 cm. Cortical thickness could not be reliably measured. The renal cortex is isoechoic compared to the liver parenchyma. The corticomedullary ratio is normal, and corticomedullary definition is slightly decreased. A mild medullary rim sign is noted. There is no evidence of pyelectasia, nephroliths, or hydronephrosis.

The right kidney is normal in shape and size; precise measurements could not be obtained. The renal cortex is isoechoic compared to the liver parenchyma. A small cortical cyst measuring approximately 1.42×1.17 mm is identified. The corticomedullary ratio is normal, and corticomedullary definition is slightly decreased. A mild medullary rim sign is noted. There is no evidence of pyelectasia, nephroliths, or hydronephrosis.

Reproductive System

Caudal to the urinary bladder, a heterogeneous soft tissue structure measuring approximately 3.4×5.4 mm is identified surrounding the proximal urethra. The parenchyma contains multiple small anechoic foci, creating a microcystic appearance, consistent with the prostate gland.

Bilateral elongated tubular structures are identified lateral and cranial to the urinary bladder, measuring approximately 2–4 mm in transverse diameter. These structures are thin-walled and predominantly hypoechoic, consistent with seminal vesicles in an adult male rat.

Adrenal Glands

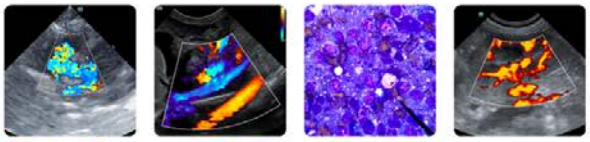
The left adrenal gland could not be visualized. The right adrenal gland measures approximately 0.17 cm at the cranial pole and 0.16 cm at the caudal pole.

Spleen

Splenic thickness is 0.63 cm. The parenchyma demonstrates normal echogenicity and a fine homogeneous echotexture without focal parenchymal abnormalities. The splenic capsule is smooth and regular.

Liver

The liver is subjectively normal in size, with sharp edges and a regular contour. The liver parenchyma appears uniform and isoechoic compared to the surrounding tissues, with a normal echotexture. No



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hepatic lymphadenopathy is observed.

The gallbladder is not visualized, which is considered normal in rats, as this species lacks a gallbladder.

Gastrointestinal

The stomach is distended with a significant amount of ingesta, with a mural thickness of approximately 1.06 mm and preserved wall layering. The pylorus measures 1.94 mm.

The duodenum measures 0.95 mm. The jejunum measures 0.53–0.58 mm, with preserved wall layering.

The intestinal appearance is consistent with a non-fasted animal, showing mild luminal dilation, increased peristaltic activity, and mucous-pattern content. No signs of inflammation, ileus, or foreign material are identified.

The colon measures approximately 0.35 mm in wall thickness and contains normal fecal material, without evidence of impaction in the descending segment.

Pancreas

The right pancreatic limb measures approximately 1.91–2.09 mm. The pancreatic parenchyma is isoechoic compared to the adjacent omental fat. No signs of active inflammation or neoplastic disease are evident.

Free Abdomen

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

PRIMARY FINDINGS

- Absence of focal hepatic lesions despite progressive elevations in liver enzymes, consistent with diffuse hepatopathy.

SECONDARY FINDINGS

- Mild bilateral decrease in corticomedullary definition with a mild medullary rim sign.
- Small right renal cortical cyst (incidental).
- Mildly enlarged, microcystic prostate gland, consistent with benign prostatic change.

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

Abdominal ultrasonography does not identify a focal hepatic mass, diffuse hepatomegaly, or architectural distortion of the liver parenchyma, despite the presence of progressive and persistent elevations in ALT, AST, and ALP over time. In adult to geriatric rats, progressive elevations in liver enzymes in the absence of focal ultrasonographic lesions are most commonly associated with chronic degenerative or inflammatory hepatopathies related to age, metabolic stress, or subclinical toxic exposure. The absence of ultrasonographically visible lesions does not exclude clinically significant hepatic disease, as diffuse hepatopathies in rodents may present with minimal or absent structural changes on imaging.

The prostate gland is mildly enlarged with a heterogeneous, microcystic appearance, a common finding in adult male rats and most consistent with benign prostatic hyperplasia or cystic glandular change. The

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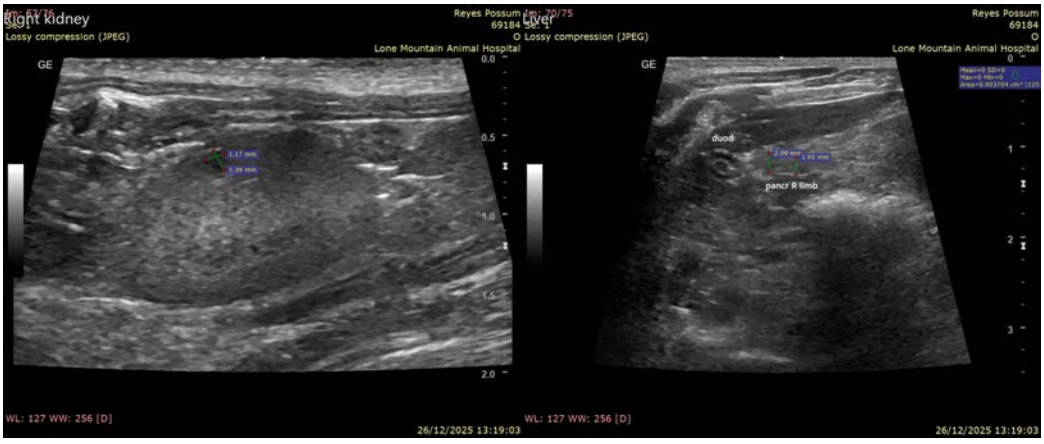
testes were not visualized during this examination; therefore, the reproductive status cannot be confirmed ultrasonographically. However, the presence and appearance of the prostate gland and seminal vesicles are consistent with an intact adult male.

The kidneys demonstrate mildly decreased corticomedullary definition with a mild medullary rim sign and a small right renal cortical cyst. In rats, these findings are commonly observed as incidental, age- or species-related changes and are frequently not associated with clinical signs or measurable abnormalities on bloodwork.

The gastrointestinal tract demonstrates findings consistent with a non-fasted state, including gastric distension with ingesta and increased peristaltic activity.

Recommendations:

- Biochemical monitoring of liver enzymes is recommended to assess progression of suspected diffuse hepatopathy.
- Because the rat liver is highly vascular and the patient's small body size offers minimal tolerance for hemorrhage, ultrasound-guided hepatic fine-needle aspiration carries a disproportionate risk relative to its expected diagnostic yield, particularly in cases of diffuse hepatopathy without focal lesions.
- Continued medical hepatic support: A hepatoprotective supplement containing S-adenosylmethionine, ideally combined with silybin, may be considered, as this provides broader antioxidant and hepatocellular support than milk thistle alone. SAMe can be safely used in rats at appropriate dosing and may be considered as hepatoprotective support in cases of suspected chronic diffuse hepatopathy.



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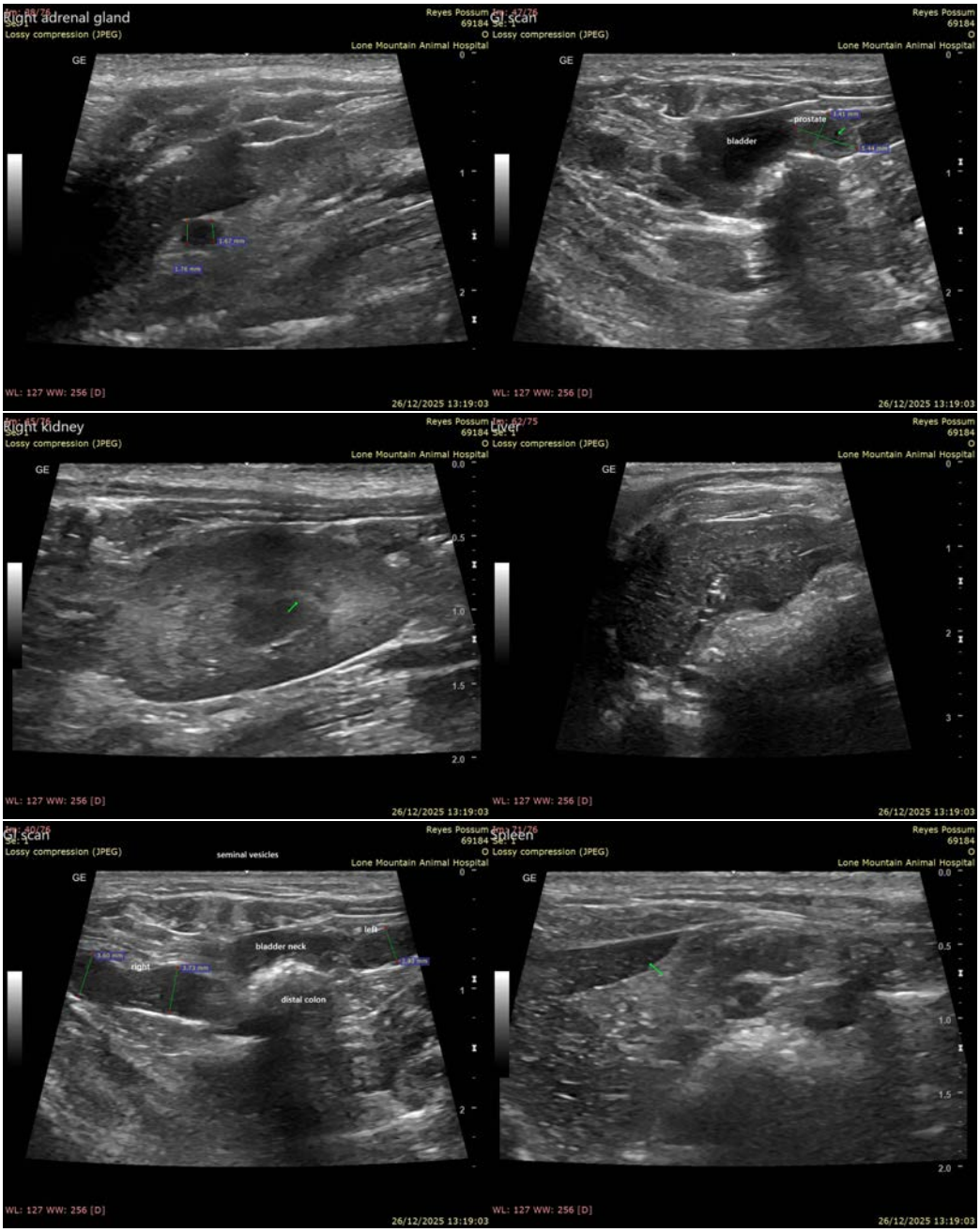

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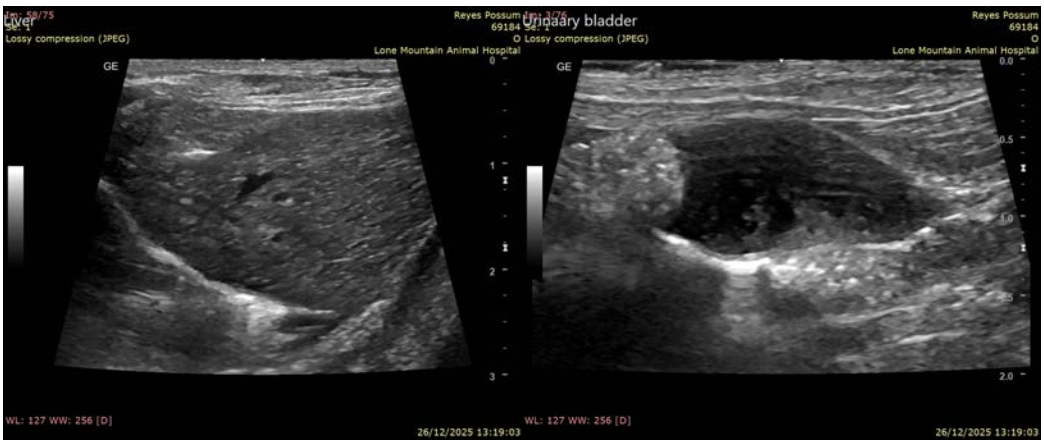

The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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.

info@SonoPath.com