



**PATIENT**

Rocky Brunelle

**SPECIES**

Canine

**BREED**

Terrier Mix

**SEX**

MN

**AGE**

12 years

**WEIGHT**

11.8 lbs

**INTERPRETED BY**

Beth Johnson, DVM  
DACVIM

**IMAGING PERFORMED BY**

Pamela Harrigan,  
RDCS, Certified  
Veterinary  
Sonographer

**HOSPITAL NAME**

All Friends Animal  
Hospital

**REFERRING VET**

Dr. Elizabeth Friday

**INVOICE**

11985

**DATE**

5/20/2026

**PRESENTING CLINICAL SIGNS**

Weight loss (although most recent weight was up). Elevated liver values (ALP 222, ALT 233). Elevated calcium (13.4). TP 8.4.

**ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN**

**Urinary System**

Urinary bladder is adequately distended. It has a normal uniform wall thickness. Contents include primarily anechoic fluid with occasional echogenic non-shadowing debris, most consistent with exfoliated cells, mucous and/or small blood clots, as well as dependent mineral "sand" (crystals) debris. Both sterile inflammation as well as urinary tract infection can present with echogenic debris. No masses are observed. At least one definitively visible cystolith is present measuring 0.38 cm in diameter. The trigone and visible pelvic urethra are normal in thickness with a smooth mucosal surface.

Prostate is normal in size, echotexture, and echogenicity for a neutered male.

Kidneys are overall normal in size and shape with smooth peripheral margination. A normal 1:3 cortex to medulla ratio is maintained. The medulla and cortices are uniform in texture with some mild increased cortical echogenicity and mild loss of corticomedullary distinction, expected in this age patient. Punctate non-obstructive nephroliths noted bilaterally. There is no evidence of pyelectasia or infarcts observed. Left kidney measures 4.34 cm, and the right kidney measures 4.6 cm.

**Adrenal Glands**

The right adrenal gland is normal in size (0.44 cm at cranial pole and 0.46 cm at caudal pole), shape and overall architecture, echogenicity and echotexture. Visible surrounding vasculature appears normal.

The left adrenal gland is normal in size (0.43 cm at cranial pole and 0.56 cm at caudal pole), shape and overall architecture, echogenicity and echotexture. Visible surrounding vasculature appears normal.

**Spleen**

Spleen is subjectively normal in size with normal smooth margins. Parenchyma is normal in echogenicity with a diffusely coarse/heterogenous echotexture. No discrete sizable focal nodules or masses are observed. Splenic vasculature appears normal.

**Liver**

Liver is subjectively enlarged with mildly irregular margins. Parenchyma is moderately heterogenous characterized by multiple poorly defined hypoechoic nodules within otherwise hyperechoic liver parenchyma. Visible vasculature and biliary tree appear normal without distension or congestion.

Gallbladder is moderately distended with anechoic bile as well as suspended and gravity dependent echogenic debris. The wall is smooth without visible thickening. There is no evidence of cystic or CBD dilation. There is no evidence of effusion or inflammation.

**Gastrointestinal**

The visible stomach wall is normal in thickness and layering. The lumen of the stomach is mildly distended with echogenic non-shadowing luminal contents and gas consistent with normal ingesta. There is no evidence of obstruction or foreign material noted. Pyloric outflow tract appears patent.



**PATIENT**

Rocky Brunelle

**SPECIES**

Canine

**BREED**

Terrier Mix

**SEX**

MN

**AGE**

12 years

**WEIGHT**

11.8 lbs

**INTERPRETED BY**

Beth Johnson, DVM  
DACVIM

**IMAGING PERFORMED BY**

Pamela Harrigan,  
RDCS, Certified  
Veterinary  
Sonographer

**HOSPITAL NAME**

All Friends Animal  
Hospital

**REFERRING VET**

Dr. Elizabeth Friday

**INVOICE**

11985

**DATE**

5/20/2026

The visible small intestines are normal in wall thickness and layering. Hyperechoic mucosal fogging or speckling is noted. Small intestinal motility appears adequate (1-3 contractions per min). The lumen of the small intestine is mildly distended with echogenic non-shadowing luminal contents and gas consistent with normal ingesta. There is no evidence of obstruction or foreign material noted.

The visible colon is normal in wall thickness (< 0.2 cm) and layering. Contents are consistent with normal formed feces and gas.

**Pancreas**

The pancreas that is observed appears appropriately isoechoic to surrounding omental fat. Visible capsule is smooth and normal in contour. Visible pancreatic parenchyma is homogenous and unremarkable. There is no visible pancreatic duct dilation. There is no evidence of active peripancreatic inflammation.

**Free Abdomen**

There is no visible free peritoneal effusion noted in these images.

There is no apparent pathologic lymphadenopathy noted in these images.

**PRIMARY FINDINGS**

- Moderately heterogenous liver – These changes are most consistent with benign processes such as nodular hyperplasia, steroid (vacuolar) hepatopathy, extramedullary hematopoiesis or possibly chronic inflammatory disease and less commonly infiltrative round cell or metastatic neoplasia.
- Subtly/mildly coarse splenomegaly – can be associated with congestion caused by sedation (if sedated) but can also be associated with diffuse infiltrative disease. Both benign conditions such as extramedullary hematopoiesis, lymphoid hyperplasia, as well as infiltrative neoplastic diseases such as round cell neoplasia should be considered.
- Moderate gallbladder debris - Cholecystic debris is of unknown clinical significance. It can be seen with biliary stasis from fasting or illness. Cholecystic debris is not necessarily related to hepatobiliary disease. Echogenic bile is most commonly an incidental finding in dogs and should be interpreted in combination with clinical signs such as nausea, inappetence, cranial abdominal discomfort and/or laboratory changes such as increased ALP and/or increased Tbili.
- Subtle mucosal speckling – Mucosal speckling is often present with inflammatory bowel disease (IBD). It is not specific for type or severity of disease. Mild speckling change can occur as a normal patient variant in the post-prandial state.

**SECONDARY FINDINGS**

- Moderate age-related kidney changes with punctate non-obstructive nephroliths.
- Urinary bladder mineral/sand debris with at least one cystolith noted.

**INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS**

A malignancy panel (PTH, PTHrP, iCa) to Michigan State College of Veterinary Medicine is recommended for further investigation of the reported hypercalcemia.



**PATIENT**

Rocky Brunelle

**SPECIES**

Canine

**BREED**

Terrier Mix

**SEX**

MN

**AGE**

12 years

**WEIGHT**

11.8 lbs

**INTERPRETED BY**

Beth Johnson, DVM  
DACVIM

**IMAGING PERFORMED BY**

Pamela Harrigan,  
RDCS, Certified  
Veterinary  
Sonographer

**HOSPITAL NAME**

All Friends Animal  
Hospital

**REFERRING VET**

Dr. Elizabeth Friday

**INVOICE**

11985

**DATE**

5/20/2026

If not recently evaluated, a thorough rectal and perianal exam as well as palpation of peripheral lymph nodes is recommended.

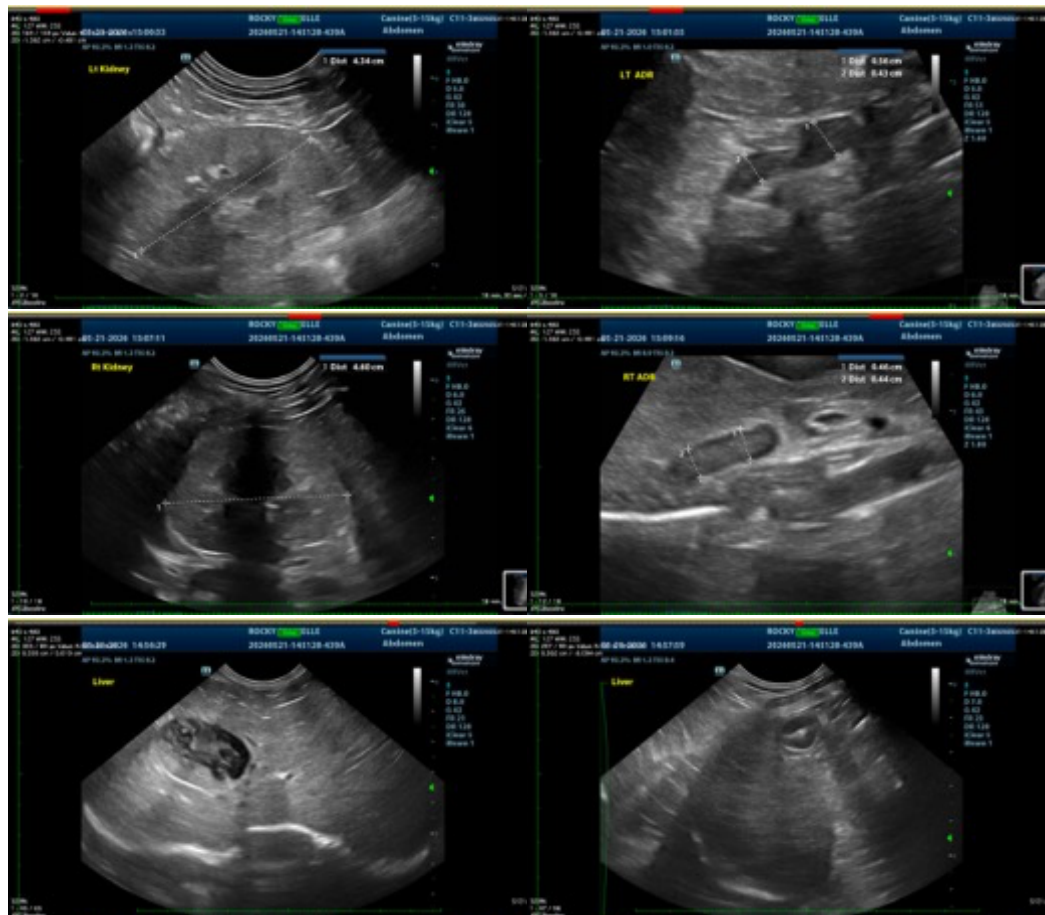
Pending results of above, a baseline cortisol is recommended. If baseline cortisol is less than 2, a full ACTH stimulation test is recommended to rule out hypoadrenocorticism.

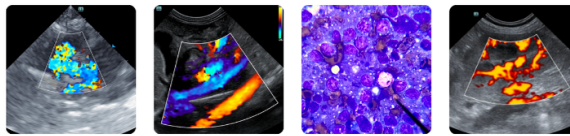
Additionally, bile acids could be considered if patient's total bilirubin is not increased.

Three view thoracic radiographs are recommended for further assessment of cardio-pulmonary status as well as to further evaluate for any evidence of metastatic disease, if not recently evaluated.

Sampling of the spleen and liver via fine needle aspirates could be considered if patient's coagulation status is appropriate. Especially if the malignancy panel is suggestive of hypercalcemia of malignancy.

Other than supportive/symptomatic medical management of clinical signs, further treatment recommendations are largely dependent on results of the above.





**PATIENT**

Rocky Brunelle

**SPECIES**

Canine

**BREED**

Terrier Mix

**SEX**

MN

**AGE**

12 years

**WEIGHT**

11.8 lbs

**INTERPRETED BY**

Beth Johnson, DVM  
DACVIM

**IMAGING PERFORMED BY**

Pamela Harrigan,  
RDCS, Certified  
Veterinary  
Sonographer

**HOSPITAL NAME**

All Friends Animal  
Hospital

**REFERRING VET**

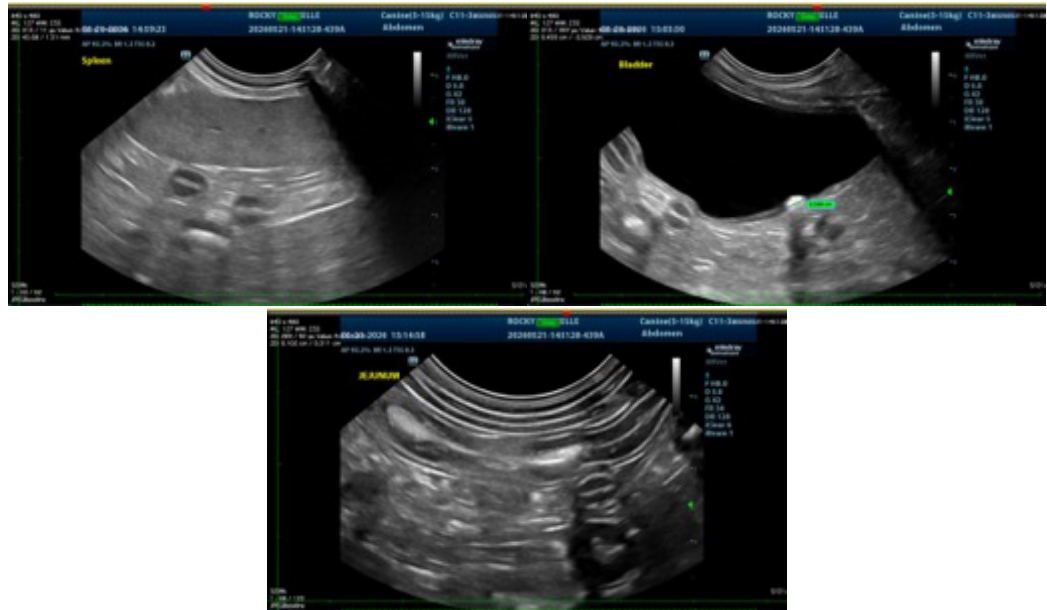
Dr. Elizabeth Friday

**INVOICE**

11985

**DATE**

5/20/2026



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.

Beth Johnson, DVM, DACVIM  
info@sonopath.com