



**PATIENT**

Betty Morozov

**SPECIES**

Canine

**BREED**

Shepherd Mix

**SEX**

Spayed Female

**AGE**

5 Years

**WEIGHT**

97 pounds

**INTERPRETED BY**

Dr Brittany Sinclair,  
BVSc(hons), DACVECC

**IMAGING PERFORMED BY**

Shari Reffi CVT

**HOSPITAL NAME**

Animal Hospital of  
Sussex County

**REFERRING VET**

Dr. Scairpon

**INVOICE**

14834

**DATE**

04/03/26

**PRESENTING CLINICAL SIGNS**

- Elevated LE's (check liver)
- Current Medications: Galliprant, Thyro-tabs, Potassium Bromide, Phenobarb, Keppra (Gaba/Traz sed.)

Abnormal PE/Chem/CBC/UA Results: ALP-444 (H 160); ALT-295 (H 121); AST-117 (H 55); USG: 1.042

**ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN**

**Urinary System**

The urinary bladder, trigone, and visible pelvic urethra were of normal thickness. The ureters were not visible which is normal. There was normal wall layering with no masses, uroliths or abnormal thickening visualized. Urine was anechoic. No evidence of inflammatory or neoplastic changes were noted.

The kidneys were both normal size and structure, with smooth capsule and normal corticomedullary definition and ratio. Medullary structure differed distinctly from that of the cortex. Pinpoint areas of cortical mineralization were present in the kidneys. The left kidney measured 7.11 cm in length. The right kidney measured 6.7 cm in length.

**Adrenal Glands**

Both adrenal glands were visualized and recognized as having normal shape, size, position and echogenicity for this breed and age. The visible phrenic vasculature was unremarkable. The left adrenal gland measured 2.55 cm in length and 0.59 cm at the caudal pole and 0.64 cm at the cranial pole. The right adrenal gland measured 2.25 cm in length and 0.51 cm at the caudal pole and 0.91 cm at the cranial pole.

**Spleen**

The spleen had a generally smooth homogeneous parenchyma and a smooth capsule with perivascular hyperechoic nodules visualized most consistent with benign myelolipomas. There was normal splenic vasculature with no signs of congestion or thrombosis. No sonographic evidence of acute or chronic inflammatory, neoplastic, or infarct changes were noted.

**Liver**

The liver is subjectively normal in size with normal contours and structure. The parenchyma is heterogenous with a coarse appearance. No specific nodules are visualized. Vascular and biliary tracts are of normal volume with no evidence of congestion. There are multifocal hyperechoic nodules noted throughout the liver.

The gall bladder is moderately distended with anechoic fluid, with hyperechoic non-shadowing debris present. There is no surrounding free fluid or signs of active inflammation.

**Gastrointestinal**



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The stomach contains minimal luminal contents. It measures at a normal thickness of with some variability due to the presence of rugal folds. The distinction of the gastric wall layers is adequate. No masses or focal lesions were observed.

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The visualized areas of duodenum, jejunum and ileum have a relatively uniform diameter with minimal fluid distension. Wall thickness is normal. Bowel loops follow a curvilinear path with distinct wall layering maintaining the typical 1:3 muscularis: mucosa layer ratio. There were no focal lesions consistent with obstruction or a mass effect observed.

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The ileocecal junction was not visualized. Sections of colon are visualized with formed fecal material and gas shadowing distally. There is no observed focal or generalized colon wall thickening or loss of layering.

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**Pancreas**

The area of the pancreas was isoechoic to surrounding tissue with no overt inflammation. Pancreatic tissue was not distinctly visualized which is common.

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**Lymph Nodes**

No clinically significant lymphadenopathy or abnormalities noted.

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**Free Abdomen**

No masses or free fluid were noted.

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**ULTRASONOGRAPHIC FINDINGS**

- Coarse liver with hyperechoic nodules.
- Mild bilateral nephrocalcinosis.

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**INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS**

Liver changes are most consistent with a vacuolar hepatopathy, though this diagnosis cannot be definitively made with ultrasound imaging alone. Vacuolar degeneration is a common nonspecific indicator of hepatocyte injury which is most commonly secondary to exogenous steroid exposure, hyperadrenocorticism, or an idiopathic age-related change, though other endocrinopathy (hypothyroidism), infectious or inflammatory hepatitis (bacterial, viral, auto-immune other), and neoplasia among other things remain possibilities. The Phenobarbital use is a likely explanation for hepatic changes and blood work abnormalities. In the face of elevated liver enzymes liver aspirate is recommended to further characterize these ultrasonographic changes. Ultimately liver biopsy is generally required for definitive diagnosis and should be considered if significant clinical signs or severe liver enzyme elevations are progressive. Bile acid profile could be considered to assess liver function if clinically indicated. Clinical signs associated with vacuolar hepatopathy often reflect underlying disease. Idiopathic vacuolar hepatopathy may be asymptomatic and treatment is not necessarily indicated or effective at reducing liver enzymes. Imaging should be rechecked on a routine basis (q3-6mo) or if further significant increase in liver enzymes and/or new clinical signs are noted.

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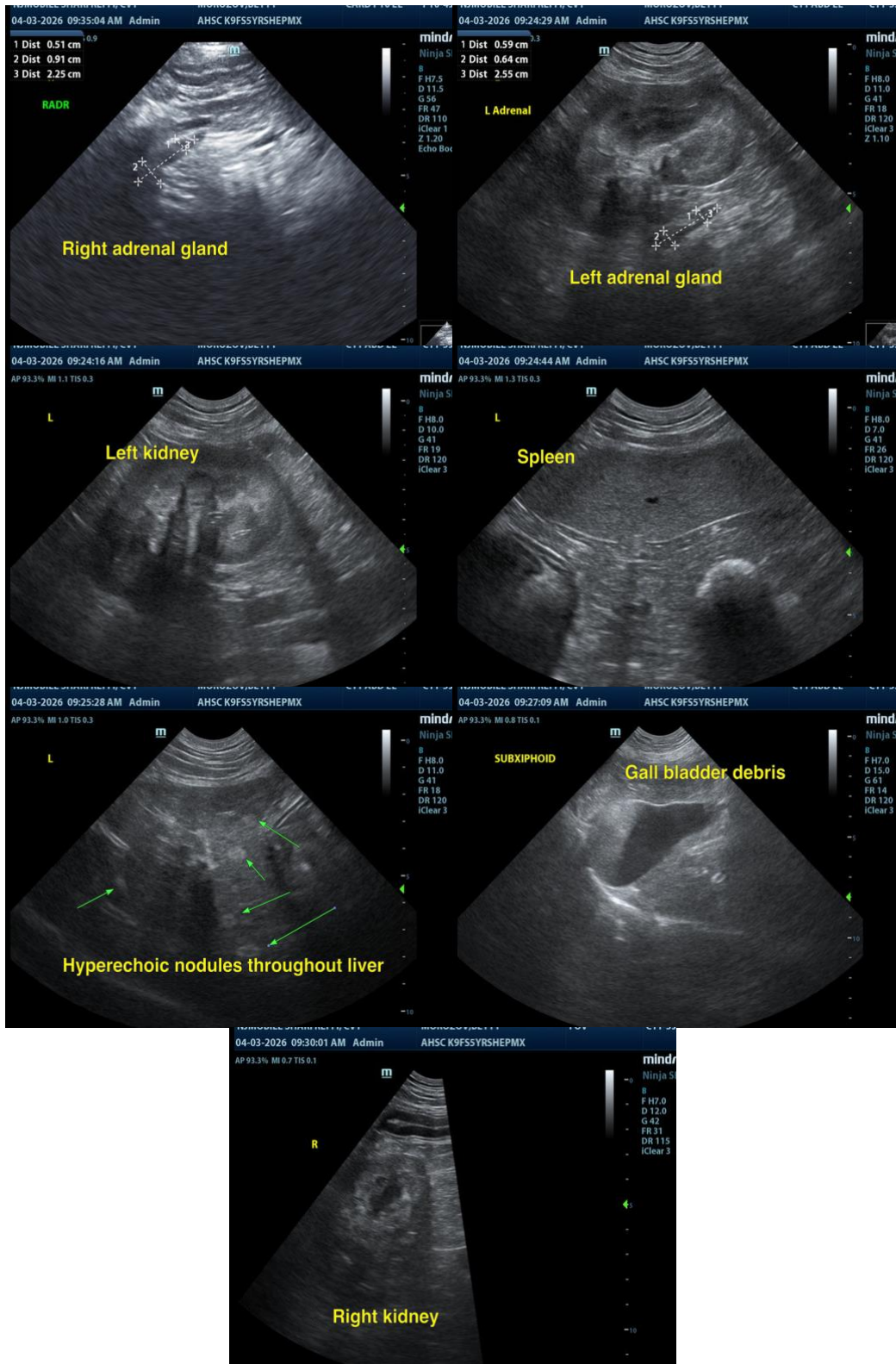
Dr. Scairpon

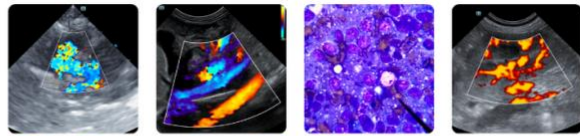
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The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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.

Dr Brittany Sinclair, BVSc(hons), DACVECC

info@SonoPath.com