



**PATIENT**

Josephine Bulford

**SPECIES**

Canine

**BREED**

Pomeranian X

**SEX**

Spayed Female

**AGE**

6 Years

**WEIGHT**

29 Pounds

**INTERPRETED BY**

Kathleen Sennello DVM,  
MS, Diplomate ACVIM  
(Small Animal Internal  
Medicine)

**IMAGING  
PERFORMED BY**

Jessica Miller

**HOSPITAL NAME**

Tranquility VC

**REFERRING VET**

Dr. House

**INVOICE**

40677

**DATE**

8/23/22

**PRESENTING CLINICAL SIGNS**

ALP 1669, hx of PU/PD but resolving w/ UTI treatment- E. coli infection. Current meds: zeniquin 50mg q24h

Abnormal PE/Chem/CBC/UA Results: ALP 1669, Creat 0.4

**ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN**

**Urinary System**

The urinary bladder is moderately distended with anechoic urine. The Bladder wall largely appears normal, but is very slightly irregular along the mucosal surface. The area of the trigone, ureteral papillae and visible urethra (to a depth of 2cm) appear free of any calculi or mass lesions. Findings are most consistent with mild cystitis or lack of urine distention.

The left kidney has a normal shape and size (4.17 cm). Overall echogenicity is normal with adequate corticomedullary distinction and a typical 1:3 cortex:medulla ratio. There is no evidence of perinephric inflammation or effusion. There is no evidence of pyelectasia, nephroliths, infarcts or hydroureter. Renal vasculature is normal.

The right kidney has a normal shape and size (4.92 cm). Overall echogenicity is normal with adequate corticomedullary distinction and a typical 1:3 cortex:medulla ratio. There is no evidence of perinephric inflammation or effusion. There is no evidence of pyelectasia, nephroliths, infarcts or hydroureter. Renal vasculature is normal.

**Adrenal Glands**

The left adrenal gland is normal in size measuring 0.54 cm at the caudal pole. It is observed in its normal position cranial to the left renal artery. It is normal in appearance (uniformly hypoechoic) and shape with no evidence of a mass effect.

The right adrenal gland is normal in size measuring 0.44 cm at the caudal pole. It is observed in its normal position between the cranial aspect of the right kidney and the caudal vena cava. It is normal in appearance (uniformly hypoechoic) and shape with no evidence of a mass effect.

**Spleen**

The spleen is subjectively normal in size, echotexture is homogenous, and the splenic capsule is smooth with no irregularities. The blood flow through the hilus and splenic parenchyma appears normal. There is a small ill-defined, hypoechoic lesion visualized.

**Liver**

The liver is large in size, and normal in echogenicity with smooth peripheral margins. The parenchyma is heterogenous in echotexture with subtle, indistinct focal mottling. The visible portions of the vasculature and biliary tract appear normal. There are too numerous to count ill-defined, hypoechoic nodules randomly dispersed within the hepatic parenchyma, varying in size from 0.5-1.0 cm.

The gallbladder lumen is moderately distended. The wall of the gall bladder is not thickened and has a smooth mucosal surface. Luminal contents are primarily anechoic. The cystic and common bile ducts are normal/not visible.



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**Gastrointestinal**

The stomach is moderately dilated with fluid and irregular shadowing material most consistent with normal ingesta and gas. It measures at a normal thickness of <0.7cm with some variability due to the presence of rugal folds. The distinction of the gastric wall layering is adequate and there is no impression of reduced peristaltic activity. There is focal shadowing material visualized within the gastric lumen. Correlate with feeding history, medications, and correlate with radiographs.

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. The duodenum measured as normal (between 0.3-0.5cm in wall thickness) and the jejunum measured as normal (between 0.2-0.47cm.) Visualized peristalsis appears appropriate. There were no focal lesions consistent with obstruction or a mass effect observed.

The ileocecal junction was visualized and exhibited normal intact wall layering and is subjectively of normal thickness. 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.

**Pancreas**

The pancreas is normal and isoechoic to surrounding mesentery. There is no evidence of nodules or cystic lesions. There is no evidence of regional mesenteric inflammation or fluid.

**Free Abdomen**

Evaluation of the peritoneal cavity did not reveal any evidence of effusion, or subjective lymphadenomegaly. The Medial iliac nodes appear normal and there was no evidence of a caudal aortic thrombus at the bifurcation. The omentum is of normal uniform echogenicity.

**ULTRASONOGRAPHIC FINDINGS**

- Mildly irregular bladder mucosa – The bladder mucosal changes could be consistent with cystitis or artifactual due to lack of adequate luminal distension. Bladder neoplasia cannot be ruled out but is considered unlikely in this patient.
- Small, hypoechoic nodule visualized within the spleen – There is a non-cavitated, hypoechoic splenic nodule visualized. Differentials include lymphoid hyperplasia, extramedullary hematopoiesis, infiltrative neoplasia, inflammation, other. Cytology or histopathology would be necessary to get a definitive diagnosis.
- Large, heterogeneous liver with diffuse hypoechoic nodules – The diffuse hepatic changes are non-specific and could be consistent with vacuolar hepatopathy, nodular hyperplasia, inflammatory/immune-mediated disease, fibrosis, extramedullary hematopoiesis, toxic hepatopathy (e.g., copper), infiltrative neoplasia (less likely) or other hepatopathy. These nodules are likely to be benign lesions, although an underlying neoplastic process cannot be definitively ruled out.
- Focal shadowing material visualized within the gastric lumen.

**INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS**

The liver is coarse and heterogeneous with focal hypoechoic lesions. Recommend a fine needle aspirate to further evaluate these lesions. The adrenal glands are not overtly enlarged, making Cushing's possibly less likely, but the possibility cannot be ruled out.



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- Recommend pre- and post-prandial bile acids to evaluate liver function.

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- Recommend a fine needle aspirate of the liver (ideally a hypochoic nodule as well), as long as clotting parameters permit.

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- Consider three view thoracic radiographs to rule out concurrent thoracic disease/involvement.
- If these parameters are relatively normal, and classic symptoms of Cushing's are present, you could consider adrenal function testing.

The bladder mucosa is slightly irregular. This could be due to lack of urine distention, but given the recent urinary tract infection, recommend continued monitoring and repeat culture after cessation of antibiotics to ensure the infection is gone.

**SEX**

Spayed Female

There is a small hypochoic nodule visualized in the spleen. Options moving forward include continued monitoring with ultrasound or a fine needle aspirate.

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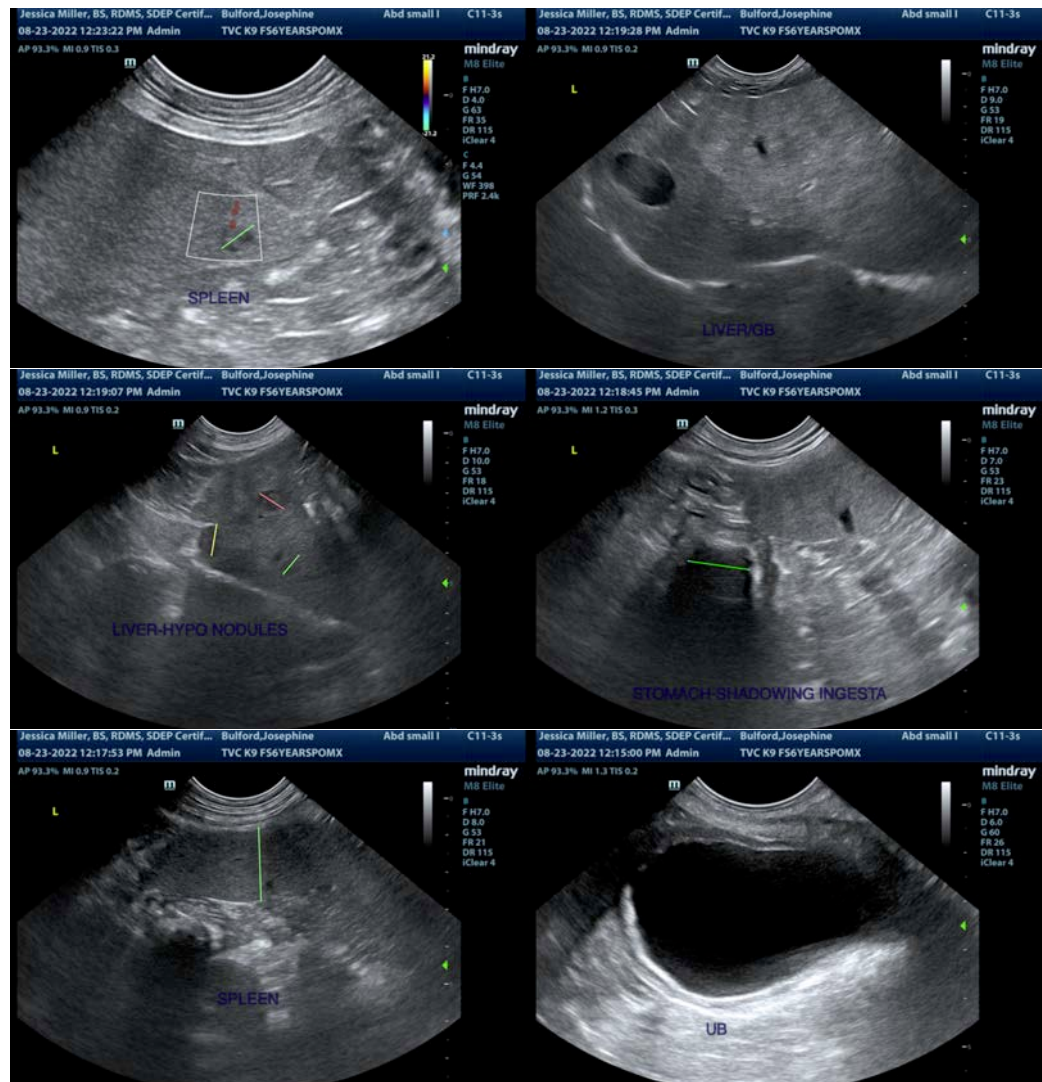
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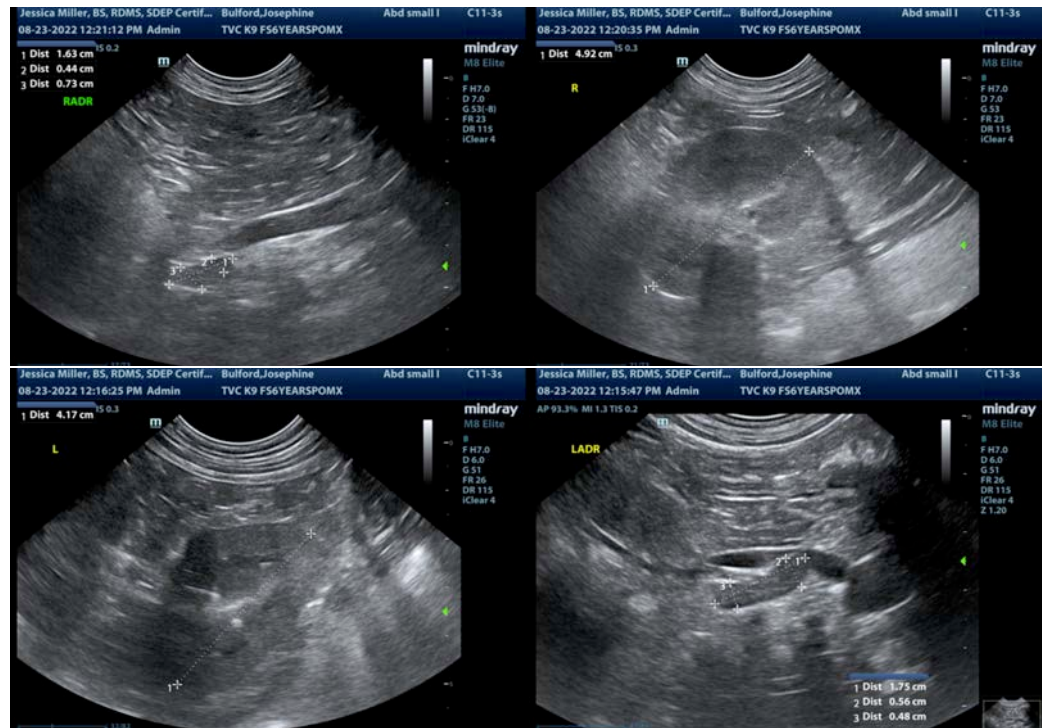
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The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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.

Kathleen Sennello DVM,MS, Diplomate ACVIM (Small animal Internal Medicine)

kathleen.sennello@sonopath.com