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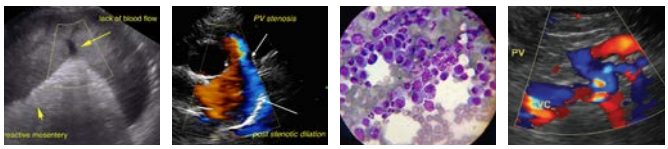

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1-800-838-4268 info@sonopath.com

**PATIENT**
Daktari Clerc

**SPECIES**
Canine

**BREED**
Lhasa X

**SEX**
Spayed Female

**AGE**
13.5 Years

**WEIGHT**
7.2 kg

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

**IMAGING PERFORMED BY**
Dr. Singh

**HOSPITAL NAME**
Balmy Beach PH

**REFERRING VET**
Dr. Singh

**INVOICE**
39718

**DATE**
7/20/22

## PRESENTING CLINICAL SIGNS

vomiting episodes 3-4 times Hx of cardiac disease Severe periodontal disease Elevated liver enzymes, mild ALT elevation
Abnormal PE/Chem/CBC/UA Results: Hemoconcentration ALT elevated

## ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN

### *Urinary System*

The urinary bladder is moderately distended with anechoic urine. The Bladder wall, trigone, ureteral papillae and visible urethra (to a depth of 2cm) appear normal with no evidence of wall thickening, mucosal irregularities, masses or cystic calculi.

The left kidney has a normal shape and size (3.4 cm) with pinpoint non-obstructive nephroliths. Overall echogenicity is slightly hyperechoic with poor 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, infarcts or hydroureter. Renal vasculature is normal.

The right kidney has a normal shape and size (3.35 cm) with pinpoint non-obstructive nephroliths. Overall echogenicity is slightly hyperechoic with poor 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, infarcts or hydroureter. Renal vasculature is normal.

### *Adrenal Glands*

The region of left adrenal (Cranial to left renal artery) is unremarkable but the adrenal is not distinctly visualized. No evidence of a mass effect.

The region of the right adrenal (between right cranial kidney and vena cava) is unremarkable, but the adrenal is not distinctly visualized. No evidence of a mass effect.

### *Spleen*

The spleen is subjectively normal in size. The spleen echotexture is heterogenous and mottled, the splenic capsule is smooth with no irregularities. The blood flow through the hilus and splenic parenchyma appears normal. No focal parenchymal abnormalities are visualized.

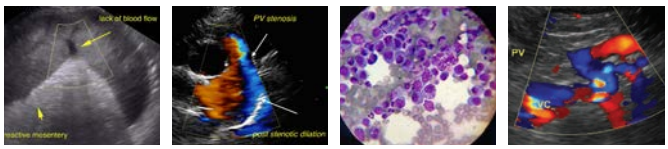
### *Liver*

The liver is subjectively normal in size, and 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 numerous ill-defined, hypoechoic nodules throughout the parenchyma. Examples of these nodules measure at 0.90 cm and 1.0 cm.

The gall bladder lumen is moderately distended. The wall of the gall bladder is not thickened and has a smooth mucosal surface. There is a moderate amount of non-organized, hyperechoic, shadowing debris visualized in the neck of the gallbladder. This also could represent a biliary stone. The cystic and common bile ducts are normal/not visible.

### *Gastrointestinal*

The stomach contains minimal luminal contents. 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 layers is adequate and there is no impression of reduced peristaltic activity. In some views of the pylorus, the pyloric wall appears somewhat prominent, measuring at 0.53 cm. No focal lesions are 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. 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*

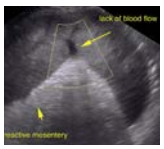
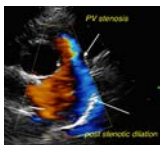
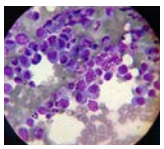
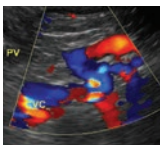
The pancreas is large and hypoechoic to surrounding mesentery. There is no evidence of nodules or cystic lesions. There is evidence of regional mesenteric inflammation. Consistent with mild pancreatitis.

### *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 generally of normal echogenicity, but there is a hyperechoic rounded structure visualized measuring 2.5 cm x 1.33 cm. It appears omental in the region of the pancreas, and could be an area of inflamed fat(?). The nature of this lesion is unclear.

## ULTRASONOGRAPHIC FINDINGS

- Decreased corticomedullary distinction in both kidneys with pinpoint non-obstructive nephroliths – The bilateral renal findings are consistent with age-related change. The hyperechoic mineralized foci observed at the corticomedullary junction of the left/right kidney are consistent with small, non-obstructive nephroliths.
- Mottled spleen – The diffuse splenic changes are non-specific and could be consistent with lymphoid hyperplasia, extramedullary hematopoiesis, infiltrative neoplasia, inflammation, other. Cytology or histopathology would be necessary to get a definitive diagnosis.
- Hypoechoic pancreas with surrounding mildly hyperechoic mesentery – The pancreatic changes are most consistent with mild pancreatitis/pancreatic inflammation. Recommend fPLI testing and continued monitoring for improvement or possible development of a pancreatic abscess. Consider fine needle aspirate if not improving.
- Heterogeneous liver with ill-defined 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. The hypoechoic nodules visualized could represent a benign or neoplastic process.
- Moderate gallbladder debris – The significance of the aggregated gallbladder sludge is unclear. This could represent an early mucocele, cholestasis, or may be secondary to fasting. This debris is hyperechoic and mineralized, and could also represent gallbladder stones.
- Questionable thickening of the pyloric wall – This could be consistent with inflammation, edema, infiltrative neoplasia, imaging artifact due to rugal folds, other.
- Hyperechoic omental mass effect – suspect an area of inflamed fat, other. Consider fine needle

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aspirate.

## INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

There are numerous lesions visualized on today's exam, which is to be expected in a senior patient. There is decreased corticomedullary distinction in both kidneys with non-obstructive nephroliths. This is likely an age related change. Consider blood pressure evaluation, urinalysis and culture.

The spleen appears subjectively mottled. If there is possible concern for underlying round cell neoplasia, consider a fine needle aspirate.

The pancreas appears hypoechoic with some hyperechoic mesentery near the right limb. This could be an indicator of mild pancreatitis. Correlate with PLI finding and consider symptomatic treatment for acute pancreatitis.

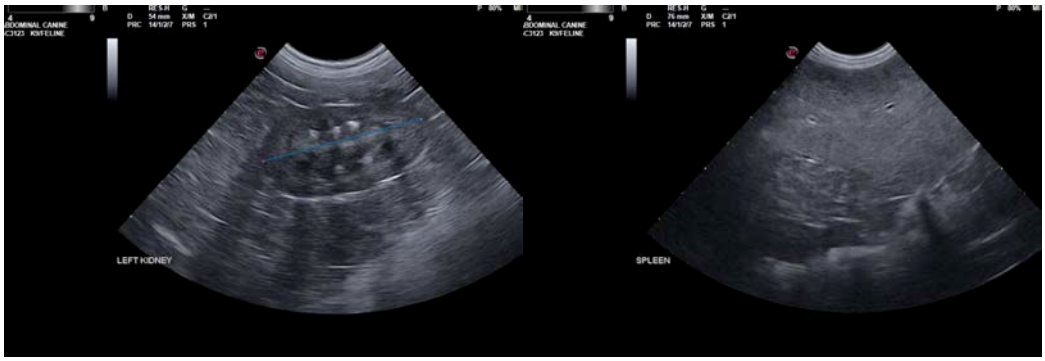
The liver is heterogeneous with ill-defined nodules. These could be benign regenerative nodules, or could indicate an underlying neoplastic process. Recommend a liver function test and fine needle aspirate of the liver.

The gallbladder is moderately distended and there is hyperechoic debris collecting in the neck of the gallbladder. This debris shadows and could be consistent with mineralized debris or stones. Correlate with bloodwork findings. The common bile duct is not visualized.

The pylorus appears somewhat prominent. This could be within normal limits for this individual, but continued monitoring is warranted. If vomiting persists, you could consider obtaining gastric and small intestinal biopsies.

There is a somewhat ill-defined, hyperechoic omental lesion visualized that does not appear overtly associated with any other structures. This could represent some inflamed fat or other tissue. Recommend continued monitoring and consider a fine needle aspirate.

Consider three view thoracic radiographs to rule out concurrent thoracic disease/involvement.



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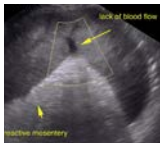
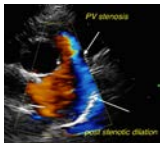
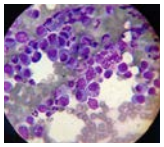
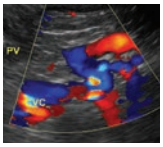

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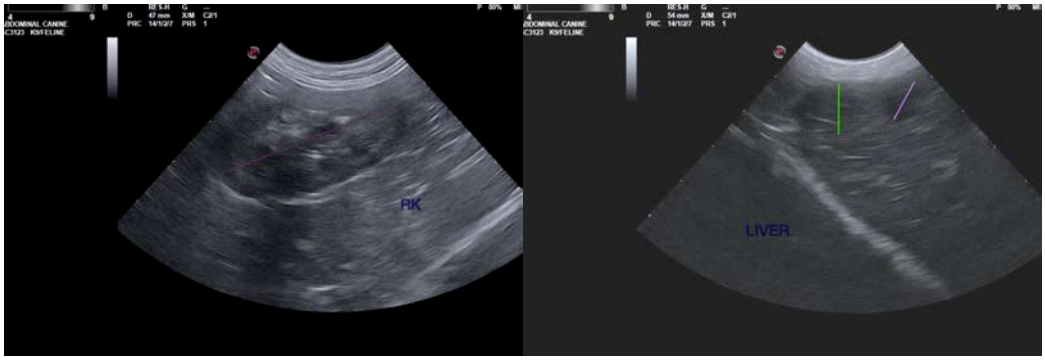


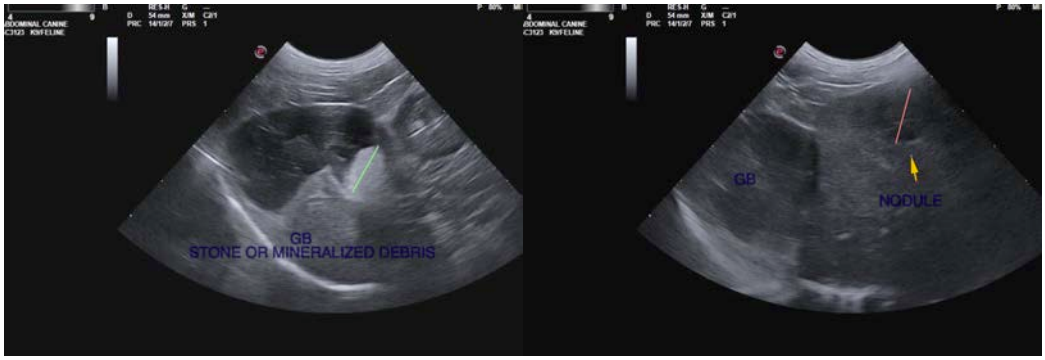


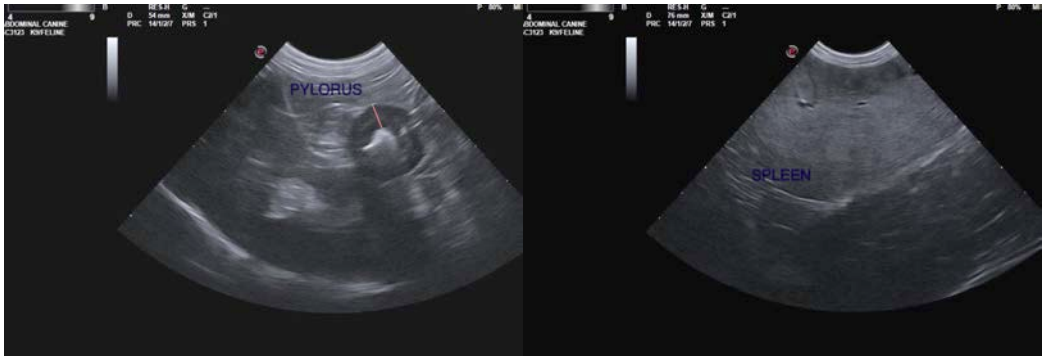


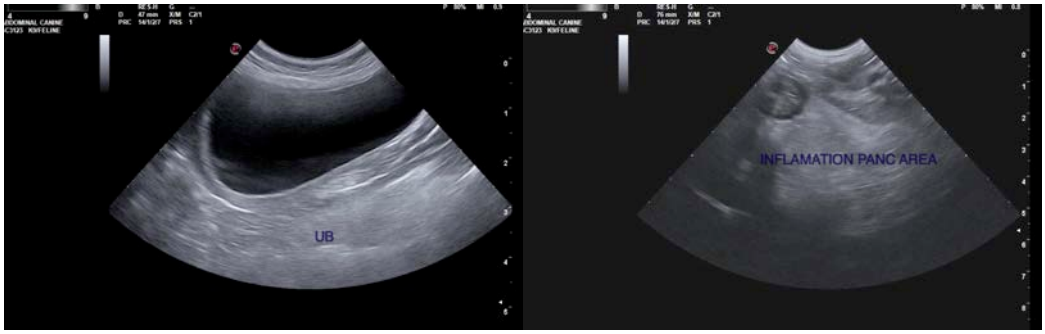

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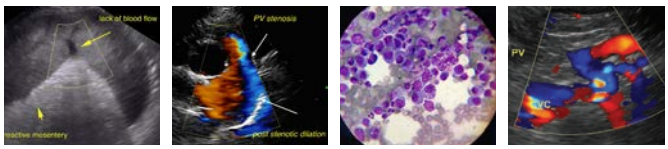

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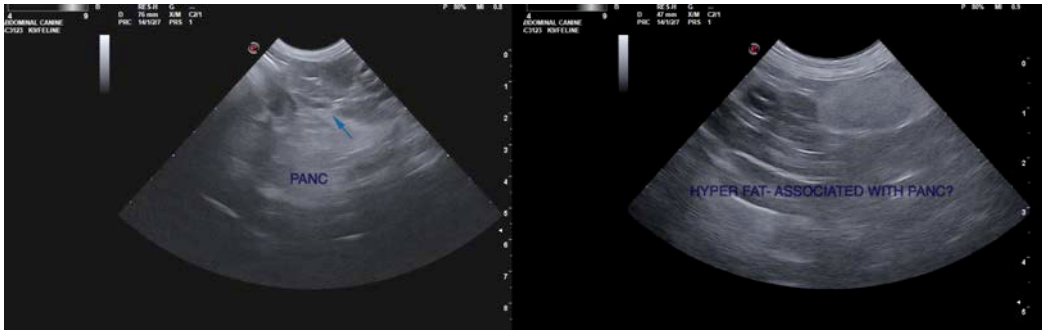


**The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.**

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.

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