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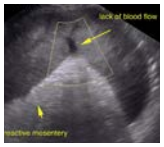
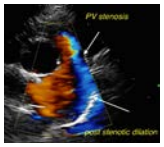
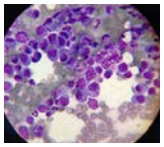
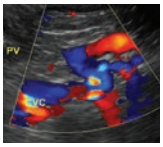

SonoPath.com
1-800-838-4268 info@sonopath.com

**PATIENT**

Buddy De Santis

**SPECIES**

Canine

**BREED**

Bichon X

**SEX**

Neutered Male

**AGE**

11 Years

**WEIGHT**

9.2 kg

**INTERPRETED BY**

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

**IMAGING PERFORMED BY**

Dr. Sarah Barthelemy

**HOSPITAL NAME**

Cranston Vet Hospital

**REFERRING VET**

Dr. Nielson

**INVOICE**

43516

**DATE**

6/28/23

## PRESENTING CLINICAL SIGNS

Chronic liver enzyme elevations which had gotten worse. Previous AUS on Oct 28/2022 suspected vacuolar hepatopathy and nodular hyperplasia. Started zentonil, ursodiol and because enzymes worsened starts empirical t therapy for hepatitis (clavaseptin, prednisone). Liver values improved but then developed diabetes mellitus and pancreatitis based on marked spec cpl elevation. Currently is on caninsulin 9 units BID, low fat diet. Has had continued weight loss despite recent labs showing good glycemic control with Fructosamine 316. ALT now increased again.

Abnormal PE/Chem/CBC/UA Results: ALT 3123 Elevations in ALP, AST, GGT as well.

## 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 prostate is normal in size (0.67 cm) and shape for this neutered male dog. The parenchyma is homogenous and the external margins are smooth. The prostatic urethra appears normal with no evidence of irregularity, invasion, mass effect or calculi.

The left kidney has a normal shape and size (4.63 cm). Overall echogenicity is slightly hyperechoic with mildly reduced corticomedullary distinction and a typical 1:3 cortex:medulla ratio. There is no evidence of focal 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 (5.16 cm). Overall echogenicity is slightly hyperechoic with poor corticomedullary distinction and a typical 1:3 cortex:medulla ratio. There is no evidence of focal 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 0.61 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 0.49 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 and the echotexture is homogenous. The splenic capsule is smooth with no visible irregularities. Rare discrete focal hyperechoic, perivascular parenchymal abnormalities are present. The appearance of these lesions is most consistent with benign splenic myelolipomas. The blood flow through the hilus and splenic parenchyma appears normal.

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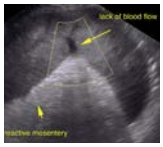
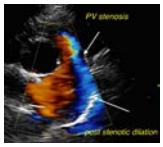
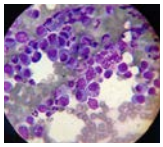
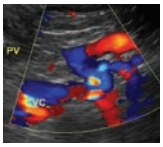

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## *Liver*

The liver is large in size with smooth peripheral margins. The parenchyma is hyperechoic and homogenous in echotexture. The visible portions of the vasculature and biliary tract appear normal. No focal nodules or cystic lesions are observed.

The gallbladder lumen is moderately distended. The wall of the gall bladder is not thickened and has a smooth mucosal surface. There is dependent shadowing mineralization present, most consistent with sandy debris and small stones. The cystic and common bile ducts are normal/not visible.

## *Gastrointestinal*

The stomach contains mild fluid. 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. No masses or focal lesions were observed.

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. Duodenum wall measures 0.38 cm. Jejunum wall measures 0.34 cm. 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 left limb of 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*

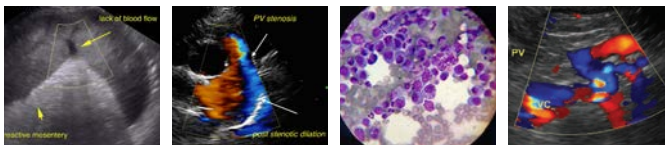
Evaluation of the peritoneal cavity did not reveal any evidence of effusion, or subjective lymphadenomegaly. The Medial iliac nodes appear normal and there was no evidence of a caudal aortic thrombus at the bifurcation. The omentum is of normal uniform echogenicity.

## PRIMARY FINDINGS

- Focal areas of pancreas that are hypoechoic and surrounded by hyperechoic mesentery in the left limb – 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.

- Large hyperechoic liver – The diffuse hepatic changes are non-specific and can be seen with vacuolar hepatopathy, reactive change, nodular hyperplasia or, less likely, inflammatory/immune-mediated disease, infiltrative neoplasia, or other hepatopathy.

- Mineralized sandy debris/small stones visualized in the gallbladder – Findings could be consistent with chronic inflammation.



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## SECONDARY FINDINGS

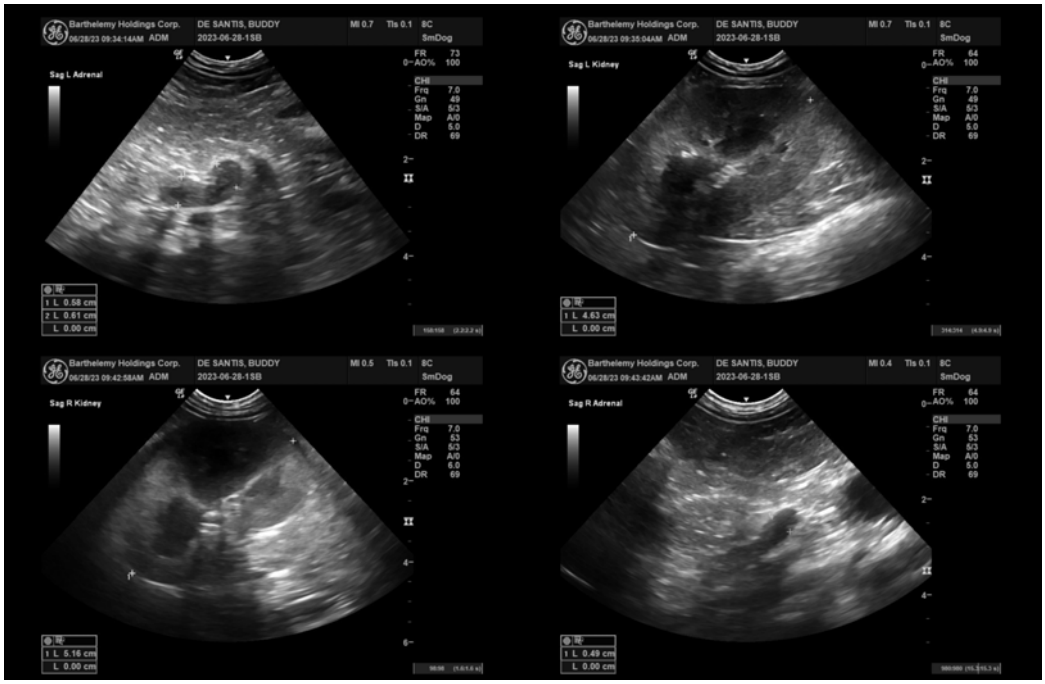
- Decreased corticomedullary distinction in both kidneys – The bilateral renal findings are consistent with age-related change.
- Hyperechoic foci/nodules visualized in the spleen – Findings are most consistent with benign myelolipomas.

## INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

No focal lesions are visualized associated with the liver, which remains large and hyperechoic. Given the history, this appearance would be consistent with steroid hepatopathy and a diabetic hepatopathy. Additionally, there is some mineralized debris in the gallbladder, which could be consistent with chronic inflammation or could be incidental at this time.

There are some focal areas of the left limb of the pancreas that appear somewhat irregular, mottled, hypoechoic, and have reactive mesentery surrounding, consistent with mild pancreatic inflammation. Recommend treatment for pancreatitis and continued monitoring of these regions for any progression.

It is difficult to make recommendations, as a primary diagnosis for the elevation of liver enzymes is not 100% clear, and now with the steroid therapy and diabetes there will be liver enzyme elevations associated with these metabolic issues. Consider tapering off the steroids and at least initial management of the diabetes, which will likely change once off steroids. You could consider Ursodiol therapy and Denamarin in the meantime. If liver enzymes do not significantly improve by taking these measures, then consider a liver function test, a liver biopsy (for histopathology, copper levels, and cultures) as well as Leptospirosis screening (once off steroids for at least 3-6 weeks). If immunosuppression is warranted based on biopsy results, then consider an alternative immunosuppressant to steroids, which will have less of a negative effect on the diabetes.



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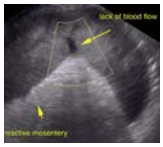
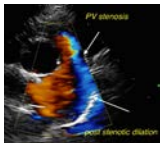
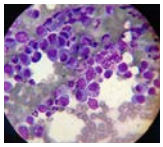
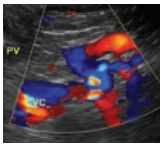

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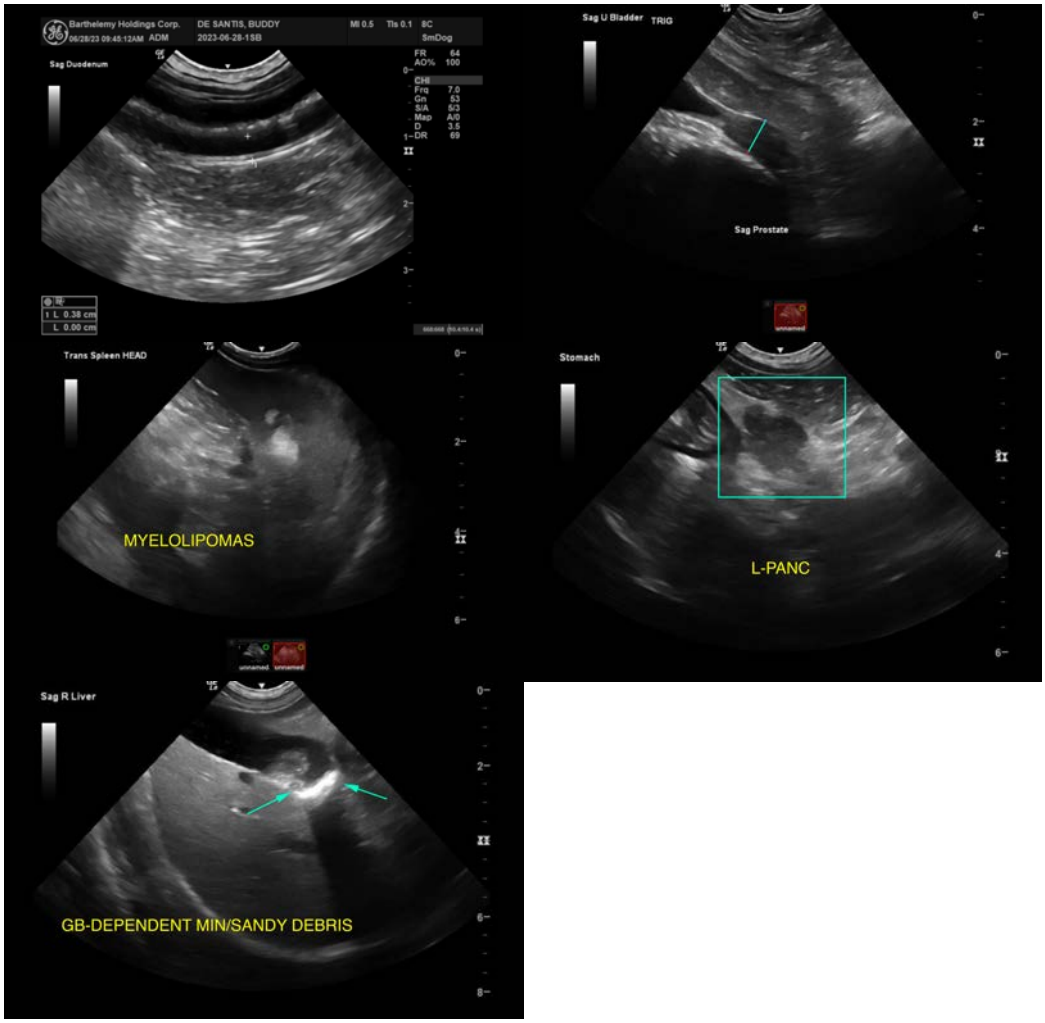


**The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.**

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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