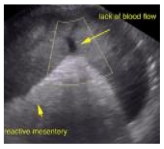

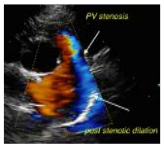

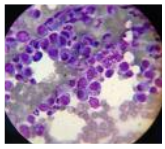
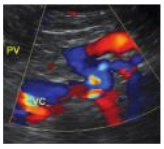


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**PATIENT**

Sammy Boncori

**SPECIES**

Canine

**BREED**

Shih Tzu

**SEX**

MN

**AGE**

11 yr

**WEIGHT**

14.3 lbs.

**INTERPRETED BY**

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

**IMAGING PERFORMED BY**

Crystal Hill

**HOSPITAL NAME**

Hillview Vet Clinic

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Dr. Stevenson

**INVOICE**

14803

**DATE**

9/1/22

## PRESENTING CLINICAL SIGNS

Went to NVEC on August 27/22-presented with bloody discharge from the anal glands. Having diarrhea on and off for the previous 2 weeks. He was lethargic the night before and owner feels he has a fever. diagnosed wth heart murmer 6 months previously. Exam: slightly tense on abdominal palpation. Left anal gland looks infected and oozing pus and blood. Small mass 1cm sq 12 oclock of the anus. DDX: anal gland rupture. Did bloodwork. August 29/22-Dog is now whimpering possibly in pain. O unsure if needs to take back to NVEC. Diarrhea on and off for this week. Fever. O would like to have an abdominal ultrasound. Clavaseptin 50mg-2 tablets BID for 10 days. Buprenorphine .02mg/kg-PO BID for 4 days. Gabapentin 50mg tablets PO TID for 5 days. Denosyl 90mg PO BID for 15 days.
Abnormal PE/Chem/CBC/UA Results: labwork NVEC Aug 27/22- Decreased MCV, MCH, reticulocytes reticulo-hcb elevated, mild neutrophilia and monocytosis, elevated MPV and PCT. Slightly elevated TP and globulin. Severely elevated alkphos>2000, slightly eleveted GGT. Elevated cholesterol.

## 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 (0.86 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 (4.32 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 (4.17 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.

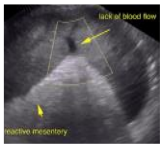
### *Adrenal Glands*

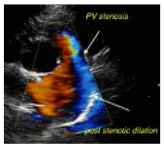
The left adrenal gland is normal in size measuring 0.75 cm at the caudal pole. It is observed in its normal position cranial to the left renal artery. It is normal in appearance (uniformly hypoechoic) and shape with no evidence of a mass effect.

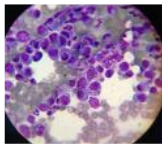
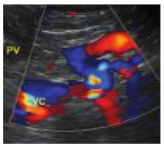
The right adrenal gland is normal in size measuring 0.58 cm at the caudal pole. It is observed in its normal position between the cranial aspect of the right kidney and the caudal vena cava. It is normal in appearance (uniformly hypoechoic) and shape with no evidence of a mass effect.

### *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



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normal. There are too numerous to count pinpoint hyperechoic foci distributed throughout the parenchyma, most consistent with small mineralizations.

### *Liver*

The liver is subjectively large in size with smooth peripheral margins. The parenchyma is hyperehoic and homogenous in echotexture. The visible portions of the vasculature and biliary tract appear normal. There is an approximately 1.0 cm x 1.0 cm hypoechoic nodule with a small cystic region visualized within the parenchyma. The gall bladder lumen is significantly distended. Some areas of the wall appear mildly thickened with adherent debris. There is a large amount of primarily non-organized echogenic debris. There is no evidence of bile duct dilation.

### *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. No masses or focal lesions were observed.

The visualized areas of duodenum, jejunum and ileum have a uniform diameter with minimal fluid distension. Wall appears subjectively, mildly increased. Bowel loops follow a typical curvilinear path with distinct wall layering. Visualized peristalsis appears appropriate. There were no focal lesions consistent with obstruction or a mass effect observed. There is mild mucosal speckling in the duodenum. The duodenum wall width measured 0.47 cm. The jejunum wall width measured 0.38 cm.

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 area of 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*

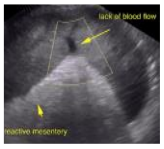
Evaluation of the peritoneal cavity did not reveal any evidence of effusion, or subjective lymphadenomegaly. The Medial iliac nodes appear normal and there was no evidence of a caudal aortic thrombus at the bifurcation. The omentum is of normal uniform echogenicity.

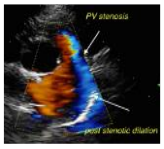
### *Other*

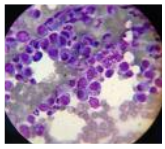
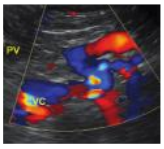
A brief view of the heart was submitted. No pericardial effusion was seen.

## ULTRASONOGRAPHIC FINDINGS

- Large, hyperechoic liver with a small hypoechoic lesion - 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. The lesion observed could represent a benign or an early neoplastic lesion. The appearance trends towards benign lesion, but is slightly cystic. Recommended continued monitoring.



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- Large gallbladder debris - A large amount of debris is evident in the gall bladder with no evidence of a mucocele or associated inflammation at this time. This could represent an early mucocele or cholestasis, with minimal evidence of associated inflammation at this time. Continued monitoring of labwork and ultrasound are warranted for progression of this lesion. Ursodiol therapy could be considered.

- Subjectively thickened small intestine with mild mucosal speckling - Bright mucosal speckling has been postulated to represent dilated lacteals or focal accumulations of mucus, cellular debris, etc.. in the mucosal crypts.

## INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

An obvious lesion responsible for the pain and fever reported is not visualized. The liver Is large and hyperechoic with a small hypoechoic nodule and the gallbladder has a large amount of debris. These are likely responsible for the elevation in ALP reported. Consider starting chronic Ursodiol therapy and continuing to monitor the gallbladder for progression of this lesion. There are my recommendations for further evaluation of an ALP elevation. An elevation in ALP is a common finding. In general, however, causes of ALP elevation fall into three primary categories:

Induction phenomena, biliary diseases, and primary liver disorders.

- Induction phenomena are the most common. These are systemic illnesses that 'turn on' the liver enzyme. Causes of this include Cushing's disease, dental disease, arthritis, and numerous others. In many cases the exact cause is unclear but as long as ultrasound and bile acids tests are normal most patients do not have progressive changes in their liver. While liver biopsy is not routinely performed, vacuolar hepatopathy, is noted on most biopsies. This is often non-progressive but in rare cases can be more severe and lead to liver failure.

- If signs of cushings disease are present recommend endocrine function testing to evaluate for cushings disease.

- Consider fine needle aspirate to rule out round cell neoplasia -if this is a concern.

- If a cause for the ALP elevation is not identified: I recommend recheck general blood work every 6 months, ultrasound once per year, and bile acids test every 1-2 years based on other results. If the ALP continues to climb a biopsy could be considered.

- Consider long term use of denamarin, and monitoring for the signs of cushings developing.

The bowel appears to be subjectively thickened and there is mild mucosal speckling. This could relate to the diarrhea reported. Consider workup for underlying GI disease if the diarrhea is persistent.

- A primary vacuolar hepatopathy can be breed related and is seen in Scottish Terriers, Schnauzers, Cocker spaniels etc.

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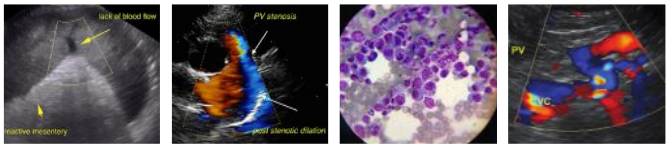


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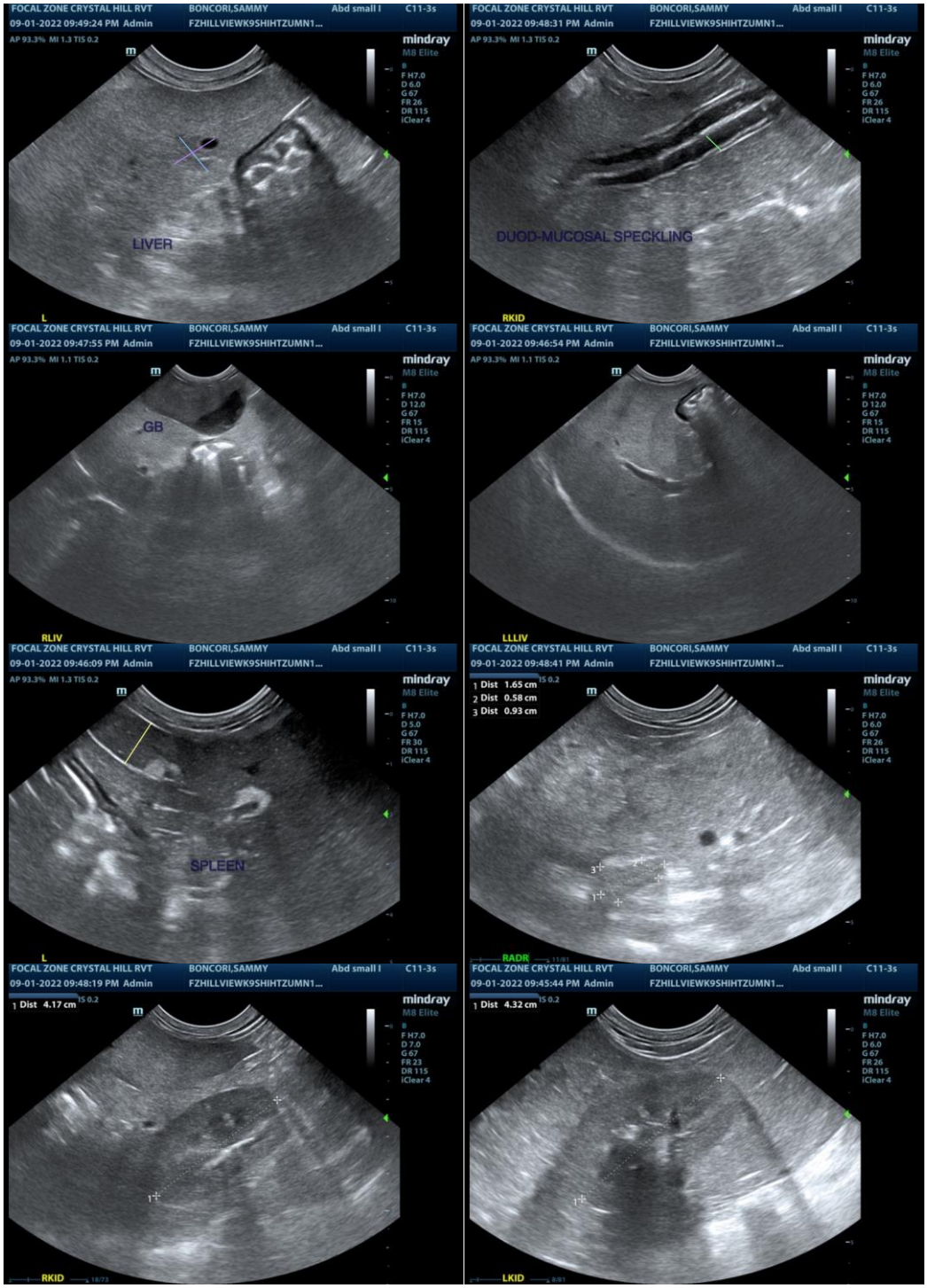

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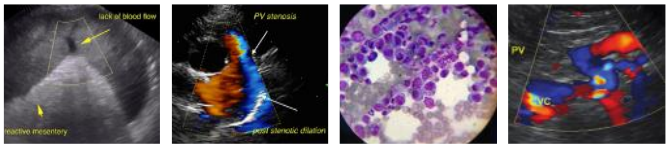


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**The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.**

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.

Kathleen Sennello DVM,MS, Diplomate ACVIM (Small animal Internal Medicine)
kathleen.sennello@sonopath.com