

**PATIENT**Stewart
Last Day Dog Rescue**SPECIES**

Canine

BREED

Pit Bull X

SEX

Neutered Male

AGE

9.5 Years

WEIGHT

88 Pounds

INTERPRETED BYKathleen Sennello DVM,
MS, Diplomate ACVIM
(Small Animal Internal
Medicine)**IMAGING PERFORMED BY**

Amy Mayhew, LVT

HOSPITAL NAME

SVS Imaging MI

REFERRING VET

Union Lake VH

INVOICE

38582

DATE

6/9/22

PRESENTING CLINICAL SIGNS

Decreased appetite past several weeks. Stewart has dog reactivity, storm phobia and separation anxiety. Won't take his anxiety meds without putting them in food.

Abnormal PE/Chem/CBC/UA Results: Elevated alpk-has increased significantly since Sept 2021. Bowlegged from bilateral cruciate tears. Hypothyroid--on daily meds. Cardiac and abdominal ultrasound done at MedVet Commerce-noted bilateral adrenomegaly, mild mitral valve regurg, small liver nodule noted along with several small calculi in bladder. LDDS test normal. **Please see attached reports for comparison

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, or masses. In the dependent portion of the urinary bladder, there is a string of hyperechoic shadowing foci, most consistent with small stones or sandy debris.

The prostate is normal in size (0.96 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 (7.88 cm). 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, nephroliths, infarcts or hydroureter. Renal vasculature is normal.

The right kidney has a normal shape and size (7.86 cm). 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, nephroliths, infarcts or hydroureter. Renal vasculature is normal.

Adrenal Glands

The left adrenal gland is normal/borderline large in size measuring 1.08 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 0.78 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 are occasional hyperechoic foci visualized within the splenic parenchyma. Most of these have the appearance of a myelolipoma. Towards the tip of the spleen, there is a hyperechoic nodule that deforms the architecture slightly, measuring 1.21 cm.

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. An ill-defined, subtle hyperechoic nodule is visualized within the hepatic parenchyma measuring 1.8 cm (stable from previous measurement).

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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. These changes can be consistent with an early gall bladder mucocele.

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. Duodenum wall measured 0.50 cm Jejunum wall measured 0.42 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 pancreas is prominent and mottled compared to the surrounding isoechoic 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. There are occasional prominent mesenteric lymph nodes, one measured 0.66 cm. The omentum is of normal echogenicity.

PRIMARY FINDINGS

- Small stones/sandy debris in the dependent portion of the urinary bladder – recommend urinalysis and culture.
- Hyperechoic foci visualized in the spleen with a more definitive hyperechoic nodule – The hyperechoic lesions primarily have the appearance of myelolipomas. The hyperechoic nodule towards the tip of the spleen is slightly different and should be aspirated.
- Large, heterogeneous liver with ill-defined hyperechoic nodule – 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 hyperechoic nodule visualized trends towards a benign appearance and has not changed since the last ultrasound evaluation.
- Moderate to large gallbladder debris with adherence to the gallbladder wall – There is no evidence of surrounding inflammation or wall thickening, but the material is adhering to the gallbladder wall. Consider starting Ursodiol and continued monitoring.
- Subjective small intestinal thickening – The mild small intestinal wall changes may be a normal variant in this patient or could be consistent with an inflammatory process (e.g., inflammatory bowel disease).
- Occasional visible/prominent mesenteric lymph nodes – The prominent abdominal lymph nodes are most consistent with reactive lymphadenitis or lymphoid hyperplasia. Neoplastic infiltration is considered less likely.

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SECONDARY FINDINGS

- Decreased corticomedullary distinction in both kidneys – The bilateral renal findings are consistent with age-related change.
- Prominent, mottled pancreas – The pancreatic changes are most consistent with age-related parenchymal remodeling, potentially secondary to a prior inflammatory episode, early fibrosis or chronic pancreatitis.

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

There are no prominent focal lesions visualized that would be definitely responsible for the decrease in appetite noted.

The liver is large and heterogeneous, but the adrenals are mostly normal in size, possibly “plump”. If Cushing’s disease is strongly suspected, you could consider an adrenal panel with ACTH stimulation test to the University of Tennessee to look for the production of non-cortisol hormones such as 17-hydroxyprogesterone, etc. (i.e., atypical Cushing’s). These are my recommendations for a dog with elevation in ALP:

- Induction phenomena are the most common cause for an elevation in ALP. 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.
- A primary vacuolar hepatopathy can be breed related and is seen in Scottish Terriers, Schnauzers, Cocker spaniels etc..

There are sandy debris/small stones visualized in the urinary bladder. Correlate with abdominal radiographs and recommend urinalysis and culture.

The hyperechoic foci visualized in the spleen largely have the appearance of benign myelolipomas. There is a focal nodule, which is somewhat subtle, towards the tip of the spleen, which appears to deviate the vasculature somewhat. Consider a fine needle aspirate of this lesion.

There is a moderate amount of gallbladder debris visualized within the lumen of the gallbladder. This is starting to adhere to the wall. There is no surrounding inflammation at this time, but you could consider starting Ursodiol as a preventative measure, and continue to monitor the gallbladder with ultrasound.

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

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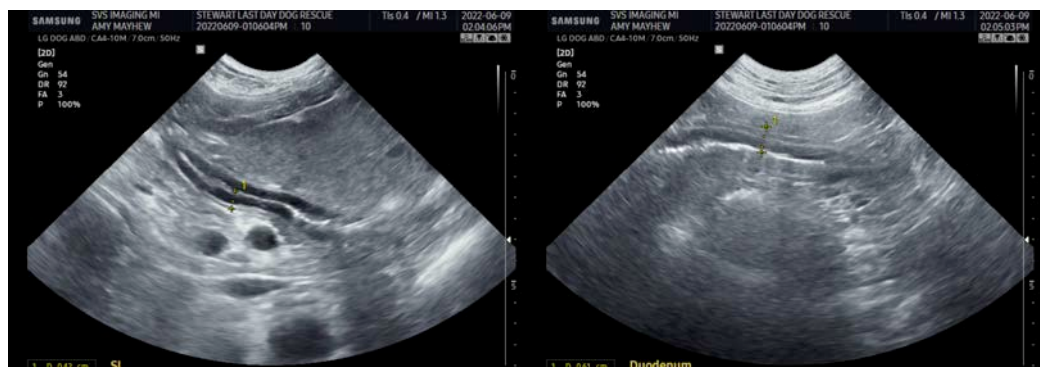
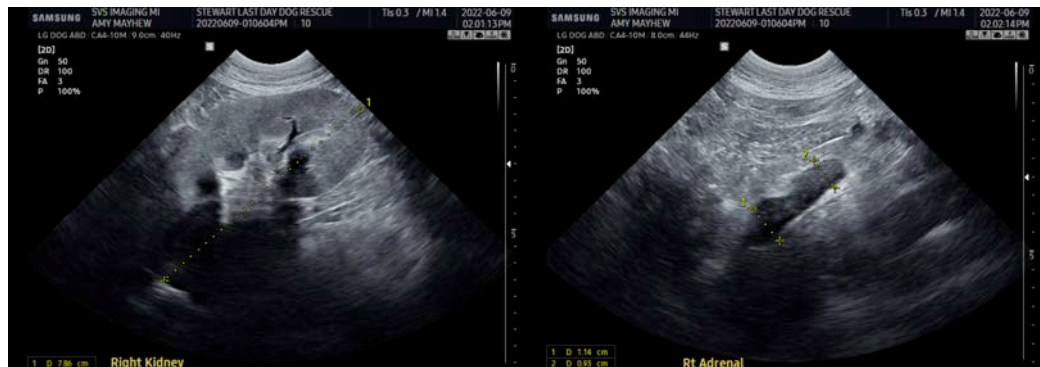
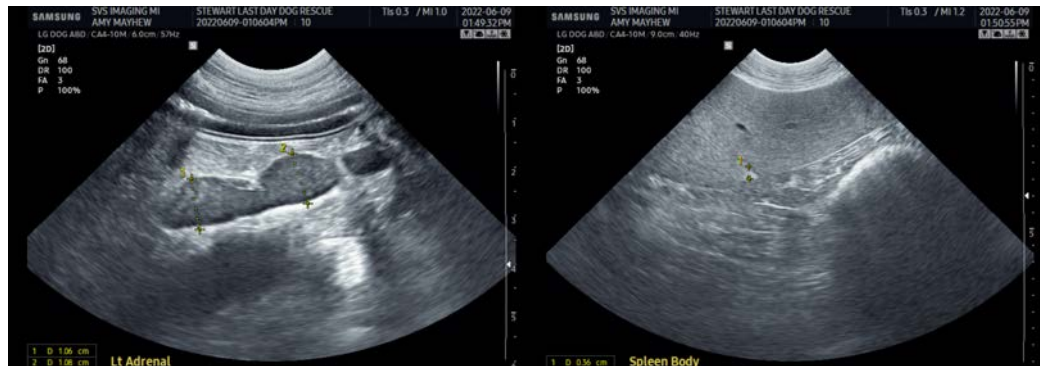
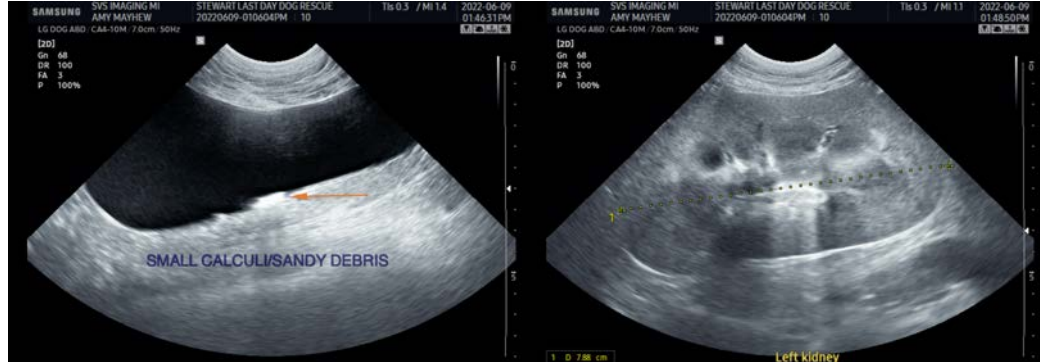
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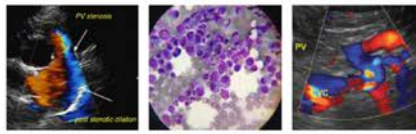
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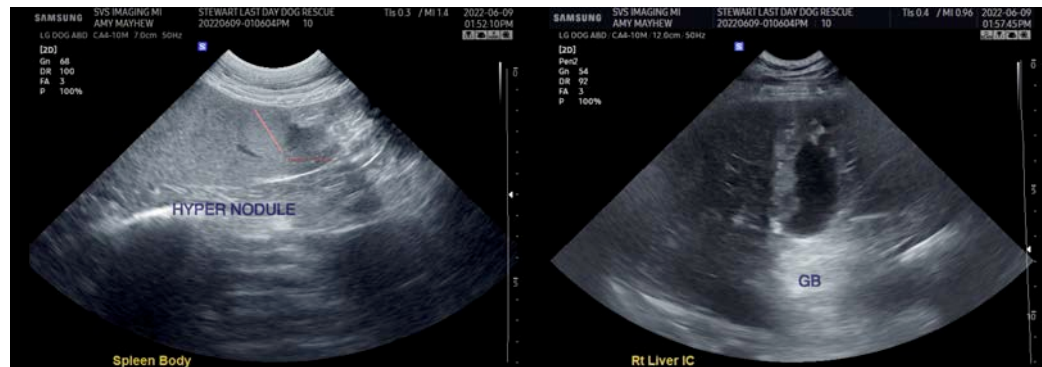
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The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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.

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

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