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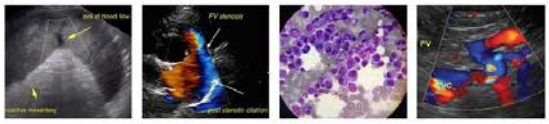

IMAGING PERFORMED BY
pawsonography@gmail.com 530-786-8340

PATIENT

Katie Burritt

SPECIES

Canine

BREED

Mini Schnauzer

SEX

Spayed Female

AGE

13 Years

WEIGHT

12.7 Pounds

INTERPRETED BY

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

IMAGING PERFORMED BY

Loetitia Saint-Jacques, RVT

HOSPITAL NAME

North Hills VC

REFERRING VET

Dr. David Bagget

INVOICE

33966

DATE

1/4/22

PRESENTING CLINICAL SIGNS

Elevated ALKP- AUS for liver/GB- General Appearance R lat rib cage fatty deposit underneath right ear another fatty deposit Skin/Hair Coat bumps all over trunk, dry flaky skin Mouth/Oral stage 1/4 tartar Heart IV/VI murmur Lungs harsh lung sounds bilateral Musculoskeletal TL junction slight pain noted on palpation
Abnormal PE/Chem/CBC/UA Results: BP:150 154 168 170 Echo being done as well, LABS: CREA 1.1 BUN 39] BUN/CREA 35 TP 8.8 ALB 3.8 GLOB 5.0 ALB/GLOB 0.8 ALT 120 ALKP 1462

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 (4.24 cm) with numerous non-obstructive nephroliths and mild pyelectasia at 0.21 cm. Overall echogenicity is slightly hyperechoic with mildly reduced corticomedullary distinction and a typical 1:3 cortex:medulla ratio. There is no evidence of perinephric inflammation or effusion. There is no evidence of infarcts or hydroureter. Renal vasculature is normal.

The right kidney has a normal shape and size (4.4 cm) with small, non-obstructive nephroliths. Overall echogenicity is slightly hyperechoic with mildly reduced 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 left adrenal gland is normal in size measuring 0.55 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 0.55 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.

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. No focal nodules or cystic lesions are observed.

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.

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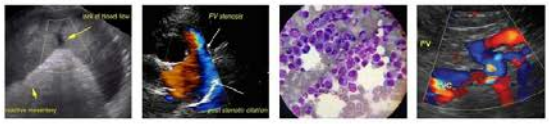

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Gastrointestinal

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. 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 0.45 cm. Jejunum wall measured 0.42 cm. there is some mucosal speckling evident. 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 hypoechoic as 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, 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

- Large, distended gallbladder with early organization of gallbladder sludge – consistent with an early gallbladder mucocele.
- Hypoechioc, prominent pancreas – The pancreatic changes are most consistent with mild pancreatitis or a recent episode of pancreatic inflammation.
- Large, heterogeneous liver – 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.
- Mildly reduced corticomedullary distinction in both kidneys with non-obstructive nephroliths and left-sided pyelectasia – 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. Pyelectasia of the left kidney could be consistent with pyelonephritis, chronic renal disease, secondary to PU/PD or fluid therapy (if applicable), other.
- Subjectively thickened small intestine with some mucosal speckling – Bright mucosal speckling has been proposed to represent dilated lacteals or focal accumulation of mucus, cellular debris etc.. in the mucosal crypts of the small intestine.

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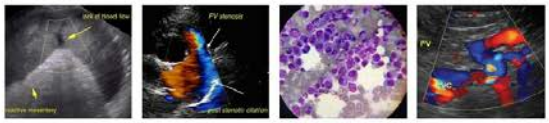

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SECONDARY FINDINGS

- Hyperechioc foci within the spleen – most consistent with benign myelolipomas.
- Shadowing material within the gastric lumen – most consistent with ingesta. Correlate with feeding history.

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

No focal lesions are visualized within the liver. the gallbladder is distended and there is early organization of the debris within, consistent with an early mucocele. There is no surrounding inflammation, so I do not think that surgery is currently necessary, but this should be monitored closely. Recommend starting Ursodiol, Denamarin, and a course of antibiotics (Clavamox 2-4 weeks ?).

Additionally, it is not uncommon for Schnauzers to have an elevation in ALP, as a vacuolar hepatopathy is common in the breed, and Cushing's disease is also a possibility. Below are my recommendations for patient with an elevated ALP and a normal gallbladder. In this case, these issues apply, but monitoring of the gallbladder is also highly recommended.

- Induction phenomena is the most common cause for 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.

Additionally, the pancreas is somewhat prominent. If symptoms of pancreatitis are present, consider a quantitative PLI. You could consider a GI panel to Texas A&M for a quantitative PLI, TLI, cobalamin and folate to further evaluate for small intestinal disease as well, as there is some evidence of mucosal speckling visualized.

The changes visualized in the kidneys are consistent with the reported early renal disease present. Blood pressure evaluation is an excellent plan along with a urine protein/creatinine ratio, urinalysis and culture.

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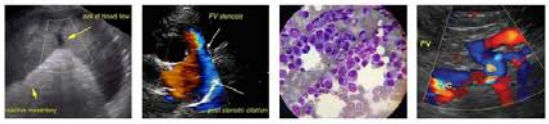

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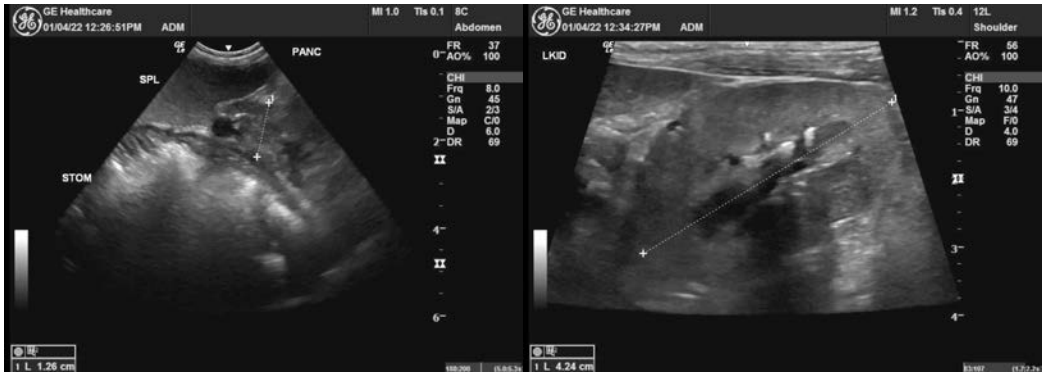

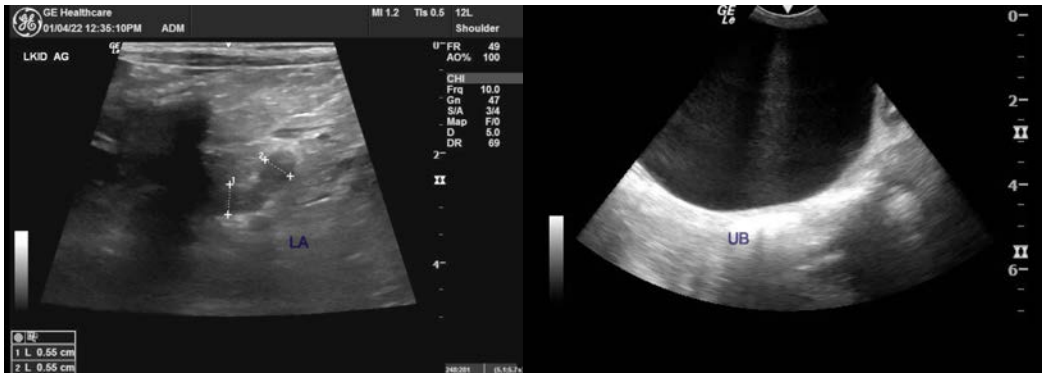

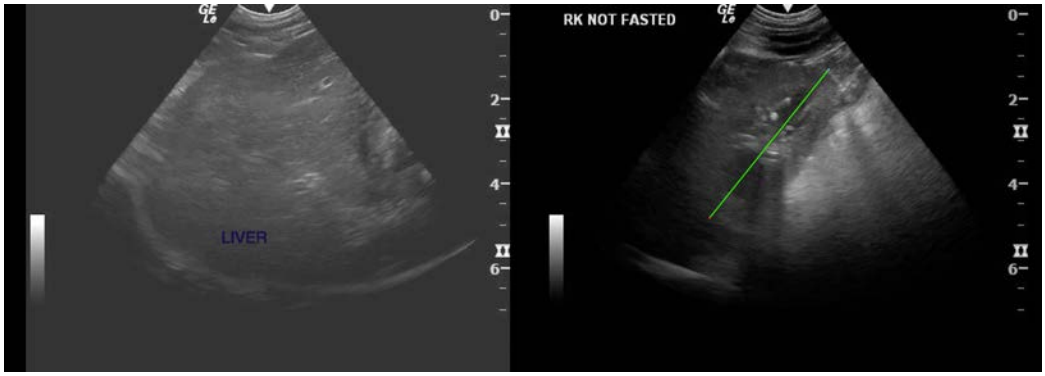

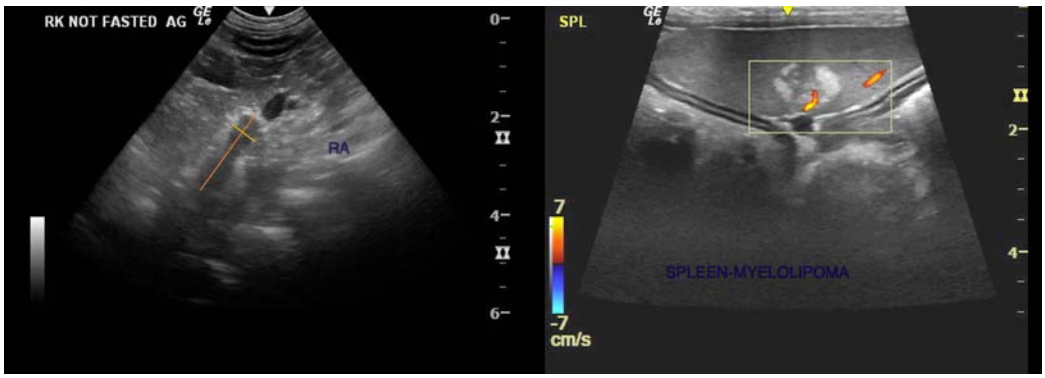

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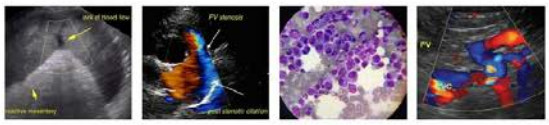

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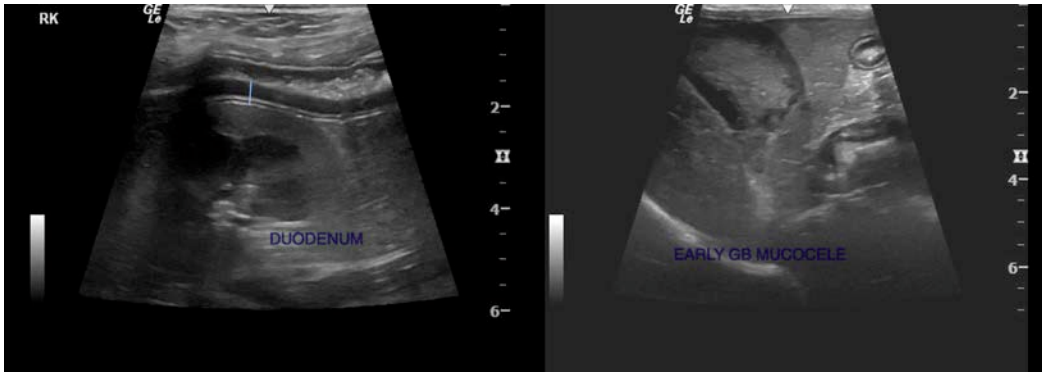

The information and recommendations provided are based on the images presented by the referring veterinarian. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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