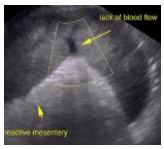
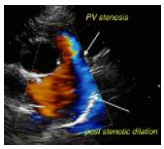
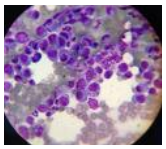
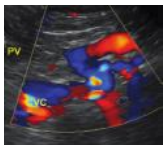
SonoPath
Clinical Sonography & Telecytology
EDUCATIONAL TELECONSULTATION SERVICES™

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

PATIENT
Jazz Keel

SPECIES
Canine

BREED
JRT

SEX
FS

AGE
12 yr

WEIGHT
20 lb

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

IMAGING PERFORMED BY
Dr. Sheldon

HOSPITAL NAME
Advanced Pet Care of Oakland

REFERRING VET
Dr. Sheldon

INVOICE
10683ag

DATE
05/26/2022

PRESENTING CLINICAL SIGNS

History: Has Paroxysmal SVT, VPCs, chronic degenerative valvular disease, left eccentric ventricular hypertrophy, pancreatitis, R TPLO, arthritis R carpus/L stifle, allergies, PLN. In the last 2 months she has started to have short seizures lasting about 20 sec. Will fall over and get stiff, sometimes will urinate or defecate. Current Medication (s) : Pepcid, Apoquel, Immunotherapy , Gabapentin, Pimobendan, Diltiazem, Propafenone, Enalapril, Metronidazole, Dasuquin, Fortiflora, Levothyroxine, Frontline & Sentinel, and Benadryl PRN, just started on 250 mg Keppra TID. Has neuro apt in july.

Abnormal PE/Chem/CBC/UA Results: Her bloodwork has had a mild elevation in ALP(549) for years but recently in last 2 months her ALP has increased to 1,738. Her HCT 2 months ago was 41 % and now it is 36%

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. 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 left kidney measured 4.8 cm in length.

The right kidney has a normal shape and size. 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 measured 5.39 cm in length.

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 right adrenal gland is normal in size measuring 0.63 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

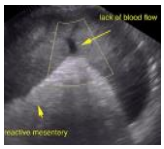
The spleen is subjectively normal in size, echotexture is homogenous, and the splenic capsule is smooth with no irregularities. The blood flow through the hilus and splenic parenchyma appears normal. There is a focal hyperechoic lesion visualized towards the head of the spleen measuring 1.18 cm. This lesion does not deviate the splenic capsule.

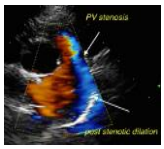
Liver

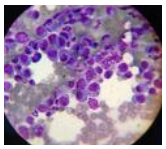
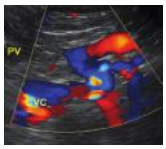
The liver is enlarged in size, and echogenicity with smooth peripheral margins. The parenchyma is heterogenous in echotexture with subtle, indistinct focal mottling. The visible portions of the vasculature and biliary tract appear normal. No focal nodules or cystic lesions are observed.

The gallbladder lumen is moderately distended. The wall of the gall bladder is not thickened and has a smooth mucosal surface. Luminal contents are primarily anechoic with mild debris adherent to the gallbladder wall. The cystic and common bile ducts are normal/not visible.

Gastrointestinal





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The stomach contains moderate ingesta. 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. 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 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.

ULTRASONOGRAPHIC FINDINGS

- 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.
- Hyperechoic foci/nodule in the spleen. The appearance of this lesion is most consistent with benign myelolipoma. Recommend continued monitoring.
- Moderate adherent gallbladder debris. This is a small amount of debris and is likely insignificant at this time but recommend continued monitoring for progression.
- Moderate ingesta within the gastric lumen. Correlate with feeding history. If patient was adequately fasted consider delayed gastric emptying or partial outflow tract obstruction.

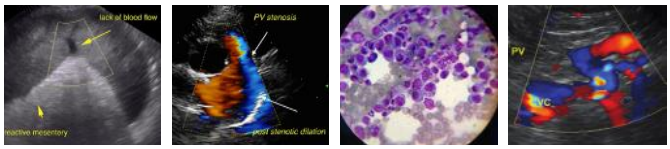
INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

No focal lesions are visualized in the liver and the gallbladder changes are very mild. The liver is large and heterogeneous which is consistent with the ALP elevation. I will list the recommendations below for a patient with a primary ALP elevation. In this patient particularly consider polypharmacy i.e. reactions to medications and consider that these episodes could be syncopal episodes and consider a Holter monitor to determine if an arrhythmia is present at the times of these episodes. Recommend BP evaluation.

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 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,



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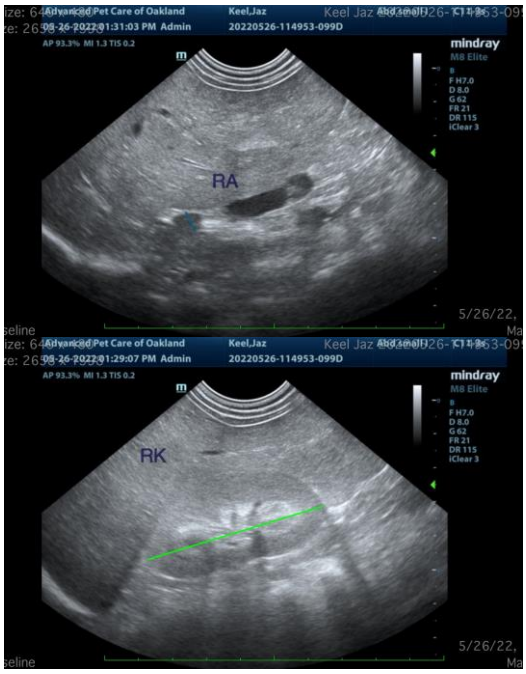
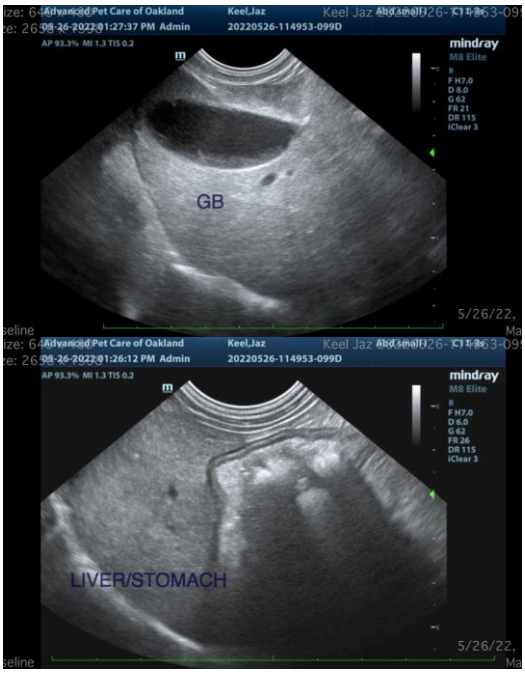
arthritis, and numerous others. In many cases the exact cause is unclear but as long as ultrasound and bile acids tests are normal most patients do not have progressive changes in their liver. While liver biopsy is not routinely performed, vacuolar hepatopathy, is noted on most biopsies. This is often non-progressive but in rare cases can be more severe and lead to liver failure.

- If signs of Cushing's disease are present recommend endocrine function testing to evaluate for Cushing's 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 Cushing's developing.
- A primary vacuolar hepatopathy can be breed related and is seen in Scottish Terriers, Schnauzers, Cocker spaniels etc.





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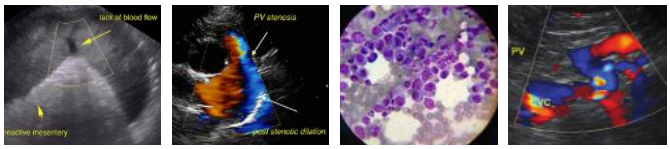

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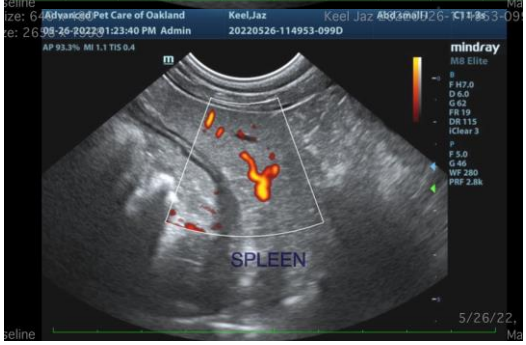

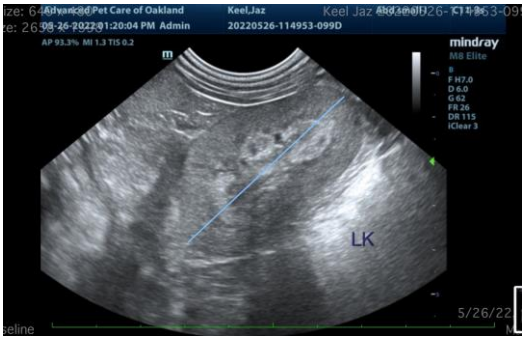

The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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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