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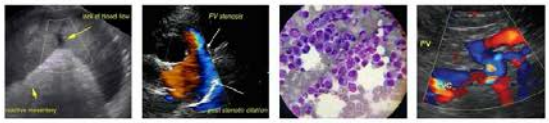


IMAGING PERFORMED BY
pawsonography@gmail.com 530-786-8340

PATIENT

Oreo Hale

SPECIES

Canine

BREED

Schnauzer

SEX

Neutered Male

AGE

12 Years

WEIGHT

32 Pounds

INTERPRETED BY

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

IMAGING PERFORMED BY

Loetitia Saint-Jacques, RVT

HOSPITAL NAME

Donner Truckee VH

REFERRING VET

Dr. Greg H

INVOICE

25175

DATE

9/3/21

PRESENTING CLINICAL SIGNS

Reason for Visit: Client Communication CBC/chem/T4: ALKP=526, Ca=12.3, and precision PSL=160, rest WNL. FT4ED pending. TTO and reported results. Patient doing well overall with good app and fair energy. No current V/D, though he does have intermittent vomiting. Still licking paws, but Apoquel and shampoo therapy just started. No overt PU/PD/PP or other signs of HAC. Consider iCa +/- PTH and AUS. LTL broken nail noticed this morning. Owner noticed patient was a little lethargic this morning, then noted the broken nail. Patient licking site. Patient also licks all 4 paws chronically over the last few months. Good app. No C/S/V/D. No other hx/meds. No travel since moving to Tahoe ~4 yrs ago.

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 (0.57 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 (5.37 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. Smaller cortical cysts noted. There is no evidence of pyelectasia, nephroliths, infarcts or hydroureter. Renal vasculature is normal.

The right kidney has a normal shape and size (5.07 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. Occasional small cortical cysts noted. There is no evidence of pyelectasia, nephroliths, infarcts or hydroureter. Renal vasculature is normal.

Adrenal Glands

The left adrenal gland is normal/plump in size measuring 0.72 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.

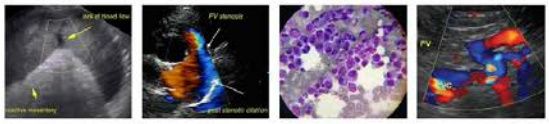
The right adrenal gland is normal in size measuring 0.66 cm at the caudal pole. It is observed in its normal position between the cranial aspect of the right kidney and the caudal vena cava. It is normal in appearance (uniformly hypoechoic) and shape with no evidence of a mass effect.

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. No focal parenchymal abnormalities are visualized.

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. There is a very small 0.34 cm cyst visualized in the parenchyma.



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The gall bladder lumen is moderately distended. The wall of the gall bladder is not thickened and has a smooth mucosal surface. There is a moderate amount of non-organized echogenic debris. The cystic and common bile ducts are normal/not visible.

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 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 measured 0.48 cm. Jejunum wall measured 0.36 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, 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.

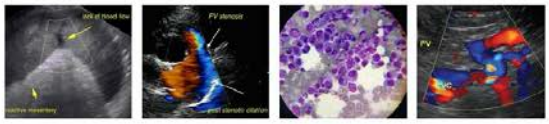
Other

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

Views of the cervical region were evaluated. Images of the left and right thyroid area appear relatively unremarkable. The left side is normal. The right side has a small hypoechoic nodule measuring 0.26 cm x 0.12 cm. This could be a normal parathyroid gland or the vessel. It is difficult to tell without color flow, but this would be normal size for a parathyroid gland.

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.
- Prominent, mottled pancreas – The pancreatic changes are most consistent with mild pancreatitis or a recent episode of pancreatic inflammation.
- Decreased corticomedullary distinction in both kidneys with occasional small cortical cysts – Mild loss of corticomedullary distinction in both kidneys could be consistent with chronic degenerative disease or interstitial nephrosis.



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- Moderate gallbladder sludge – The significance of the aggregated gallbladder sludge is unclear. This could represent an early mucocele, cholestasis, or may be secondary to fasting.

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

A moderate ALP elevation is a very common finding in Schnauzers, most commonly due to underlying Cushing's disease or a vacuolar hepatopathy. No focal lesions were observed. The gallbladder sludge was mild. Continued monitoringis recommended, but I don't think it is significant at this time.

The pancreas is somewhat prominent, which could be due to mild current pancreatitis or previous episodes. Consider a quantitative PLI level to obtain more information. Additionally, both kidneys have changes consistent with chronic progressive disease (likely age related). Consider blood pressure and urinalysis and culture if azotemic or not concentrating urine.

The thyroid glands are imaged and I do not see evidence of an enlarged parathyroid gland. I still recommend a PTH ionized calcium and PTHrP level, as this will be helpful in determining if the hypercalcemia is due to renal disease, hyperparathyroidism (seems unlikely), or could be neoplastic. Recommend rectal exam to evaluate the anal glands, and a thorough oral exam to look for any oral masses.

These are my recommendations and thoughts when evaluating a dog for elevated ALP:

- 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, as this can be a differential for hypercalcemia (if other causes are not found).
- 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..

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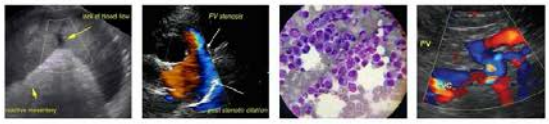

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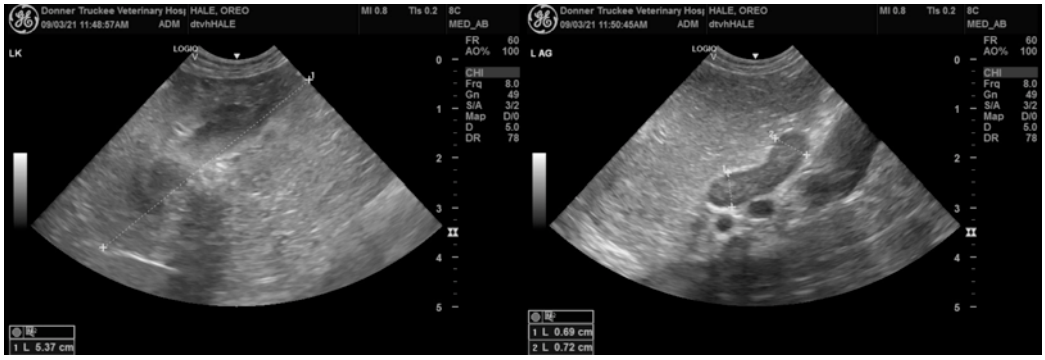

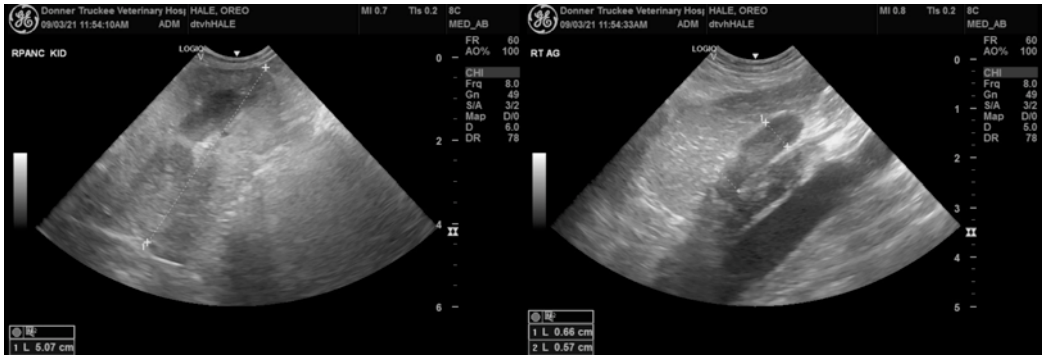

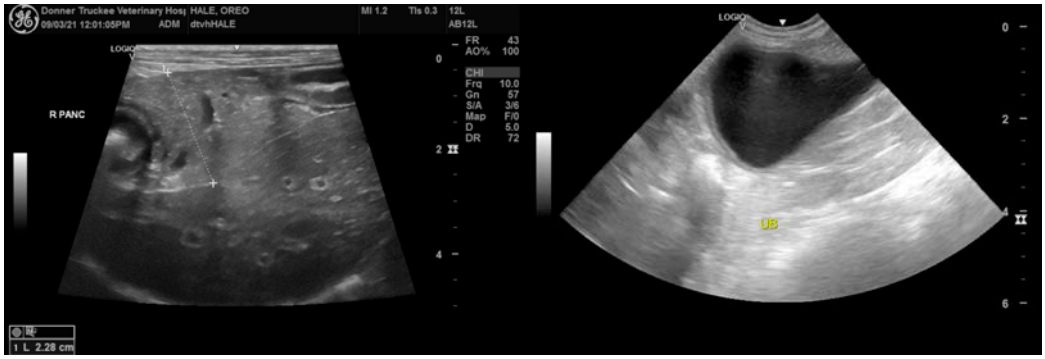

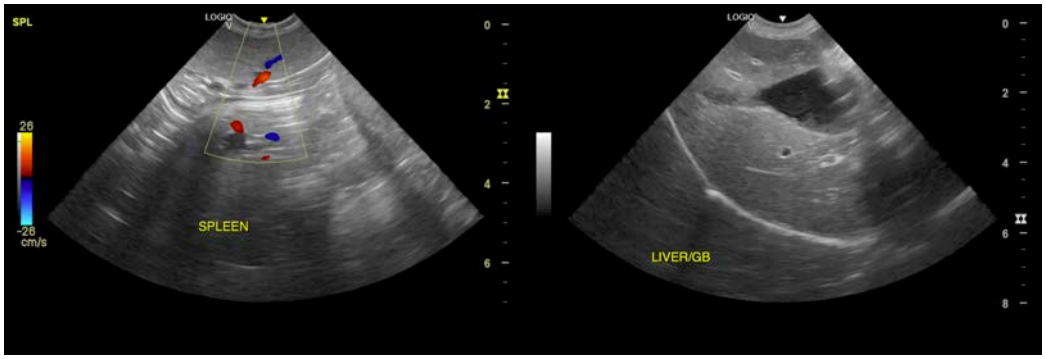

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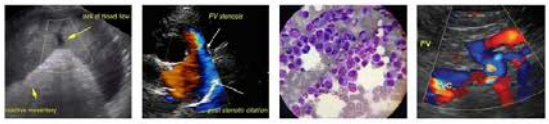

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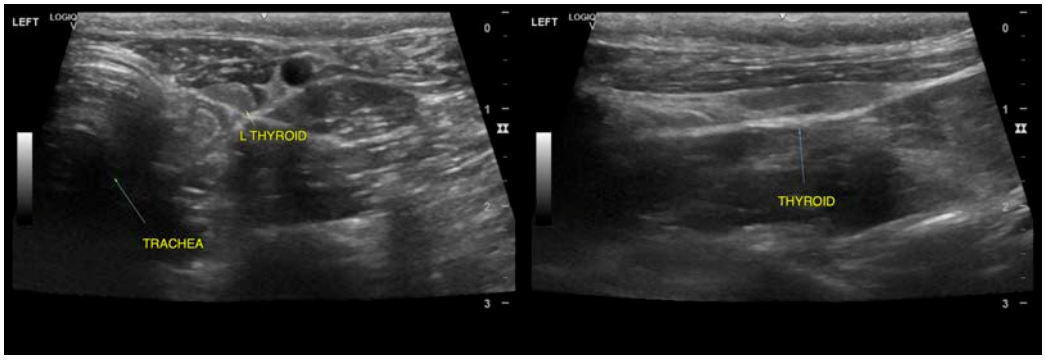

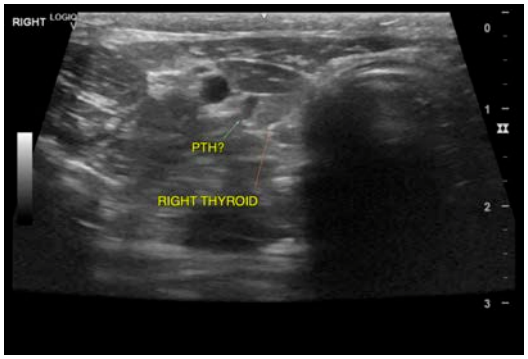

The information and recommendations provided are based on the images presented by the referring veterinarian. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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.

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