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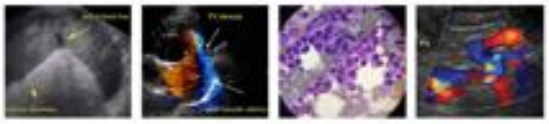

IMAGING PERFORMED BY
pawsonography@gmail.com 530-786-8340

PATIENT
Dancer Watson

SPECIES
Canine

BREED
German Shepherd

SEX
Spayed female

AGE
7 years

WEIGHT
69.5 lbs

INTERPRETED BY
Eric Lindquist, DMV DABVP, Cert. IVUSS

IMAGING PERFORMED BY
Loetitia Saint-Jacques, LVT

HOSPITAL NAME
Sierra Pet Clinic

REFERRING VET
Dr. Fagundes

INVOICE
76334

DATE
7/31/23

PRESENTING CLINICAL SIGNS

ALT elevated- r/o liver disease- No c/s/v/d, e/d well, no other concerns. Denamarin 2 tablets PO SID, but ALT continues to rise-Sedation Dexdomitor and butorphanol IV- Assessment: Hypothyroidism (adjusted meds), Elevated ALT (Open), Perio Dz. R/O: Infectious, Inflammatory, Toxic, Neoplasia, Vascular Anomaly, Metabolic, etc.
Abnormal PE/Chem/CBC/UA Results: Results: TT4 4.6 ug/dL WNL's ALT 399 U/L- Moderately Elevated. Previously 174 U/L. Rx:Levothyroxine 0.3mg PO BID LABS attached

ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN

Urinary System

The **urinary bladder**, trigone, and pelvic urethra presented normal thicknesses and normal tone. The ureters were not visible which is normal. No uroliths or sediment were visualized and anechoic urine was present. No evidence of inflammatory or neoplastic changes was noted. Ureteral papillae were normal.

The **kidneys** revealed normal size and structure, corticomedullary definition and ratio for this age. The cortices presented largely uniform texture with normal echogenic relationship to liver and spleen. Medullary structure differed distinctly from the cortex and no evidence of pelvic dilation was present. The capsules were acceptably uniform without significant irregularities.

Adrenal Glands

The right **adrenal gland** was visualized and recognized as having normal shape, size, position and echogenicity for this breed. The phrenic vasculature, glandular echogenicity and detail were unremarkable. Capsule, cortex, and medullary definition were normal for this age patient. The right adrenal gland measured 2.87 x 0.48 cm at the caudal pole and 0.72 cm at the cranial pole. The region of the left adrenal gland was imaged with no evidence of pathology.

Spleen

The **spleen** was mildly enlarged, which is typical for the breed. The spleen was folded upon itself.

Liver

The **liver** images submitted revealed subjectively normal liver size, contour and structure. The liver parenchyma was uniform. The hepatic veins were mildly dilated as was the vena cava. There was no overt portosystemic shunting noted. The gallbladder presented acceptably thin walls with primarily anechoic content. The cystic and common bile ducts were normal. No pathological hepatic lymphadenopathy was evident. No overt structural evidence of inflammatory, infiltrative or regenerative pathology was evident.

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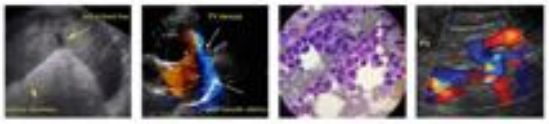

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Gastrointestinal

Examination of the **gastrointestinal tract** revealed a stomach and intestine free of stasis, of normal wall thickness, acceptable curvilinear mural detail, and peristaltic activity. Small and large intestine demonstrated normal luminal chyme and stool consistency respectively. The mesenteric lymph nodes were reactive and measured 2.4 cm.

Pancreas

The base and limbs of the **pancreas** were observed to be largely isoechoic to surrounding omental fat. Pancreatic duct and capsular contour were acceptably normal and parenchyma respected normal curvilinear patterns. No overt evidence of active inflammatory or neoplastic disease was noted.

ULTRASONOGRAPHIC FINDINGS

- Mild passive congestion liver pattern. Suspect passive congestion owing to sedation. No overt portosystemic shunting noted.
- Non-specific inflammatory hepatopathy with ALT elevations, structurally normal liver otherwise. Either hypoxia may be inducing ALT elevation if the patient has passive congestion disease in the thorax or more likely non-specific inflammatory hepatopathy or reactive hepatopathy.
- Minor German Shepherd hypersplenism/benign splenic enlargement.

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

If the patient was sedated for the exam especially with Dormitor or similar then this is a normal variant. If the patient was not sedated for the exam then chest radiographs and/or echocardiogram are warranted to assess for causes of passive congestion. No other shunt criteria was present such as renal calculi, renomegaly, microhepatica or bladder calculi.

The hepatic clinical sonographic presentation is most consistent with Reactive Hepatopathy which is the most common cause of liver enzyme elevation in dogs and cats. The presumption is that gut and other organ antigen stimuli may be causing a low-grade immune response through portal system with which the liver is reacting to causing low-grade enzyme elevations. US-guided FNA could be performed to assess if low grade lymphoplasmacytic inflammation is present that would support this theory. If FNA is performed, please ask the cytologist to emphasize the primary inflammatory cell type. Empirical treatment measures to address this issue can include diet change to hydrolyzed diet, probiotics, deworming, nutraceuticals (SAMe, Actigall…), dental exam and cleaning, and potentially antibiotics such as Clavamox. Metronidazole and Tylosin have traditionally been utilized for this purpose but new studies show that both these antibiotics can disrupt the normal intestinal bacterial flora (intestinal dysbiosis) for weeks and up to 4-6 months. Therefore, Metronidazole and Tylosin should be utilized as a last resort if other efforts have not been effective and sonographic organ appearance remains benign.

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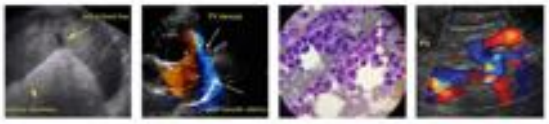

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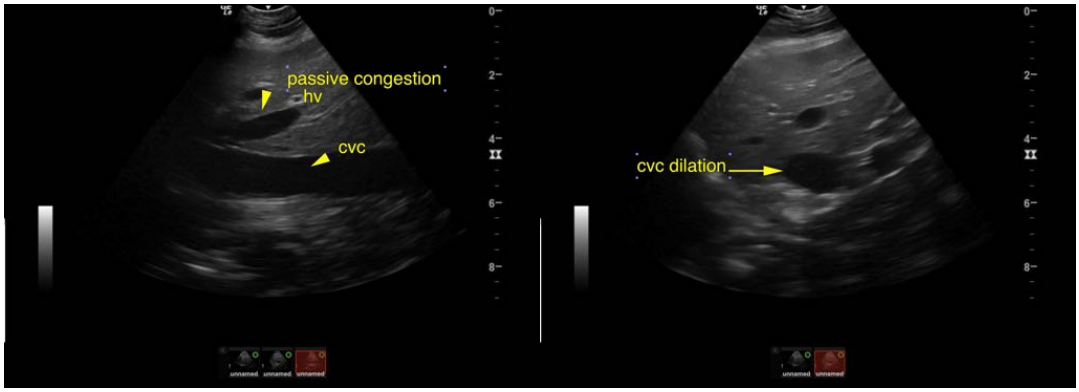

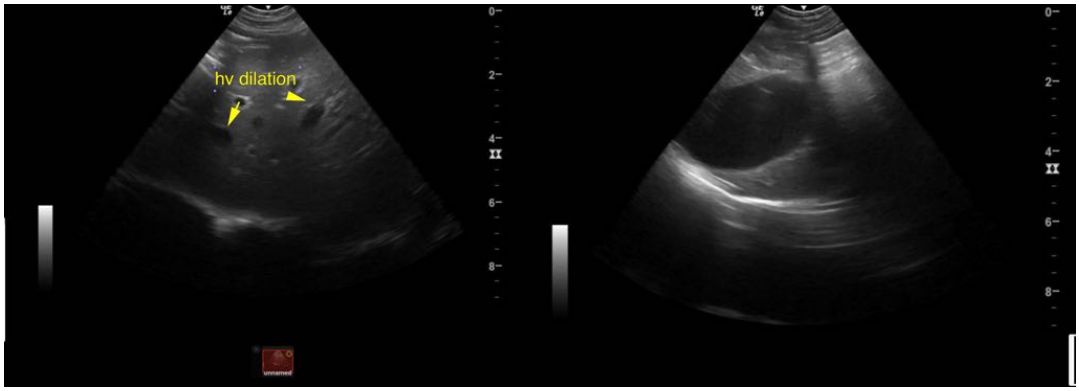

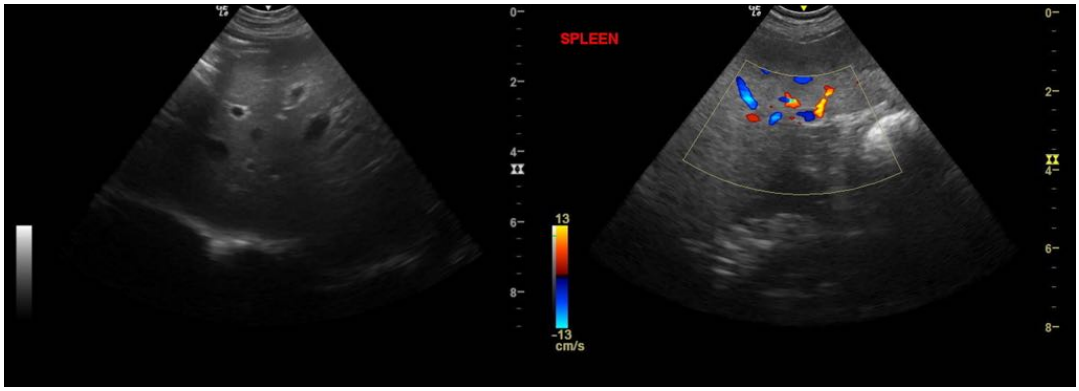

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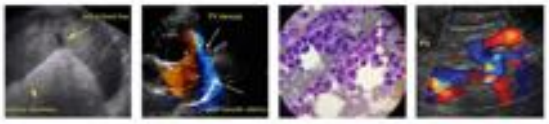

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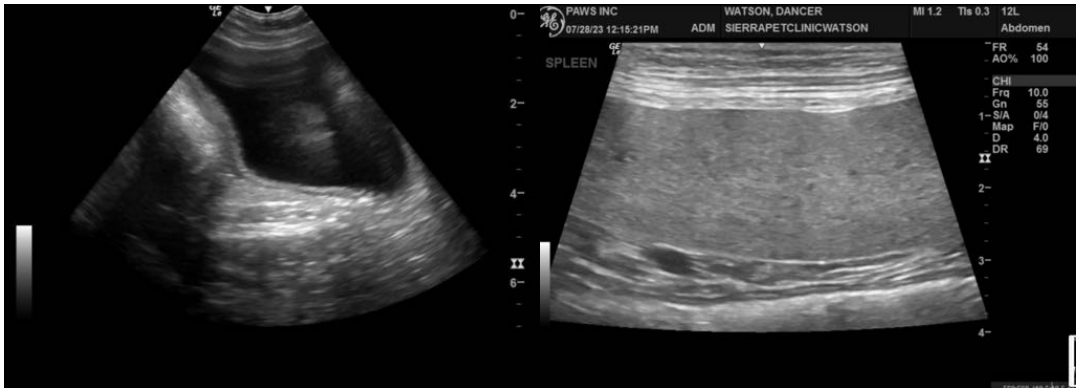

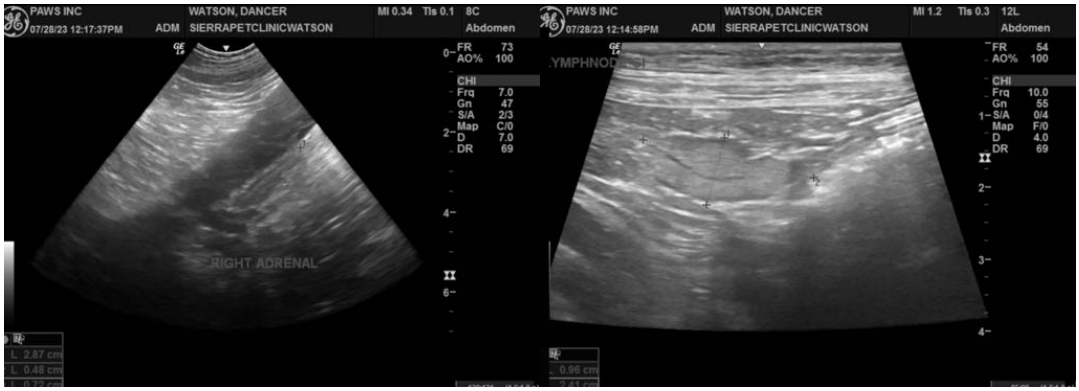

The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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.

Eric Lindquist, DMV, DABVP, Cert. IVUSS, CEO of SonoPath.com

info@SonoPath.com

ADDENDUM 8/3/23

Addendum:

A review of the hepatic vasculature reveals no obvious evidence of a portosystemic shunt.

Andrea Nicastro, MPH, DVM, Diplomate ACVIM