



**PATIENT**

Jojo Salina

**SPECIES**

Feline

**BREED**

Domestic Shorthair

**SEX**

Neutered male

**AGE**

14 years

**WEIGHT**

11.2 lbs

**INTERPRETED BY**

Eric Lindquist, DMV  
DABVP, Cert. IVUSS

**IMAGING PERFORMED BY**

Dr. Parrish

**HOSPITAL NAME**

Local Mobile Vet

**REFERRING VET**

Dr. Parrish

**INVOICE**

39984

**DATE**

10/7/22

**PRESENTING CLINICAL SIGNS**

History: Hx of hyperthyroid, hypertension Hx of increasing values of ALT  
Abnormal PE/Chem/CBC/UA Results: enlarged submandibular LNs, Superficial Cervical LNs, Popliteal LNs proBNP -normal cbc wnl chem ALT 215 (0-100) was 121 March, then 176 in May. creat 1.9 today, previously 1.7 BUN 31 (14-36) t4 3.9 (0.8-4.0) FNA R popliteal LN- lymphocytes of variable size, many blasts, a couple of mitotic figures seen - reactive vs neoplastic

**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** presented a relatively uniform cortical hyperechogenicity when compared to the renal medulla, spleen and liver. No overt masses were noted. Corticomedullary definition was nebulous and the ratio favored the cortex slightly. The ureters were not visible and assumed to be normal. These changes are most consistent with chronic interstitial nephritis yet infiltrative disease could not be entirely ruled out without biopsy though neoplasia is not suspected. The left kidney measured 3.84 cm. The right kidney measured 4.19 cm. The kidneys appear 50-60% compromised.

**Adrenal Glands**

Both **adrenal glands** were 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 left adrenal gland measured 0.85 x 0.4 cm.

**Spleen**

The **spleen** presented a smooth homogeneous parenchyma hyperechoic to liver and renal cortical parenchyma. The capsule was smooth without noticeable expansion or deviation from within the spleen or adjacent pathology. The splenic vasculature demonstrated normal volume without signs of congestion or thrombosis. No sonographic evidence of acute or chronic inflammatory, neoplastic, or infarctual changes was noted.

**Liver**

The **liver** images submitted revealed subjectively normal liver size, contour, and structure. Parenchymal echogenicity was naturally coarse and hypoechoic to the spleen. Vascular and biliary tracts were of normal volume with no evidence of congestion. 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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**Gastrointestinal**

The **gastrointestinal** presentation revealed mild uniform prominence of the gastric mucosa as well as areas of "ropey" small intestinal wall with slight disruption of the normal 1:3 muscularis/mucosal ratio. The intestinal submucosa was slightly irregular, thickened and hyperechoic suggestive of low grade, chronic disease. The mesenteric lymph nodes were reactive.

**Pancreas**

The **pancreas** was heterogenous in the left limb. Subxiphoid palpation is recommended.

**ULTRASONOGRAPHIC FINDINGS**

Chronic interstitial nephrosis pattern.

Diffuse intestinal thickening with minor mesenteric lymphadenopathy.

Heterogenous pancreas, suspect low-grade pancreatitis.

**INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS**

Some enhanced mesentery was noted around the small intestine. 48-72 hour IV fluid protocol is warranted. Reactive hepatopathy is likely. Diet change to a hydrolyzed diet is recommended. A clinical trial of the Zithromax, Metronidazole and probiotics are all valid empirical measures. There was no neoplastic criteria met.

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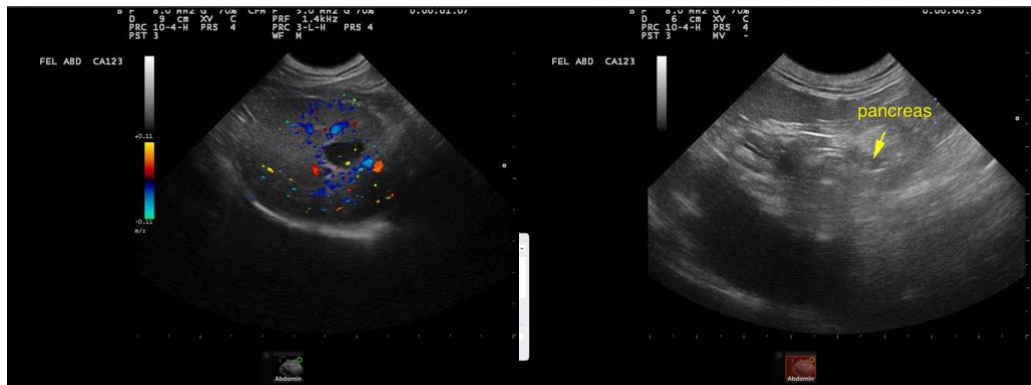
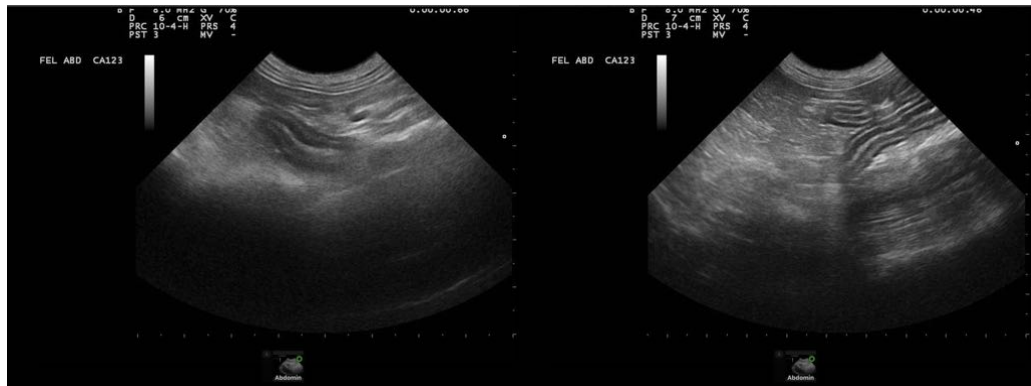
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The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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