



**DATE PRESENTING CLINICAL SIGNS**

10/19/22 P presented for a dental cleaning on 07/28/2022. At that time, ALP and ALT were mildly elevated. Discussed postponing dental and performing bile acids and US or proceeding w/ dental and rechecking liver enzymes in 4 to 6 weeks. o elected second option. Recheck bw on 9/27/2022 showed further progression of elevated liver enzymes.

**PATIENT**

Bellona Zello

**SPECIES**

Feline

**BREED**

DSH

**SEX**

Spayed Female

**AGE**

1/1/16

**WEIGHT**

7.4 Pounds

**INTERPRETED BY**

Beth Johnson, DVM  
DACVIM

**IMAGING PERFORMED BY**

Stephanie Warga  
RDCS, RVT

**HOSPITAL NAME**

Charm City VH

**REFERRING VET**

Dr. Eavers

**INVOICE**

42193

Current Medications: None.  
Lab Results: 07/28/2022: ALP 101 (10-90), ALT 286 (20-110)  
09/27/2022: ALP 131 (6-102), ALT 460 (10-100)  
Date of Previous IntraPet Ultrasound: No previous.  
Sedation: Not required to complete full diagnostic ultrasound.  
Stat Report: Not requested.

**ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN**

**Urinary System**

The urinary bladder is moderately distended with anechoic contents. No masses, inflammatory changes, echogenic sediment or cystoliths are observed. The urinary bladder, trigone and visible pelvic urethra are normal in thickness with a smooth mucosal surface.

The right kidney is normal in size (3.2 cm), shape and echogenicity. It has smooth peripheral margination. There is a normal 1:3 cortex to medulla ratio with appropriate corticomedullary distinction. There is no evidence of pyelectasia, mineral or infarcts observed.

The left kidney is normal in size (3.01 cm), shape and echogenicity. It has smooth peripheral margination. There is a normal 1:3 cortex to medulla ratio with appropriate corticomedullary distinction. There is no evidence of pyelectasia, mineral or infarcts observed.

**Adrenal Glands**

The right adrenal gland is normal in size (0.52 cm), shape and contour. Corticomedullary structure is unremarkable. Visible surrounding vasculature appears normal.

The left adrenal gland is normal in size (0.44 cm), shape and contour. Corticomedullary structure is unremarkable. Visible surrounding vasculature appears normal.

**Spleen**

The spleen is subjectively normal in size with a normal smooth capsular contour. Parenchyma is appropriately finely textured and homogenous with normal echogenicity relative to surrounding tissue (hyperechoic to liver). No focal nodules or masses are observed. Splenic vasculature appears normal.

**Liver**

Liver is subjectively enlarged (swollen contour). Mild parenchymal remodeling with diffusely mildly coarse architecture and increased portal markings is present. No focal nodules or masses are observed. Visible vasculature and biliary tree appear normal without distension or congestion.

The gallbladder is non-distended in size. The wall is smooth without visible thickening. Luminal contents are primarily anechoic. There is no evidence of cystic or common bile duct dilation.

**Gastrointestinal**

The stomach wall is normal in thickness (canine < 0.5 cm and feline < 0.4 cm) and layering. The lumen of the stomach is empty with no evidence of obstruction, foreign material or infiltrative disease. Pyloric outflow tract appears patent.

The visible small intestine demonstrates areas of thick muscularis layer relative to mucosa (disruption of the normal 1:3 muscularis:mucosa ratio). Small intestinal submucosa is slightly irregular, thick and hyperechoic, without evident loss of layering appreciated. The lumen is empty with no evidence of obstruction or foreign material. Some of the small bowel appears mildly corrugated/hyperperistaltic.

The visible colon is normal in wall thickness (< 0.2 cm) and layering. Contents are consistent with normal formed feces and gas.

### ***Pancreas***

Pancreas is prominent (enlarged) in size, hypoechoic to surrounding tissue and has a mildly irregular undulating contour. Parenchyma is coarse with mixed echogenic remodeling noted. Pancreatic duct dilation is noted.

### ***Free Abdomen***

There is no evidence of free peritoneal effusion noted in these images.

The mesenteric lymph nodes are prominent in size with swollen capsular contour. Normal elongated shape (length to width ratio) is maintained. There is no loss of parenchymal detail.

## **ULTRASONOGRAPHIC FINDINGS**

- **Hypoechoic hepatomegaly** – This appearance is consistent with an acute hepatopathy or acute cholangiohepatitis. Infiltrative neoplasia (round cell neoplasia) should also be considered.
- **Inflammatory bowel disease (IBD) pattern** – Thick muscularis has been reported with infiltrative bowel disease including both benign inflammatory disease as well as infiltrative neoplasia such as lymphoma. No aggressive lymphadenopathy, loss of layering, etc. is noted to make lymphoma more probable, but lymphoma cannot be definitively ruled out without tissue sampling. Some hyperperistalsis is present, suggestive of some concurrent gastroenteritis.
- Chronic active pancreatitis
- **Reactive mesenteric lymph nodes** – infiltrative neoplastic disease cannot be ruled out but is considered less likely.

## **INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS**

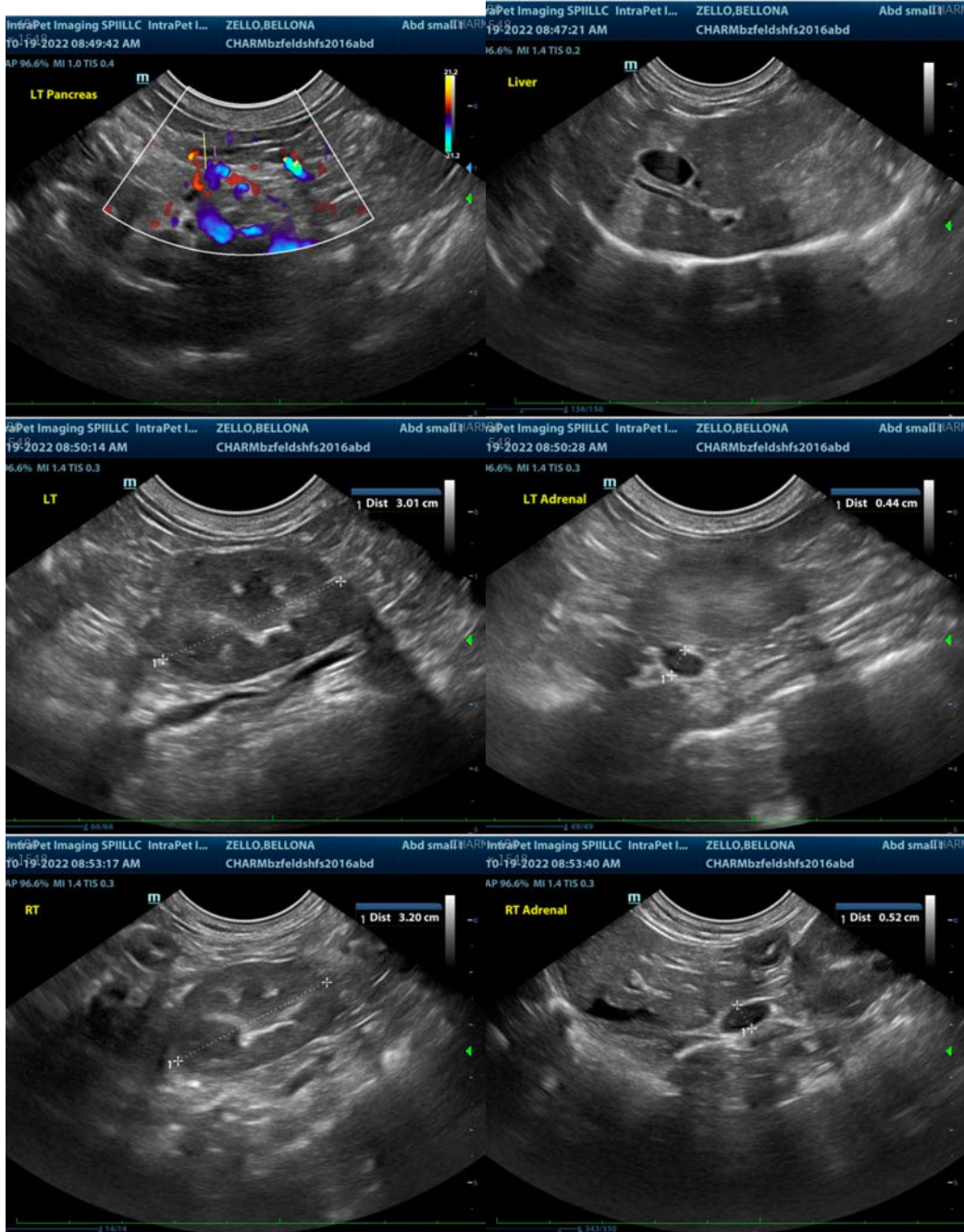
Given this patient's historically increased liver enzymes combined with the changes noted in the ultrasound, recommendations include a fecal exam (if not recently evaluated) as well as potentially a fecal enteropathogen PCR panel to Texas A&M GI Laboratory for further evaluation of possible infectious disease.

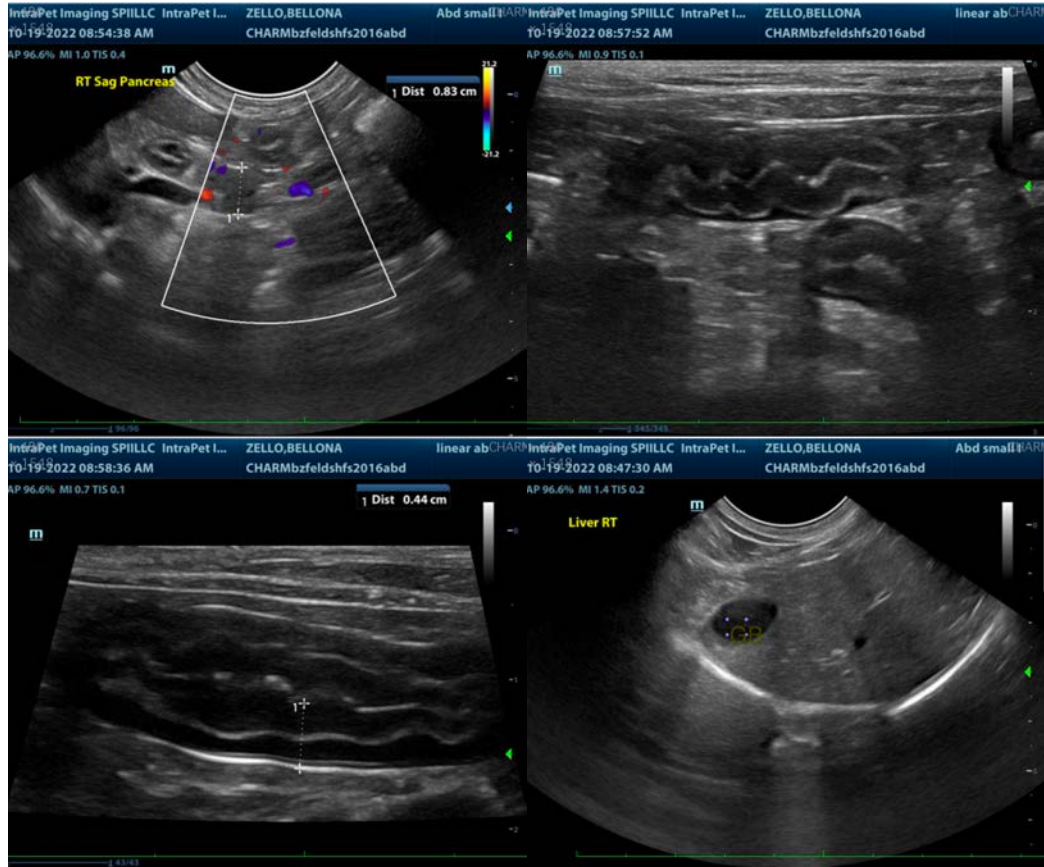
A gastrointestinal malabsorption panel (including cobalamin, folate, TLI and PLI) to Texas A&M GI Laboratory is recommended for further evaluation of GI and pancreatic function.

Additionally, testing for toxoplasmosis could be considered.

Finally, a fine needle aspirate of the liver is recommended if patient's coagulation status is appropriate.

In the meantime, empirical deworming with a 5-day course of Panacur is recommended in addition to hepatic nutraceuticals +/- broad-spectrum antibiotics with monitoring of liver enzymes for improvement. If liver enzymes begin to improve, antibiotics should be continued until they either normalize or plateau, but if there is not a significant change, antibiotics should not be continued long-term.





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.

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