



PATIENT PRESENTING CLINICAL SIGNS

Dexter Shaw Increased Alk Phos, ALT and Precision PSL enzymes raising concerns for liver and pancreas health. Has been a picky eater lately and has had softer stools.

SPECIES ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN

Canine **Urinary System**

BREED

Cairn Terrier Urinary bladder is adequately distended with primarily anechoic contents and occasional echogenic non-shadowing debris. Apical urinary bladder wall is diffusely thick (0.53 cm). Mucosa is hyperechoic and irregular. No masses or cystoliths are observed. The trigone and visible pelvic urethra are normal thickness with a smooth mucosal surface.

SEX

Neutered Male Prostate is normal in size, echotexture and echogenicity for a neutered male.

AGE

14 Years The right kidney is normal in size (5.21 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. Too numerous to count small cortical cysts are noted.

WEIGHT

23.2 Pounds The left kidney is normal in size (4.82 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. Too numerous to count small cortical cysts are noted.

INTERPRETED BY

Beth Johnson, DVM
DACVIM

Adrenal Glands

The right adrenal gland is normal in size (1.06 cm long x 0.99 cm at the cranial pole and 0.62 cm at the caudal pole), shape and contour. Corticomedullary structure is unremarkable. Visible surrounding vasculature appears normal.

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Crystal Hill

The left adrenal gland is normal in size (1.37 cm long x 0.49 cm at the cranial pole and 0.54 cm at the caudal pole), shape and contour. Corticomedullary structure is unremarkable. Visible surrounding vasculature appears normal.

HOSPITAL NAME

The Maples AH

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.

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Dr. Kazienko

Liver

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The liver is subjectively normal in size with normal smooth curvilinear peripheral contour. Parenchyma is appropriately hypoechoic to the spleen in echogenicity and appropriately mildly coarse and homogenous in echotexture. No focal lesions are observed. Visible vasculature and biliary tree appear normal without distension or congestion.

DATE

2/9/23

Gallbladder is moderately distended with anechoic bile as well as mild suspended and gravity dependent echogenic debris. The wall is smooth without visible thickening. There is no evidence of cystic or CBD dilation. There is no evidence of effusion or inflammation.

Gastrointestinal

The visible stomach wall is normal in thickness and layering. The lumen of the stomach is mildly distended with very echogenic reverberation artifact from intraluminal gas. There is no evidence of



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obstruction, foreign material or infiltrative disease; however, complete visualization of far wall is partially inhibited by gas. Pyloric outflow tract appears patent.

Diffusely, the visible small intestines are normal in wall thickness and layering (canine duodenum < 0.5 cm and feline duodenum < 0.4 cm; other < 0.3 cm). Small intestinal motility appears adequate (1-3 contractions per min). The lumen of the small intestine is empty with no evidence of obstruction, foreign material or infiltrative disease. However, in the mid to caudal abdomen, there is a focally mildly dilated loop that contains a 2.0 cm echogenic curvilinear density with strong acoustic shadowing, consistent with a possible foreign object. There is no bowel distention to suggest complete obstruction, but an early or possibly partial obstruction is possible. Colon versus small bowel being imaged can't be definitively ruled out, but is considered less likely based on the tracing available in these images.

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

Pancreas

The pancreatic parenchyma is appropriately isoechoic to surrounding tissue. Visible capsule is smooth and normal in contour. There is no visible pancreatic duct dilation. There is no evidence of active peripancreatic inflammation.

Free Abdomen

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

There is no apparent lymphadenopathy noted in these images.

PRIMARY FINDINGS

- **Suspected non-fully obstructive small bowel foreign body** – An early or partial obstruction can't be ruled out. Additionally, there is a small chance that this is actually colon versus small bowel, but colon is believed much less likely.
- **Mild gallbladder debris** - Cholecystic debris is of unknown clinical significance. It can be seen with biliary stasis from fasting or illness. Cholecystic debris is not necessarily related to hepatobiliary disease. Echogenic bile is most commonly an incidental finding in dogs and should be interpreted in combination with clinical signs such as nausea, inappetence, cranial abdominal discomfort and/or laboratory changes such as increased ALP and/or increased Tbili.

SECONDARY FINDINGS

- **Chronic Cystitis** - Urinary bladder wall changes are most consistent with chronic cystitis. Infiltrative neoplasia cannot be ruled out but is considered less likely give the location and diffuse nature of the changes.
- **Multiple small bilateral cortical renal cysts**

Ultimately, an obvious cause for the reported increased liver enzymes is not identified in these images. Microscopic disease such as Leptospirosis, bacterial cholangiohepatitis, chronic active hepatitis, copper-associated hepatotoxicity, other hepatotoxicity, infiltrative neoplasia (considered unlikely), etc. cannot be definitively ruled out.



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INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

There is no visible ultrasonographic evidence of pancreatitis visible in this patient at this time. However, that doesn't definitively rule it out. Additionally, there is not an obvious cause for the increased liver enzymes. There is concern, however, for at least a partial or early obstructing small bowel foreign body, which may be the explanation for the patient's waxing and waning poor appetite lately.

Given the lack of more convincing clinical signs and the lack of an obstructive pattern, at this time medical management could be considered in the form of fluid therapy/hydration to help lubricate the bowel, in addition to symptomatic care with very close monitoring for continued passage of the object in question versus complete obstruction. Recheck imaging is recommended in 12-24 hours, or sooner if vomiting, abdominal pain, or complete inappetence develop.

Beyond that, given the presenting complaint of increased liver enzymes, further diagnostics after resolution of the foreign body could include testing for Leptospirosis as well as potentially a fine needle aspirate of the liver if patient's coagulation status is appropriate. These diagnostics are more indicated with a hepatocellular injury pattern versus a cholestatic pattern.

Additionally, if not recently evaluated, a urinalysis and, if indicated based on urinalysis results, urine culture are recommended. If protein is present in an otherwise quiet sediment, protein quantification with a urine protein to creatinine ratio is recommended.

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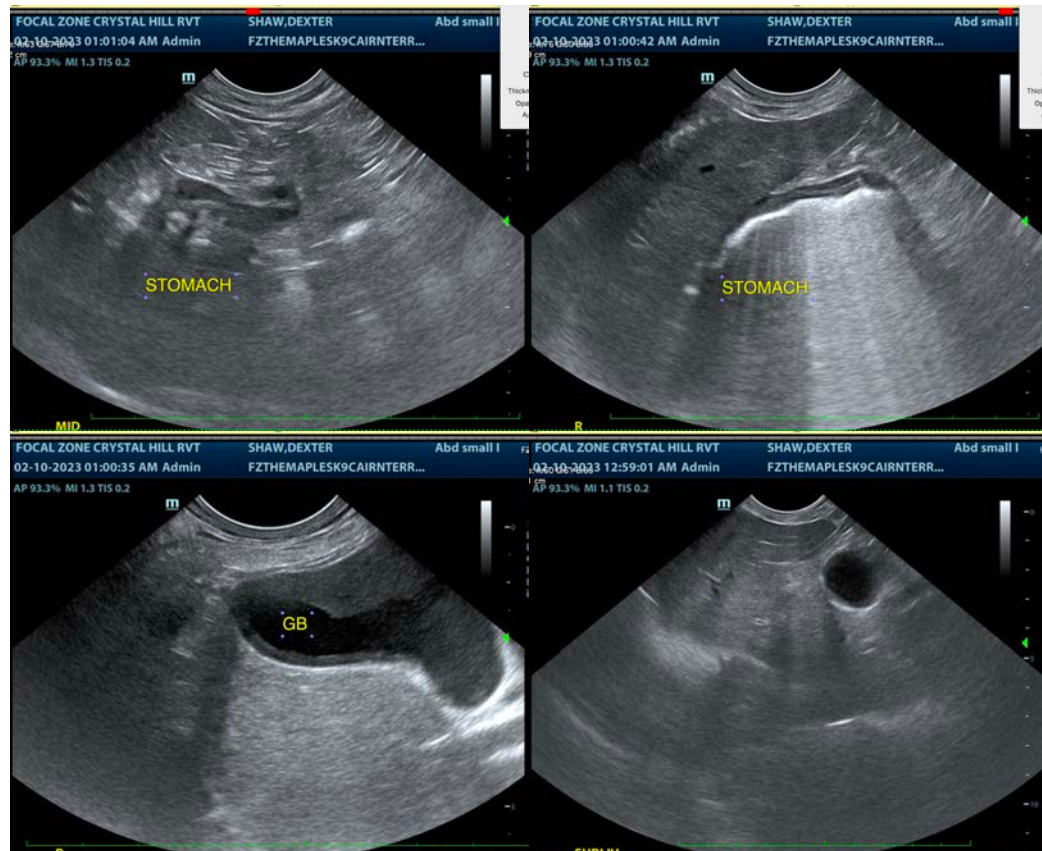
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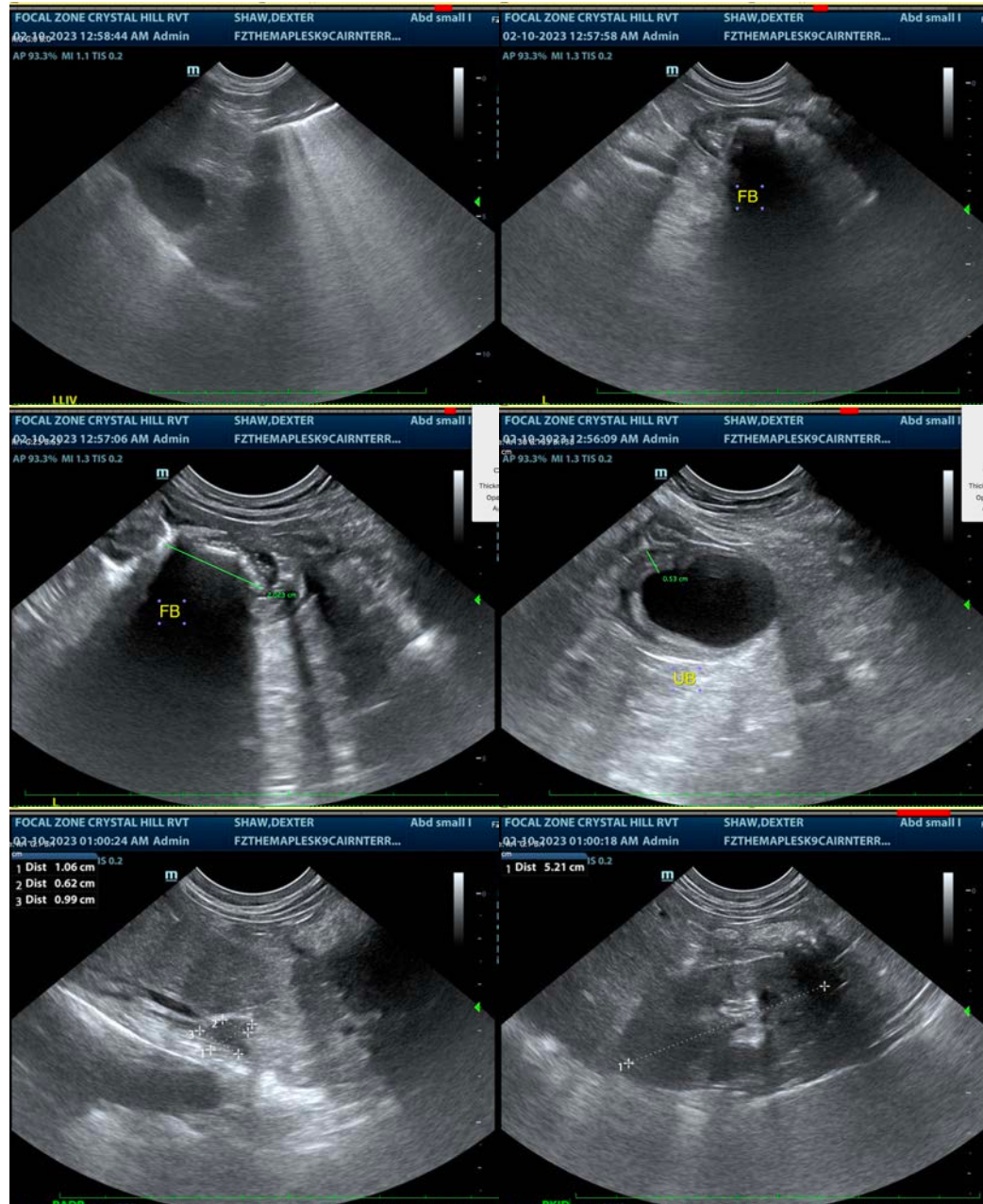
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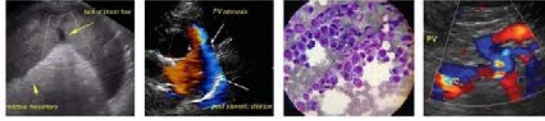
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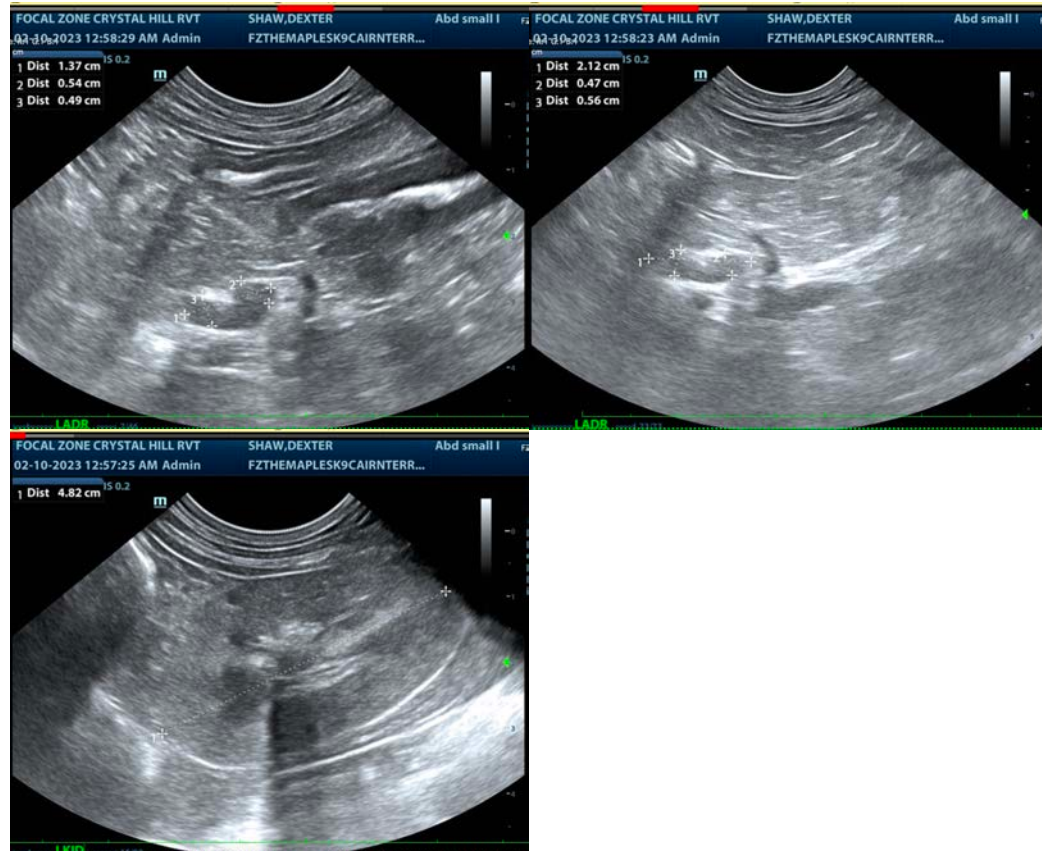
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The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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.

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