



PATIENT

Tuppy Kramon

PRESENTING CLINICAL SIGNS

Increasing liver values, mild weight loss, no PU/PD, no symptoms. No current meds.

SPECIES

Canine

Abnormal PE/Chem/CBC/UA Results: ALP 1000, ALT 760.

ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN

Urinary System

BREED

Havanese

Urinary bladder is adequately distended with primarily anechoic contents and occasional echogenic non-shadowing debris. Apical urinary bladder wall is diffusely thick (0.54 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

Intact Male

The prostate appears normal for a neutered dog. However, the history states that this patient is intact. Either way, there is no prostatic pathology appreciated.

AGE

12 Years

The right kidney is normal in size (4.58 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.

WEIGHT

15.7 Pounds

The left kidney is normal in size (4.65 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. A small cortical cyst is noted in the left kidney.

Adrenal Glands

INTERPRETED BY

Beth Johnson, DVM
DACVIM

The right adrenal gland is normal in size (1.59 cm long x 0.46 cm at the cranial pole and 0.45 cm at the caudal pole), shape and contour. Corticomedullary structure is unremarkable. Visible surrounding vasculature appears normal.

The left adrenal gland is normal in size (1.74 cm long x 0.53 cm at the cranial pole and 0.67 cm at the caudal pole), shape and contour. Corticomedullary structure is unremarkable. Visible surrounding vasculature appears normal.

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Kelly Vazquez

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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Liver

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.

REFERRING VET

Dr. J. Khodari

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Gallbladder is moderately distended with anechoic bile as well as suspended and gravity dependent echogenic debris, including mineral/sand. The wall is smooth without visible thickening. The neck of the gallbladder and cystic duct are mildly dilated, leading to an echogenic structure with acoustic shadow, concerning for a cholecystolith within the cystic duct. There is no evidence of effusion or inflammation.

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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.

SPECIES

Canine

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.

BREED

Havanese

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

SEX

Intact Male

Pancreas

The area of the pancreas contains irregular hyperechoic pancreatic remodeling.

Free Abdomen

AGE

12 Years

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

There is no apparent lymphadenopathy noted in these images.

PRIMARY FINDINGS

WEIGHT

15.7 Pounds

- **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.

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Some of the debris appears to be mineral/small cholecystoliths, including a cholecystolith within the cystic duct, resulting in mild duct dilation – This finding could be suggestive of cholangitis/cholangiohepatitis with chronic active smoldering inflammation resulting in the reported liver enzyme increases, or a residual non-clinically significant change (see recommendations below).

IMAGING PERFORMED BY

Kelly Vazquez

- **Hyperechoic pancreas** – This finding is suggestive of pancreatic fibrosis, possibly secondary to chronic pancreatitis. A TLI is recommended to rule out exocrine pancreatic insufficiency (EPI), especially if clinical signs (weight loss, diarrhea, etc.) are present.

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SECONDARY FINDINGS

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- **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.

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- Left renal cortical cyst

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

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Differentials for this patient's increased liver enzymes include cholangiohepatitis and potentially some post-hepatic cholestasis secondary to the stone, as well as potentially chronic pancreatitis, given the pancreatic changes reported, as well as other non-specific hepatopathies including microscopic diseases such as Leptospirosis, chronic active hepatitis, copper associated hepatotoxicity, other hepatotoxicity,



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infiltrative neoplasia (which is considered less likely), etc. Therefore, recommendations include:

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.

SPECIES

Canine

Testing for Leptospirosis is indicated if not recently evaluated.

BREED

Havanese

This patient's clinical signs would be expected to be more severe versus the reported discovery of increased liver enzymes during a wellness exam if a post-hepatic cholestasis from an obstruction was the primary problem. Regardless, management of possible cholangiohepatitis with a course of broad-spectrum empirical antibiotics such as Clavamox and hepatic nutraceuticals including Deramaxx and Ursodiol are recommended with monitoring of the liver enzymes for improvement.

SEX

Intact Male

If liver enzymes improve, antibiotics should be continued until they are normalize or plateau. If they don't improve and/or progress, ultimately surgery may be necessary for both a liver biopsy as well as choecystolith removal and further gallbladder assessment for patency.

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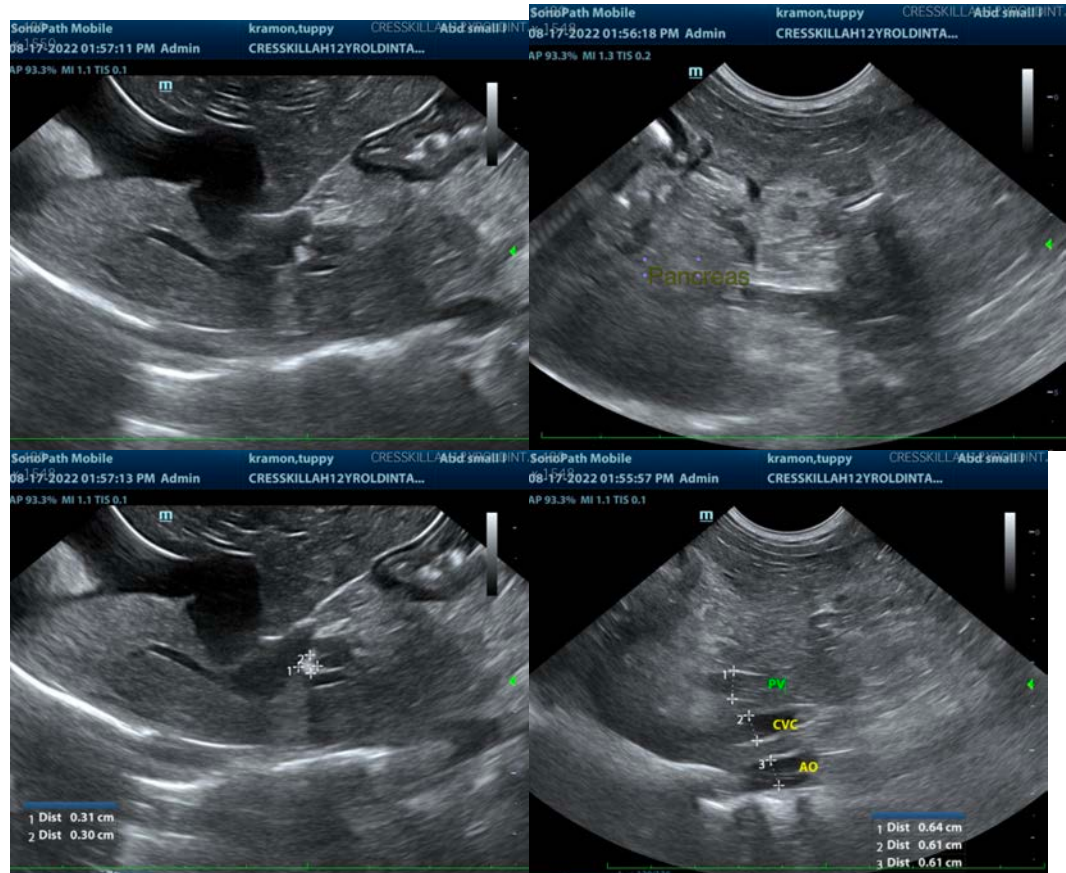
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The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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.

Beth Johnson, DVM, DACVIM
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