

**PATIENT**

Toby De Celis Ramos

**SPECIES**

Canine

**BREED**

Miniature Pinscher

**SEX**

Male, neutered

**AGE**

7 Yrs.

**WEIGHT**

12.5 lbs.

**INTERPRETED BY**

Andrea Nicastro, DVM,  
Diplomate ACVIM  
(Small Animal Internal  
Medicine)

**IMAGING  
PERFORMED BY**

Dr. Ferrer

**HOSPITAL NAME**

Paseos VC

**REFERRING VET**

Dr. Torres

**INVOICE**

14357

**DATE**

12/14/22

**PRESENTING CLINICAL SIGNS**

**History:** The patient is referred for an abdominal ultrasound due to chronic hepatic problems, which started in 2020. History of chronic thrombocytopenia and recurring hepatitis. Currently on the following medications: Denamarin advanced S/M 1/4tab BID, Dasuquin, Royal Canin Hepatic Diet.  
**DDX:** Chronic active hepatitis, Hepatosis, etc  
**Abnormal PE/Chem/CBC/UA Results:** Radiograph: Attached as a supporting document Chem. (Oct 2022): ALP 722, ALT 209, T. Bili 1.0 Chem (Nov 2022) ALP 745, ALT 123, T. Bili 0.3

**ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN**

*Urinary System*

The urinary bladder wall is normal in thickness and the mucosal surface is smooth. The bladder lumen is moderately distended with anechoic urine. No masses, inflammatory changes or calculi are observed. Ureteral papillae and visualized portion of the proximal urethra, visible to a depth of 2 cm, are normal.

The prostate is normal in size (0.60 cm in width) and shape. Parenchyma is homogenous. The prostatic urethra appears normal without evidence of dilation or obstruction.

The left kidney is normal size (3.91 cm in length); normal shape and architecture with smooth peripheral margins. There is a normal 1:3 cortex to medulla ratio with minimal loss of corticomedullary distinction. There is no evidence of pyelectasia, nephroliths, infarcts or hydroureter.

The right kidney is normal size (4.29 cm in length); normal shape and architecture with smooth peripheral margins. There is a normal 1:3 cortex to medulla ratio with minimal loss of corticomedullary distinction. There is no evidence of pyelectasia, nephroliths, infarcts or hydroureter.

*Adrenal Glands*

The left adrenal gland is normal size (0.41 cm at cranial pole) (0.40 cm at caudal pole) (1.42 cm in length); normal shape; homogenous parenchyma. The glandular echogenicity and detail are unremarkable. Capsule, cortex, and medullary definition are normal. The phrenicoabdominal vein and surrounding vasculature are normal.

The right adrenal gland is normal size (0.63 cm at cranial pole) (0.53 cm at caudal pole); normal shape; homogenous parenchyma. The glandular echogenicity and detail are unremarkable. Capsule, cortex, and medullary definition are normal. The phrenicoabdominal vein and surrounding vasculature are normal.

*Spleen*

The spleen is normal in size (1.24 cm in width at the level of the hilus) with a normal capsular contour. There is appropriate echogenicity and echotexture. No focal lesions are observed. Splenic vasculature is normal.

*Liver*

The liver is prominent in size with normal curvilinear peripheral contours. The parenchyma is isoechoic relative to the spleen and diffusely homogeneous in appearance. No distinct focal lesions are observed. Vascular and biliary tracts are of normal volume with no evidence of congestion. The gall bladder lumen is moderately distended. The wall is thin and smooth. A 0.70 cm aggregation of what is thought to be echogenic sludge is observed within the lumen. It appears gravity-dependent. The cystic



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and common bile ducts are normal/not seen.

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***Gastrointestinal***

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The stomach and intestine are free of stasis and exhibit normal peristaltic activity. The gastric lumen is not distended. The gastric wall and pylorus are normal in thickness with a normal layering pattern. The pyloric outflow tract is patent. The small intestinal lumen is not dilated. The small intestinal wall thickness is normal with a normal layering pattern and appropriate mural detail. Discreet masses are not identified. The colonic wall is normal. No obstructive disease is noted.

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***Pancreas***

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The pancreas is subjectively normal in size with minimal deviation from the normal peripheral contours. The parenchyma is largely isoechoic relative to surrounding omental fat. 1-2 irregular, hypoechoic nodules/areas are observed in the left limb, the largest measuring 0.44 cm. The pancreatic duct is not overtly dilated.

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***Free Abdomen***

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There is no evidence of free fluid. A few prominent mesenteric and colic lymph nodes are visualized, the largest measuring 1.89 cm in length. The nodes are normal in shape and echogenicity. Surrounding mesentery is mildly hyperechoic.

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**ULTRASONOGRAPHIC FINDINGS**

**INTERPRETED BY**

**Primary Findings:**

Andrea Nicastro, DVM,  
Diplomate ACVIM  
(*Small Animal Internal  
Medicine*)

- Microscopic hepatopathy in the canine.
- An obvious cause for the elevated liver enzymes is not identified in the study. However, a microscopic hepatopathy (i.e., bacterial cholangiohepatitis, Leptospirosis, chronic active hepatitis, copper-associated hepatotoxicity, infiltrative neoplasia (less likely)) should be considered.

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**Secondary Findings:**

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- Age-related pancreatic remodeling. The hypoechoic nodule/areas in the left limb most likely represent benign nodular hyperplasia with a lower possibility of emerging neoplasia.
- The abdominal lymphadenopathy is most likely reactive with a lower possibility of emerging neoplasia.
- The aggregation of echogenic material in the gallbladder is thought to represent sludge with a low possibility of neoplasia.

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**INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS**

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- Consider pre and post prandial serum bile acids to assess hepatic function.
- Leptospirosis testing can be considered. However, given the chronicity of liver enzyme elevations, this differential is considered less likely. Ultimately, liver biopsies (i.e., laparoscopic or surgical) would be necessary to get a definitive diagnosis. If pursued, copper quantitation

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should be performed on hepatic tissue samples and aerobic and anaerobic bile cultures should be submitted. Prior to anesthesia, clotting times and thoracic radiographs are recommended.

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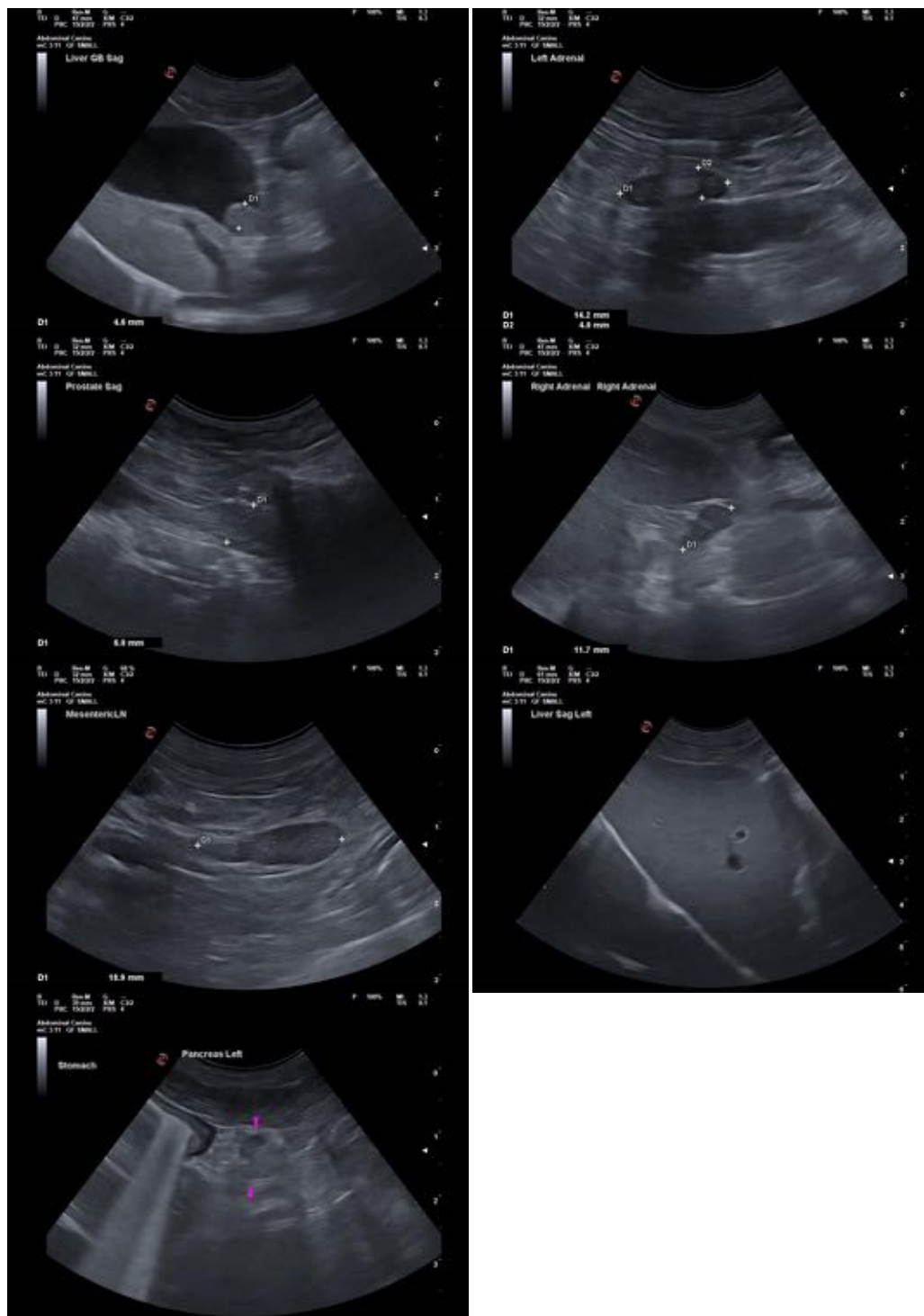
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The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.



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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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Andrea Nicastro, MPH, DVM, Diplomate DACVIM (Small Animal Internal Medicine)

[info@SonoPath.com](mailto:info@SonoPath.com)

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