



**PATIENT PRESENTING CLINICAL SIGNS**

Emmy Lopez History: Liver enzyme elevation.  
Abnormal PE/Chem/CBC/UA Results: GT 67 (11 h)

**SPECIES ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN**

Canine

*Urinary System*

**BREED**

Shih Tzu

The urinary bladder is mildly distended. The wall is of appropriate thickness for the level of repletion. The mucosal surface in the region of the apex is irregular. A 0.36 cm cystic calculus is observed within the lumen. The remaining luminal contents are anechoic. The region of the trigone and the visible portion of the proximal urethra are normal.

**SEX**

Female, spayed

The left kidney is normal size (4.82 cm in length); normal shape and architecture with smooth peripheral margins. The cortex is heterogeneous. There is a normal 1:3 cortex to medulla ratio with poor corticomedullary distinction. Several varying sized cortical cysts are observed. Ill-defined non-obstructive foci of mineralization are also seen. There is no evidence of pyelectasia or hydroureter. Renal vasculature is normal.

**AGE**

10 Yrs. 9 months

The right kidney is normal size (5.72 cm in length); normal shape and architecture with smooth peripheral margins. The cortex is heterogeneous. There is a normal 1:3 cortex to medulla ratio with poor corticomedullary distinction. Several varying sized cortical cysts are observed. A few small mineralized foci are visualized. There is no evidence of pyelectasia or hydroureter. Renal vasculature is normal.

**WEIGHT**

16 lbs.

*Adrenal Glands*

**INTERPRETED BY**

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

The left adrenal gland is normal size (0.45 cm at cranial pole) (0.51 cm at caudal pole) (1.46 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) (0.48 cm at caudal pole) (1.54 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.

**IMAGING PERFORMED BY**

Shari Reffi CVT

*Spleen*

**HOSPITAL NAME**

Banfield Bridgewater

The spleen is normal in size (0.76 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*

**REFERRING VET**

Dr. Baker

The liver is subjectively small in size with normal curvilinear peripheral contours. The parenchyma is hypoechoic relative to the spleen and homogeneous in appearance. 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 moderate amount of mostly gravity-dependent echogenic debris/sludge is observed within the lumen. The cystic and common bile ducts are normal/not seen.

**INVOICE**  
14305

*Gastrointestinal*

The stomach and intestine are free of stasis and exhibit normal peristaltic activity. The gastric lumen is moderately distended with ingesta. The gastric wall and pylorus are normal in thickness with a normal

**DATE**

12/6/22



**PATIENT**

Emmy Lopez

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.

**SPECIES**

Canine

**Pancreas**

The region of the pancreas is isoechoic relative to surrounding omental fat. No obvious parenchymal abnormalities are observed. There is no evidence of regional inflammation or effusion.

**BREED**

Shih Tzu

**Free Abdomen**

The peritoneal cavity is normal. There is no evidence of inflammation or effusion. The abdominal lymph nodes are normal/not visible.

**SEX**

Female, spayed

**AGE**

10 Yrs. 9 months

**ULTRASONOGRAPHIC FINDINGS**

**Primary Findings:**

- Suspected microhepatica. This may be a normal variant for this patient or may represent a chronic hepatopathy (i.e., microvascular dysplasia, inflammatory disease, copper hepatopathy, fibrosis, other). It is unusual for the GGT to be elevated without other liver enzyme elevations. Therefore, this may be artifactual.
- Gallbladder debris/sludge, non-mucocele.
- Cystic calculus.

**WEIGHT**

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**Secondary Findings:**

- Bilateral degenerative renal changes with non-obstructive nephrocalcinosis and cortical cysts.

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**INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS**

- Consider repeating liver values to help determine if the GGT elevation is artifactual.
- Given the subjectively small liver, pre and post prandial serum bile acids are recommended to assess hepatic function.
- Regarding the cystic calculus, consider a cystotomy with stone removal, analysis and culture. If surgery is pursued and if the liver values and/or bile acids are elevated, consider obtaining a liver biopsy at the time of surgery along with aerobic and anaerobic bile cultures. Copper quantitation should also be performed. If a cystotomy is not pursued at this time, consider an attempt at medical dissolution of the urinary bladder stone (prescription urinary diet, broad spectrum antibiotics). If the bladder stone does not decrease in size within 4-6 weeks of initiating therapy, a cystotomy should be revisited.
- Given the patient's age, three-view thoracic radiographs are recommended prior to any anesthetic event.

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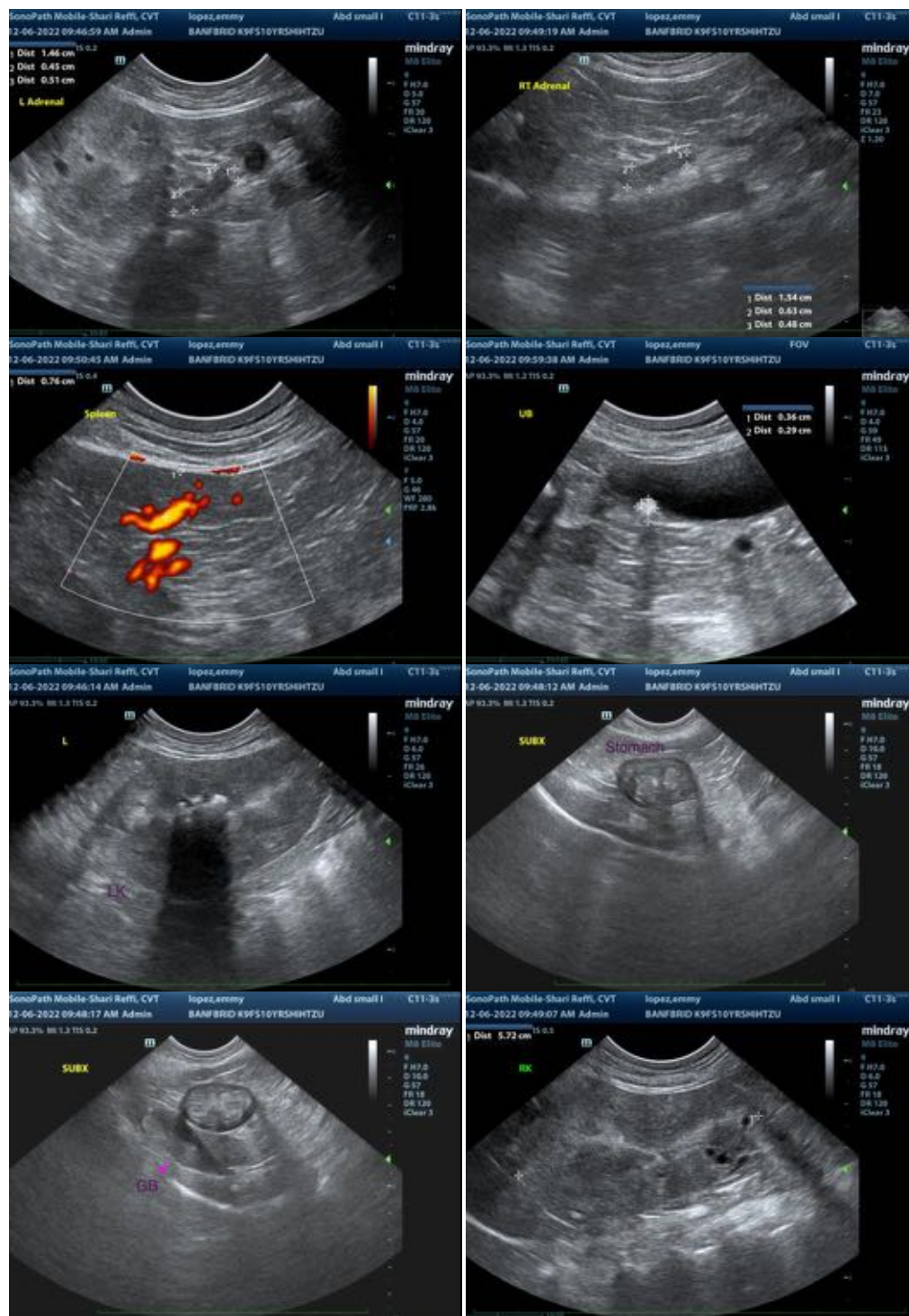
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The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

Thank you for this referral. If the clinical or image interpretation does not parallel your findings or if I



**PATIENT**

can be of any further assistance please contact me.

Emmy Lopez

Andrea Nicastro, MPH, DVM, Diplomate DACVIM (Small Animal Internal Medicine)  
[info@SonoPath.com](mailto:info@SonoPath.com)

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