



PATIENT

Munchkin Shivers

SPECIES

Canine

BREED

Chihuahua

SEX

Spayed Female

AGE

14 Years

WEIGHT

5.4 lbs

INTERPRETED BY

Beth Johnson, DVM
DACVIM

IMAGING PERFORMED BY

Julia Bakker, DVM

HOSPITAL NAME

Orange Blossom
Veterinary Imaging

REFERRING VET

Jonathan Shivers, DVM

INVOICE

72051

DATE

1/7/26

PRESENTING CLINICAL SIGNS

14yr old FS Chi. Hx of Heart Murmur Currently on Enalapril 2.5mg Tablets 1/2 tb PO BID and Furosemide 12.5mg Tablet 1/2 tb PO BID and Pimobendan 1.25mg: Give 1tb BID for heart function.

Over the last week has had decreased to no appetite and some vomiting. AUS to screen abdomen - FNA hypoechoic nodules of liver taken. History of CKD. Echo to recheck heart

ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN

Urinary System

The urinary bladder is adequately 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.

Kidneys are overall normal in size and shape with smooth peripheral margination. A normal 1:3 cortex to medulla ratio is maintained. The medulla and cortices are uniform in texture with some mild increased cortical echogenicity and mild loss of corticomedullary distinction, expected in this age patient. There is no evidence of pyelectasia or infarcts observed. Left measures 3.02 cm. Right measures 3.13 cm. Multiple cortical cysts are present bilaterally. Punctate non-obstructive nephroliths are noted bilaterally.

Adrenal Glands

The right adrenal gland is normal in size (0.41 cm at cranial pole and 0.34 cm at caudal pole), shape and overall architecture, echogenicity and echotexture. Visible surrounding vasculature appears normal.

The left adrenal gland is normal in size (0.35 cm at cranial pole and 0.29 cm at caudal pole), shape and overall architecture, echogenicity and echotexture. Visible surrounding vasculature appears normal.

Spleen

The spleen is unable to be fully visualized in these images, but the edges that are seen appear largely normal without evident of pathology.

Liver

Liver is subjectively enlarged with mildly irregular margins. Parenchyma is moderately heterogenous characterized by multiple poorly defined hypoechoic nodules within otherwise hyperechoic liver parenchyma. Visible vasculature and biliary tree appear normal without distension or congestion.

Gallbladder is moderately distended with anechoic bile as well as suspended and gravity dependent echogenic debris. The wall of the gallbladder appears as a thin hyperechoic/calcified rim casting a distinct distal acoustic shadow. 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 empty with no evidence of obstruction, foreign material or infiltrative disease. Pyloric outflow tract appears patent.

The visible small intestines are normal in wall thickness and layering. 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.



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

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Pancreas

The pancreas that is observed appears appropriately isoechoic to surrounding omental fat. Visible capsule is smooth and normal in contour. Visible pancreatic parenchyma is homogenous and unremarkable. There is no visible pancreatic duct dilation. There is no evidence of active peripancreatic inflammation.

BREED

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Free Abdomen

There is no visible free peritoneal effusion noted in these images.

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There is no apparent pathologic lymphadenopathy noted in these images.

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ULTRASONOGRAPHIC FINDINGS

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- Moderately Heterogenous Liver – These changes are most consistent with benign processes such as nodular hyperplasia, steroid (vacuolar) hepatopathy, extramedullary hematopoiesis or possibly chronic inflammatory disease and less commonly infiltrative round cell or metastatic neoplasia.
- Mild to moderate 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.
- Porcelain gallbladder – Porcelain (calcified) gallbladder is an uncommon finding in companion animals and has been observed as both an incidental finding and associated with biliary neoplasia. In humans, porcelain gallbladder can be a manifestation of chronic gallbladder disease, chronic cholecystitis, intramural hemorrhage with subsequent calcification, imbalances in calcium metabolism, and even giardiasis. This finding should be interpreted in combination with any clinical signs and/or laboratory changes suggestive of biliary disease and/or calcium dysregulation, etc.
- Age related kidney changes with bilateral non-obstructive nephroliths and cortical cysts.

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INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

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If not recently evaluated, a urinalysis and, if indicated based on urinalysis results, urine culture is 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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If not recently evaluated, a blood pressure is recommended.

I'm uncertain whether the degree of azotemia has progressed or is largely static for this patient, but progressive kidney disease and/or even dehydration could potentially be contributing to patient's overall clinical signs, and if tolerated based on echocardiogram, consultation with a cardiologist, etc., altering heart medications, especially diuretics, could potentially benefit the kidneys (again only if



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tolerated by the heart).

Otherwise, in the meantime, supportive/symptomatic medical management of possible concurrent gastritis, subclinical nausea, etc. could be considered in the form of antiemetics, gastroprotectants, appetite stimulant, etc.

Otherwise, the changes described above trend largely in appearance toward benign.

Further recommendations regarding the liver changes are largely dependent on results of the reportedly pending cytology.

If the above is not clinically suspected, other diagnostic considerations could include:

A baseline cortisol is recommended. If baseline cortisol is less than 2, a full ACTH stimulation test is recommended to rule out hypoadrenocorticism.

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.





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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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