

**DATE PRESENTING CLINICAL SIGNS**

8/31/21 History: Anorexia. History of elevated liver values. PE today: temp 104.1, QAR, H/L WNL.

PATIENT Current Medications: Denamarin daily.

Katie Moyna Lab Results: 6/28/2021: ALT 726, ALKP 439, GGT 42.

SPECIES Radiographs: Not provided by the veterinarian.

Canine Date of Previous IntraPet Ultrasound: No previous IntraPet scans.

BREED Sedation: Sedation not required for scan.

Chihuahua Stat Report: STAT report not requested by the veterinarian.

SEX ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN

Female Spayed

Urinary System

The urinary bladder, trigone, and pelvic urethra are normal in thickness and the mucosal surface is smooth. The bladder lumen is mildly distended. A small amount of suspended echogenic debris is observed within the lumen. 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.

AGE

8/31/09

WEIGHT

9 lbs.

The left kidney is normal size (4.24 cm in length); normal shape and architecture with smooth peripheral margins. There is a normal 1:3 cortex to medulla ratio with normal corticomedullary distinction. There is no evidence of pyelectasia, nephroliths, infarcts or hydroureter.

INTERPRETED BY

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

The right kidney is normal size (4.53 cm in length); normal shape and architecture with smooth peripheral margins. There is a normal 1:3 cortex to medulla ratio with normal corticomedullary distinction. There is no evidence of pyelectasia, nephroliths, infarcts or hydroureter.

HOSPITAL NAME

Banfield Pet Hospital
of Towson

Adrenal Glands

The left adrenal gland is normal size (0.46 cm at cranial pole) (0.45 cm at caudal pole) (1.50 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.

REFERRING VET

Dr. Lewis

The right adrenal gland is normal size (0.46 cm at cranial pole) (0.52 cm at caudal pole) (1.77 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.

Spleen**INVOICE**

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The spleen is subjectively enlarged (1.40 cm in width at the level of the hilus) with swollen/rounded peripheral contours. There is appropriate echogenicity and echotexture. No focal lesions are observed. Splenic vasculature is normal.

Liver

The liver is subjectively enlarged with swollen peripheral contours. The parenchyma is isoechoic relative to the spleen. Numerous, varying sized, irregular, hyperechoic nodules are observed throughout the parenchyma. The remaining parenchyma is slightly mottled in appearance. There is an increase in portal markings. Hepatic vasculature is of normal volume with no evidence of congestion. The gall bladder is

moderately distended. The wall is normal in thickness. A moderate to large amount of aggregated, echogenic, suspended sludge in a partially stellate pattern is observed within the lumen. The cystic and common bile ducts are normal/not seen.

Gastrointestinal

The gastric lumen is distended with ingesta. 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.

Pancreas

The right limb of the pancreas is visible with normal curvilinear peripheral contours. The parenchyma is largely hyperechoic relative to surrounding omental fat and slightly mottled in appearance. The pancreatic duct is visible but not overtly dilated. There is no evidence of peripancreatic inflammation or effusion.

Free Abdomen

There is no evidence of free fluid. At least two enlarged, hypoechoic, portal lymph nodes are observed with the largest measuring 1.46 cm in length. A few prominent mesenteric lymph nodes are also visualized with the largest measuring 2.88 cm in length. A few prominent nodes are also seen in the left cranial quadrant.

Other

Several ring down lesions are visualized.

ULTRASONOGRAPHIC FINDINGS

Primary Findings:

- Diffuse hepatopathy. Differentials include inflammatory disease (i.e., cholangiohepatitis, chronic active hepatitis), infiltrative neoplasia (i.e., round cell), hepatotoxicosis (i.e., copper), +/- concurrent age-related pathology.
- The gall bladder changes are consistent with an emerging mucocele.
- The splenic changes could be consistent with benign pathology (i.e., lymphoid hyperplasia or extramedullary hematopoiesis). However, emerging neoplasia (i.e., round cell tumor) is also a consideration.
- The abdominal lymphadenopathy could be consistent with infiltrative neoplasia, reactive lymphadenitis, or lymphoid hyperplasia.
- The ring down lesions are consistent with pulmonary parenchymal disease.

Secondary Findings:

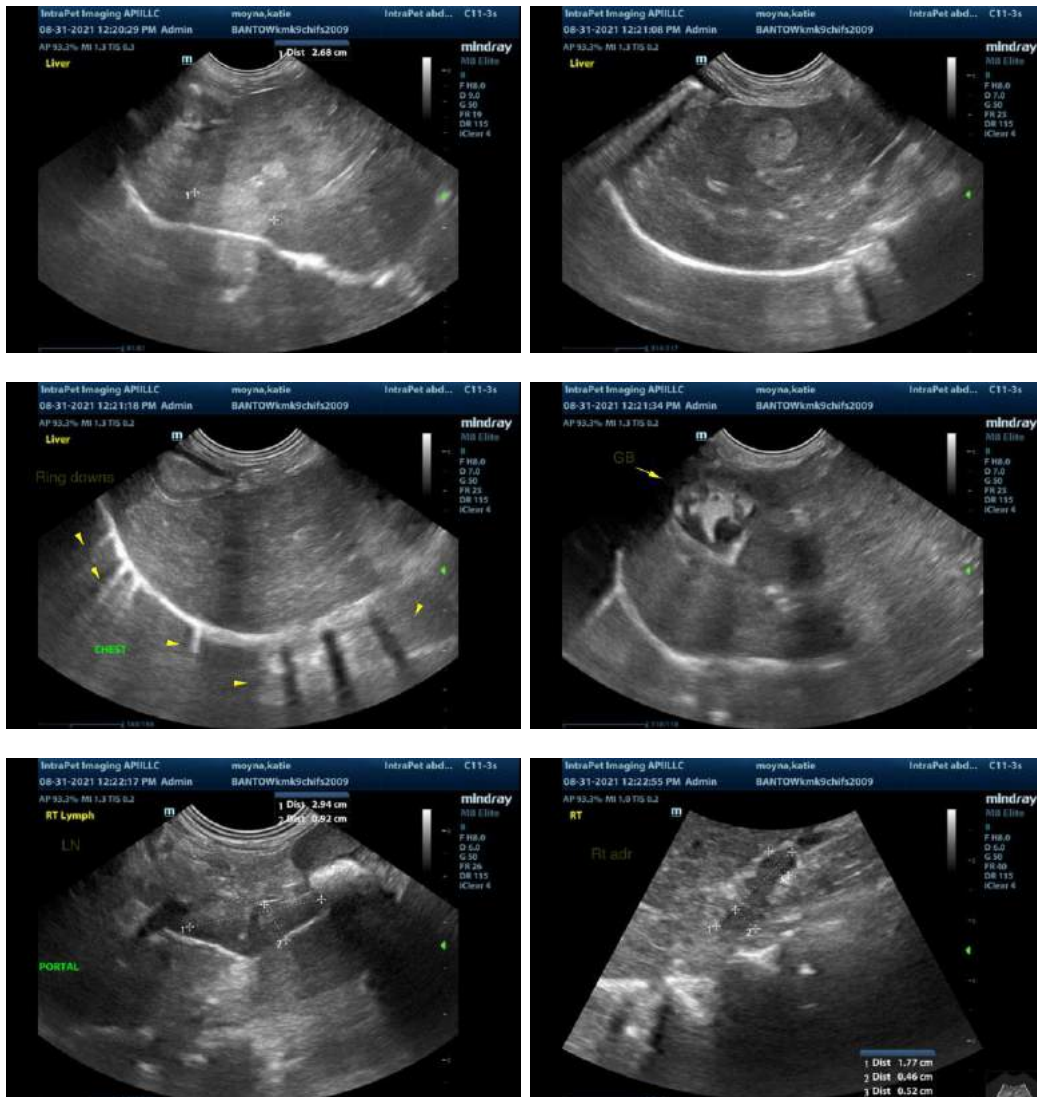
- The pancreatic changes are most consistent with age-related parenchymal remodeling, potentially secondary to a prior inflammatory episode, early fibrosis or chronic pancreatitis.

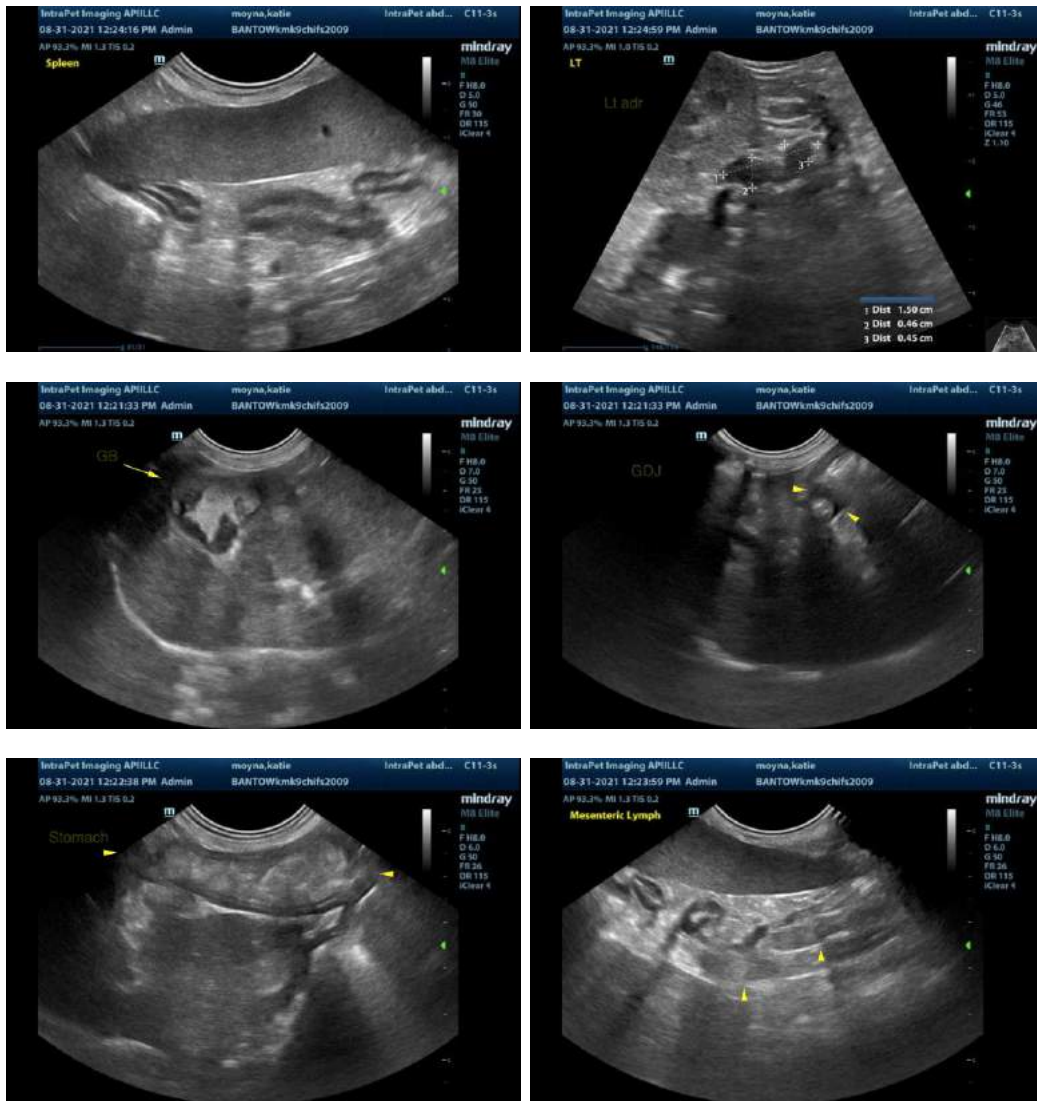
INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

1. Three-view thoracic radiographs are recommended to assess cardiopulmonary status.
2. If an aggressive approach is desired, consider an abdominal exploratory with liver biopsies, aerobic

and anaerobic bile cultures +/- cholecystectomy +/- splenic tissue sampling. If surgery is pursued, referral to a board-certified veterinary surgeon is recommended, particularly if a cholecystectomy is to be performed. If a more conservative approach is desired, consider fine needle aspirates of the liver and spleen (if clotting status is appropriate). A 25-gauge needle should be used. Ursodiol therapy should also be initiated with serial sonographic monitoring (i.e., every 4-6 weeks) of the gall bladder to assess for progression to a fully formed mucocele. It should be noted that gall bladder mucoceles can result in perforation with subsequent bile/septic peritonitis.

3. If medical management of the hepatopathy is pursued, consider empirical treatment for bacterial cholangiohepatitis (amoxicillin-clavulanic acid, Denamarin Advanced). If no improvement in the liver values is seen within 7-10 days of initiating therapy, antibiotics should be discontinued, and hepatic tissue sampling reconsidered. If liver values improve, continue therapy for at least 4-6 weeks and 1 week beyond normalization of the liver values.
4. Leptospirosis testing (i.e., blood and urine PCR, serology) can also be considered, particularly if the liver enzyme elevations are acute in nature.





The information and recommendations provided are based on the images presented by the referring veterinarian. 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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