


PATIENT PRESENTING CLINICAL SIGNS

Piper Zebarah History: Elevated liver enzymes. In for routine senior exam. Osteoarthritis and age-related eye changes. Was fed breakfast this morning.

SPECIES Abnormalities found on lab-work:
 Canine CBC-normal Chemistry- ALT-266(18-121) GGT-29(0-13) Cholesterol-432(131-345) Phosphorus-6.6(2.5-6.1) TP-5.8(5.5-7.5), albumin-2.6(2.7-3.9) Urinalysis-USG-1.013, UPC-2.5 T4-normal.

ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN
BREED

Chihuahua **Urinary System**
 The urinary bladder and visible portion of the pelvic urethra are normal for the degree of luminal distension. The urine is anechoic with no evidence of debris. Cystic calculi and discrete masses are not observed. The region of the trigone is normal.

SEX

Female Spayed The left kidney is normal in size (3.84 cm in length) with a normal shape, architecture and smooth peripheral margins. There is a normal 1:3 cortex to medulla ratio with mild to moderate loss of corticomedullary distinction. There is no evidence of pyelectasia, nephroliths, infarcts or hydroureter. Renal vasculature is normal.

AGE

13 years The right kidney is normal in size (4.39 cm in length) with a normal shape, architecture and smooth peripheral margins. There is a normal 1:3 cortex to medulla ratio with mild to moderate loss of corticomedullary distinction. There is no evidence of pyelectasia, nephroliths, infarcts or hydroureter. Renal vasculature is normal.

WEIGHT

9.8 lbs **Adrenal Glands**
 The left adrenal gland is mildly enlarged (0.56 cm at cranial pole) (0.65 cm at caudal pole) with a normal shape and homogenous parenchyma. The glandular echogenicity and detail are unremarkable. Capsule, cortex, and medullary definition are normal. The phrenicoabdominal vein and surrounding vasculature are normal.

INTERPRETED BY

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

The right adrenal gland is borderline enlarged (0.64 cm at cranial pole) (0.53 cm at caudal pole) with a normal shape and 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

Chaley Hunt LVT

Spleen
 The spleen is normal in size (0.88 cm in width at the level of the hilus) with a normal capsular contour. The parenchyma is subtly mottled in appearance. No focal lesions are observed. Splenic vasculature is normal.

HOSPITAL NAME

Columbia AC

Liver
 The liver is normal to slightly prominent in size with slightly rounded peripheral contours. The parenchyma is isoechoic to slightly hypoechoic 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.

REFERRING VET

Dr. Michelle Engel

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

INVOICE

12473

DATE

3.22.23

Gastrointestinal

The gastric lumen is mildly distended consistent with a post-prandial presentation. The gastric wall is mildly thickened (up to 0.52 cm) with retention of the normal layering pattern. The small intestinal lumen is segmentally dilated with chyme. The small intestinal wall is normal in thickness with a normal layering pattern and appropriate mural detail. Discreet masses are not identified. The colonic wall is normal. There is no evidence of an obstructive pattern.

Pancreas

The left limb and base of the pancreas are 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 obvious evidence of free fluid. The abdominal lymph nodes are normal/not visible.

ULTRASONOGRAPHIC FINDINGS

Primary Findings

- The gall bladder changes are consistent with a developing mucocele.
- The hepatic parenchymal changes are nonspecific and may be secondary to vacuolar hepatopathy (i.e., idiopathic/endocrine), inflammatory disease (i.e., bacterial cholangiohepatitis, chronic hepatitis), hepatotoxicosis (i.e., copper), or other hepatopathy.
- Bilateral nonspecific chronic renal changes

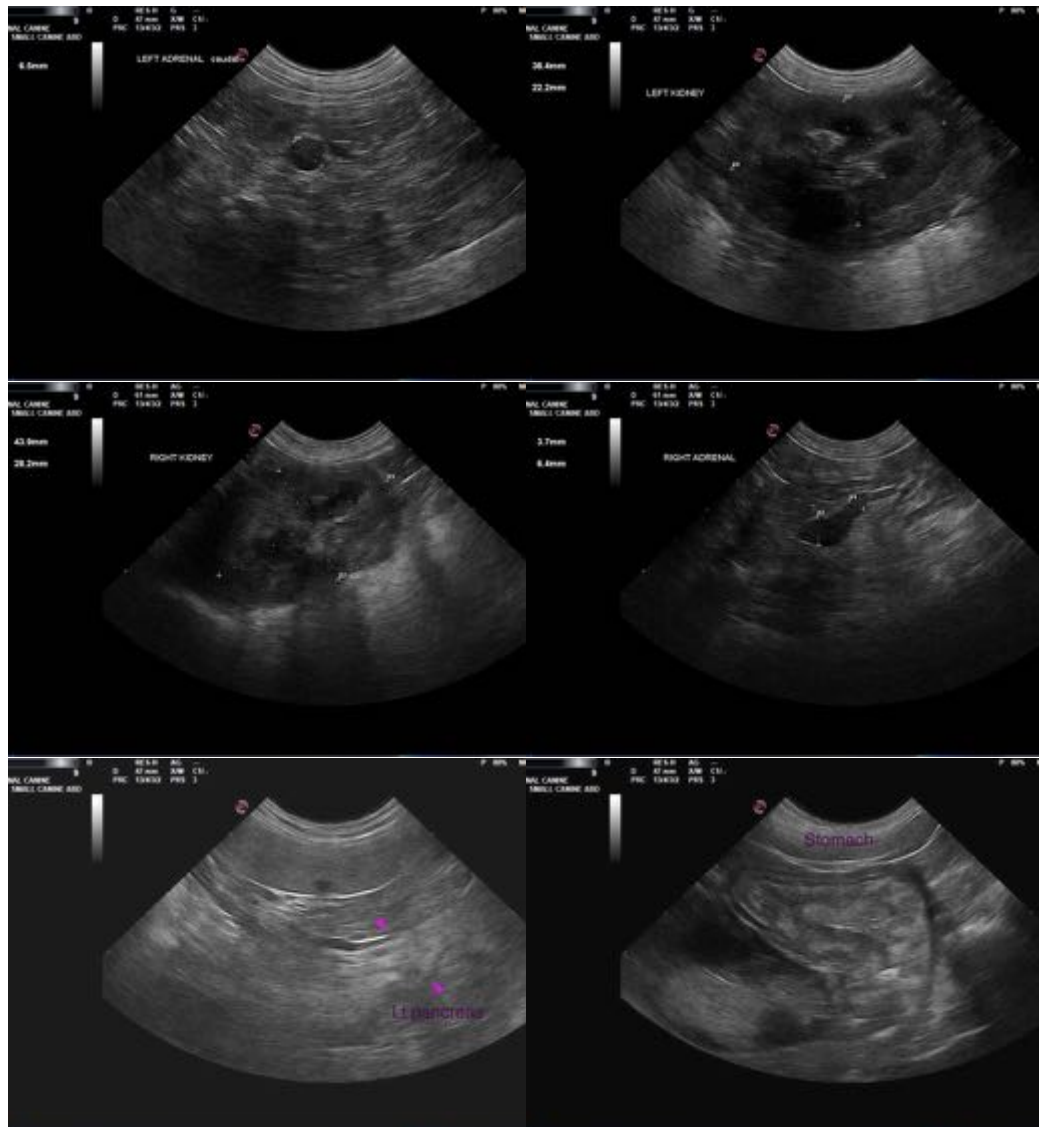
Secondary Findings

- Mild bilateral adrenomegaly, more pronounced in the left adrenal gland
- The splenic parenchymal changes are most consistent with a benign process such as lymphoid hyperplasia, extramedullary hematopoiesis, splenitis or antigenic stimulation with a low possibility of infiltrative neoplasia (i.e., lymphoma, mast cell neoplasia).
- The pancreatic changes are most consistent with age-related parenchymal remodeling, potentially secondary to a prior inflammatory episode, early fibrosis or chronic pancreatitis.
- The gastric wall thickening is most consistent with an inflammatory process with a lower possibility of emerging neoplasia.

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

- Regarding the gall bladder changes, a prophylactic cholecystectomy can be considered. If surgery is pursued, liver biopsies should also be obtained along with aerobic and anaerobic bile cultures. If surgery is not pursued, consider initiation of Ursodiol with serial sonographic monitoring (i.e., every 4-6 weeks) to assess for progression. Serial monitoring (i.e., every 3 months) of the patient's liver values should be performed to assess for worsening liver values.

- Regarding the renal changes and proteinuria, further diagnostics/treatment for a protein-losing nephropathy should be considered and could be consistent with include the following:
 1. Testing for infectious disease (i.e., tick-borne, heartworm)
 2. Three-view thoracic radiographs to assess for occult neoplasia in the chest
 3. Baseline blood pressure measurement
 4. Treatment with the following:
 - a. Angiotensin receptor blocker +/- ACE inhibitor
 - b. Omega 3 fatty acids
 - c. Prescription renal diet
- Consider testing for hyperadrenocorticism with a low-dose dexamethasone suppression test or ACTH stimulation test if clinical signs (i.e., PU/PD) develop.





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.

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