



PATIENT PRESENTING CLINICAL SIGNS

Honey Rodriguez History: The patient was presented today due to multiple episodes of vomiting last night (3/14/23), patient is QAR and NPO since yesterday night. An abdominal ultrasound was done to further evaluate the cause of the vomiting.

SPECIES

Canine

Abnormal PE/Chem/CBC/UA Results: CBC WBC: 26.73K/ μ L (5.05 - 16.76) NEU: 26.73K/ μ L (5.05 - 16.76) EOS: 0.01K/ μ L (0.06 - 1.23) PDW: 8.9fL (9.1 - 19.4) CHEM CREA: 0.4mg/dL (0.5 - 1.8) ALT: 540U/L (10 - 125) ALKP: 335U/L (23 - 212) GGT: 15U/L (0 - 11) K: 3.4mmol/L (3.5 - 5.8) Radiographs: antinuclear collapse possibly incidental & constipation.

BREED

Chihuahua

ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN

Urinary System

SEX

Intact Male

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 slightly irregular. No cystic calculi are observed. Luminal contents are anechoic. The region of the trigone and visible portion of the proximal urethra are normal.

AGE

11 years

The prostate is enlarged (2.18 cm in width) with smooth curvilinear peripheral contours. The parenchyma is hyperechoic relative to surrounding omental fat and slightly heterogenous in appearance. No distinct focal lesions are observed. The prostatic urethra is not overtly dilated.

WEIGHT

6.3 lbs

The left kidney is normal in size (4.33 cm in length) with a normal shape, architecture and smooth peripheral margins. There is a normal 1:3 cortex to medulla ratio with moderate loss of corticomedullary distinction. Hyperechoic shadowing diverticular foci are visualized. Trace pyelectasia is present. There is no evidence of infarcts or hydronephrosis.

The right kidney is normal in size (3.44 cm in length) with an irregular shape. The cortex is variably thickened. There is poor corticomedullary distinction. Hyperechoic shadowing diverticular foci are visualized. A small cortical cyst is seen. There is no evidence of pyelectasia or hydronephrosis.

INTERPRETED BY

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Diplomate ACVIM (*Small Animal Internal Medicine*)

Adrenal Glands

IMAGING PERFORMED BY

Dr. Ferrer, DVM

The left adrenal gland is enlarged at the caudal pole (0.56 cm at cranial pole) (0.90 cm at caudal pole) (1.86 cm in length) with an irregular shape. A 0.90 x 0.75 cm hypoechoic nodule is observed at the caudal aspect. Glandular echogenicity and detail at the cranial aspect are normal. The phrenicoabdominal vein and surrounding vasculature appear normal.

HOSPITAL NAME

Paseos VC

The right adrenal gland is prominent in size at the cranial pole (0.65 cm) and normal in size at the caudal pole (0.37 cm) (1.44 cm in length). A 0.77 x 0.68 cm hyperechoic nodule is observed at the cranial aspect. Glandular echogenicity and detail at the caudal aspect are normal. Surrounding vasculature appears normal.

REFERRING VET

Dr. Francisco Ortiz,
DVM

Spleen

The spleen is subjectively normal in size (1.03 cm in width at the level of the hilus) with slightly irregular peripheral contours. The parenchyma is diffusely mottled and heterogenous in appearance. A 0.53 cm irregular hyperechoic nodule is observed near the caudal aspect. Splenic vasculature is normal with no evidence of thrombosis.

Liver

INVOICE

12422

The liver is subjectively normal in size with slightly irregular peripheral margins. The parenchyma is hypoechoic relative to the spleen and homogenous in appearance. Hepatic vasculature and intrahepatic biliary tracts are of normal volume with no evidence of congestion.

DATE

3.15.23

The gall bladder is moderately distended. The wall is thickened (up to 0.23 cm), hyperechoic, and irregular. A moderate amount of suspended echogenic-to-mineralized debris is observed within the lumen. The cystic and common bile ducts are normal/not seen.

Gastrointestinal

The lumen is not distended. The gastric wall is normal in thickness with a normal layering pattern. 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. There is no evidence of an obstructive pattern.

Pancreas

The pancreas is diffusely prominent in size with slightly irregular peripheral contours. The parenchyma is isoechoic to hyperechoic relative to surrounding omental fat and mottled in appearance. Surrounding mesentery is hyperechoic. One to two, small, hypoechoic nodules are observed in this region and are thought to be within the parenchyma. The pancreatic duct is not overtly dilated.

Free Abdomen

There is no obvious evidence of free fluid. A few prominent mesenteric lymph nodes are visualized (the largest measuring 0.80 cm in length).

ULTRASONOGRAPHIC FINDINGS

Primary Findings

- The pancreatic changes could be consistent with chronic +/- active pancreatitis with evidence of age-related remodeling +/- fibrosis. Adjacent peritonitis is suspected.
- The gall bladder wall changes are trending toward cholecystitis/ "porcelain" gall bladder +/- concurrent benign, age-related hyperplasia.
- Left adrenal nodule, previous observed. Changes are similar to the previous sonogram. Differentials include benign macronodular hyperplasia, adenoma, adenocarcinoma, pheochromocytoma, other.
- A right adrenal nodule is now present. Differentials are the same as for the left adrenal nodule (see above).

*An obvious cause for the patient's elevated liver enzymes is not definitively identified in this study. It may be secondary to gall bladder/cholestatic disease, primary hepatopathy (i.e., bacterial cholangiohepatitis, chronic hepatitis), Leptospirosis, infiltrative neoplasia (less likely), fibrosis, hepatotoxicity, reactive hepatopathy, other hepatopathy.

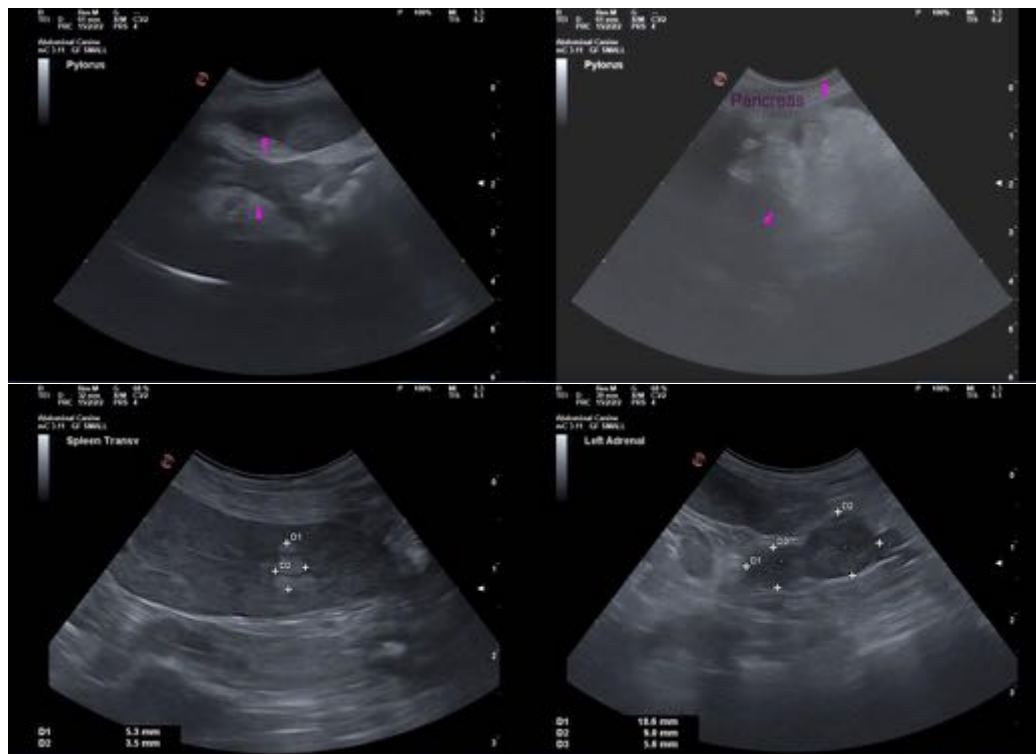
Secondary Findings

- Bilateral degenerative renal changes with dystrophic mineralization and a right cortical cyst
- 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 abdominal lymphadenopathy could be consistent with lymphoid hyperplasia, reactive lymphadenitis or emerging neoplasia (i.e., lymphoma).

- The prostate changes are most consistent with benign prostatic hyperplasia. Bacterial prostatitis is also a differential but considered unlikely in the absence of lower urinary tract signs.

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

- Given the elevated liver enzymes, pre-and postprandial serum bile acids and Leptospirosis testing should be considered, along with hepatic tissue sampling (i.e., fine-needle aspirate) or biopsies (i.e., laparoscopic, or surgical). If biopsies are pursued, hepatic copper quantitation should be performed, and aerobic and anaerobic bile cultures obtained.
- Given the sonographic changes in the pancreas, consider the following:
 1. cPLI
 2. Empirical treatment for pancreatitis
- Given the patient's age, three-view thoracic radiographs are recommended to assess for occult aspiration pneumonia and other pathology.
- Regarding the adrenal nodules, continued sonographic monitoring (i.e., every 3-6 months) is recommended to assess for progression.





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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