



PATIENT

Barbos Yabloch

PRESENTING CLINICAL SIGNS

History: Patient presented with DKA over the weekend. Progressively icteric and becoming more lethargic today. Patient was not previously diagnosed with diabetes mellitus and was not showing any clinical signs of diabetes.

SPECIES

Canine

ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN

BREED

Pug

Urinary System

The urinary bladder, trigone, and pelvic urethra are normal in thickness and the mucosal surface is smooth. The bladder lumen is moderately distended with anechoic urine. 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.

SEX

Male, neutered

The prostate is normal in size (0.63 cm in width) and shape. Parenchyma is homogenous. The prostatic urethra appears normal without evidence of dilation or obstruction.

AGE

6 Yrs.

The left kidney is normal size (4.67 cm in length); normal shape and architecture with smooth peripheral margins. The cortex is hyperechoic and there is slight loss of corticomedullary distinction. A thin ill-defined hyperechoic medullary band is observed adjacent to the corticomedullary junction. Mild pyelectasia is present (0.26 cm in the transverse plane). There is no evidence of nephroliths, infarcts or hydroureter.

WEIGHT

15 lbs.

The right kidney is normal size (4.92 cm in length); normal shape and architecture with smooth peripheral margins. The cortex is hyperechoic and there is slight loss of corticomedullary distinction. A thin ill-defined hyperechoic medullary band is observed adjacent to the corticomedullary junction. Trace pyelectasia is present. There is no evidence of nephroliths, infarcts or hydroureter.

INTERPRETED BY

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Diplomate ACVIM
(Small Animal Internal
Medicine)

Adrenal Glands

The left adrenal gland is normal size (0.38 cm at cranial pole) (0.49 cm at caudal pole) (1.63 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

Tom McNeill

The right adrenal gland is normal size (0.73 cm at cranial pole) (0.45 cm at caudal pole) (1.53 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.

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Spleen

The spleen is overall normal to slightly prominent in size with irregular peripheral contours. A 1.25 x 1.25 cm hypoechoic to slightly heterogeneous nodule is observed at the cranial aspect. The lesion causes capsular expansion. The remaining parenchyma is homogeneous. Splenic vasculature is normal with no evidence of thrombosis.

REFERRING VET

Dr. Preiser

Liver

The liver is subjectively enlarged with slightly swollen peripheral contours. The parenchyma is isoechoic 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. The gall bladder lumen is moderately distended. The wall is thin and smooth. A small amount of aggregated

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echogenic partially dependent debris is observed within the lumen. The cystic and common bile ducts are normal/not seen. The gall bladder lumen is moderately distended. The wall is thin and smooth. Luminal contents are anechoic. The cystic and common bile ducts are normal. The common bile duct measured 0.29 cm in diameter at the level of the duodenal papilla.

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Gastrointestinal

The gastric lumen is not distended. The gastric wall in the region of the fundus is mildly thickened (up to 0.67 cm) with retention of the normal layering pattern. The remainder of the gastric wall is 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 ileocecal colic junction and colonic wall are normal. No obstructive disease is noted.

BREED

Pug

SEX

Male, neutered

Pancreas

The pancreas is diffusely prominent in size with minimal deviation from the normal peripheral contours. The parenchyma is hypoechoic relative to surrounding omental fat. No distinct focal lesions are observed. The pancreatic duct is not overtly dilated. The surrounding mesentery is mildly hyperechoic.

AGE

6 Yrs.

Free Abdomen

Trace free fluid is suspected. The abdominal lymph nodes are normal/not visible.

WEIGHT

15 lbs.

ULTRASONOGRAPHIC FINDINGS

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Primary Findings:

- Splenic nodule/mass. Neoplasia (i.e., sarcoma, round cell tumor) is suspected. However, a benign process (i.e., granuloma, inflammatory focus, other) cannot be completely excluded.
- The pancreatic changes are consistent with mild acute or chronic active pancreatitis with regional peritonitis.
- The hepatic parenchymal changes are non-specific and could be secondary to an inflammatory hepatopathy (i.e., bacterial cholangiohepatitis, chronic active hepatitis), copper hepatotoxicity, Leptospirosis, other hepatopathy +/- concurrent benign change (i.e., vacuolar hepatopathy secondary to diabetes mellitus).

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Secondary Findings:

- The bilateral renal changes are consistent with a diabetic nephropathy.
- The mild gastric wall thickening is likely secondary to inflammation or hypertrophy with a lower possibility of emerging neoplasia.

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*The patient's icterus may be secondary to a primary hepatopathy and/or an extrahepatic bile duct obstruction (i.e., secondary to pancreatitis). A primary hepatopathy is favored due to the lack of cystic/common bile duct dilation.

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INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

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- Baseline labwork including a CBC chemistry panel, urinalysis, urine culture and sensitivity and T4 is recommended, if not already performed.
- Regarding the splenic mass, the following diagnostics can be considered:
 - Three-view thoracic radiographs to assess for pulmonary metastatic disease.
 - Fine needle aspiration of the mass if clotting status is appropriate. If cytologic evaluation is inconclusive, a splenectomy with submission of the spleen for histopathology may be necessary to get a definitive diagnosis. This should be performed when the patient is more stable.
- Regarding the hepatic changes, consider hepatic tissue sampling (i.e., fine needle aspirate or surgical biopsy, if clotting status is appropriate). Also consider Leptospirosis testing (i.e., blood and urine PCR, serology).
- Supportive care for diabetic ketoacidosis and pancreatitis is recommended including regular insulin, IV fluids, gastric protectants, antiemetics and pain medication as needed +/- fresh frozen plasma. Broad spectrum antibiotic therapy is also recommended while awaiting test results. Initiation of nutritional support (i.e., via nasogastric tube) should be considered as soon as the patient will tolerate it as this will help to maintain enterocyte health.





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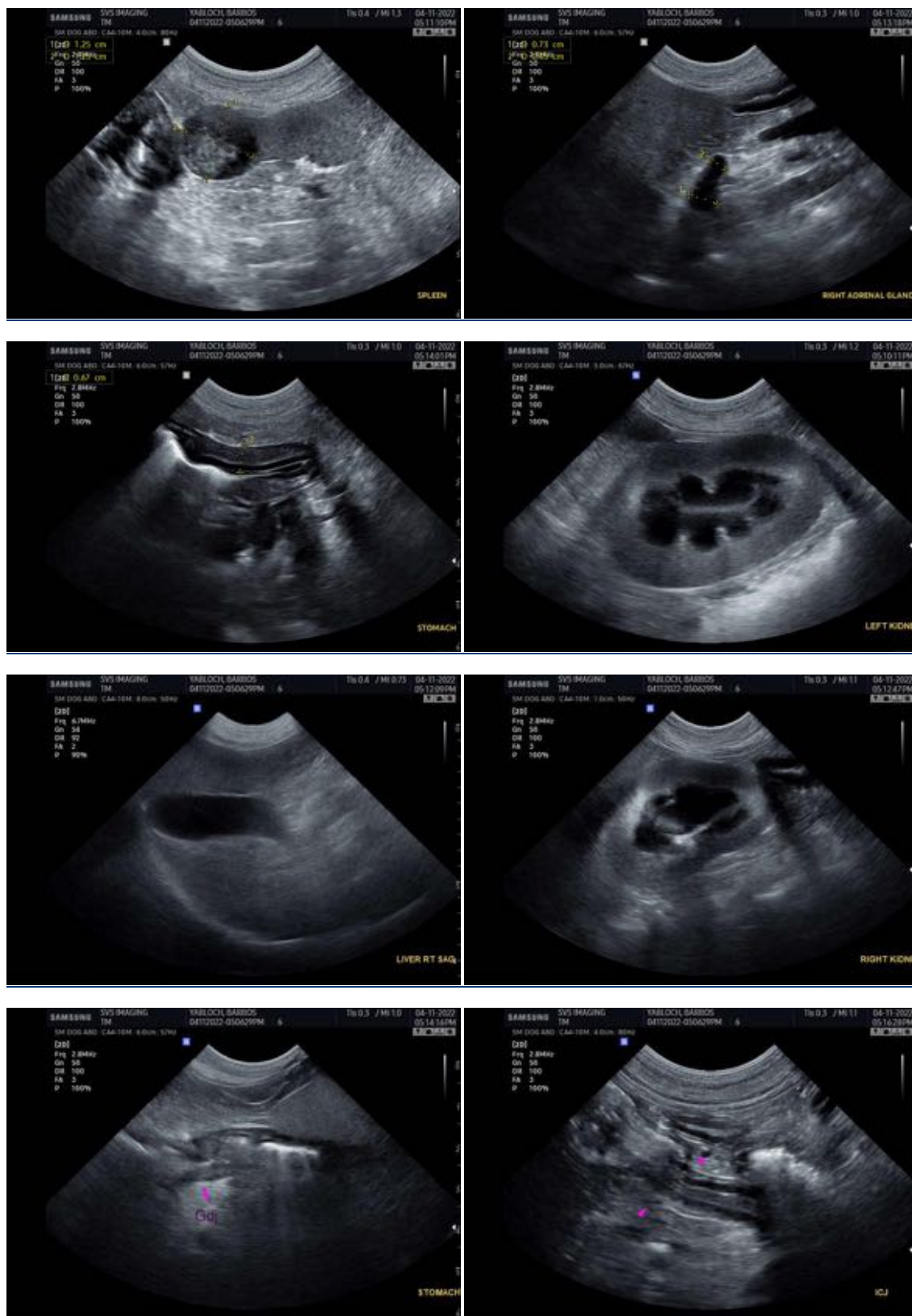
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The information and recommendations provided are based on the images presented by the referring



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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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