SonoPath
Clinical Sonography & Telecytology
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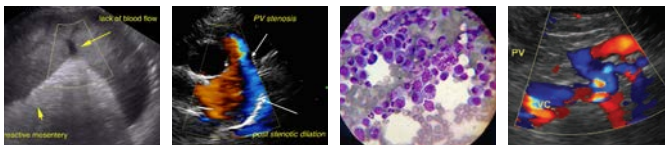

SonoPath.com™
1-800-838-4268 info@sonopath.com

PATIENT
Maxx Tirado

SPECIES
Canine

BREED
Chihuahua X

SEX
Neutered Male

AGE
14 Years

WEIGHT
14 Pounds

INTERPRETED BY
Kathleen Sennello DVM, MS, Diplomate ACVIM (Small Animal Internal Medicine)

IMAGING PERFORMED BY
Dr. Ferrer

HOSPITAL NAME
Paseos Vet Center

REFERRING VET
Dr. Marylin Davila

INVOICE
43803

DATE
7/13/23

PRESENTING CLINICAL SIGNS

The patient presented as a referral for an abdominal ultrasound to evaluate increased liver enzymes. Pt presented to rDVM due to vomiting and diarrhea for 3 days. Maxx seems lethargic and inappetence. Ultrasound to rule out GB mucocele, hepatopathy or Cushing's disease.

Abnormal PE/Chem/CBC/UA Results: CBC MPV: 14.6 (8.7-13.2) PCT: 0.49 (0.14-0.46) CHEM TP: 10.3 (5.2-8.2) ALB: 5.1 (2.2-3.9) GLOB: 5.2 (2.5-4.5) ALT: 129 (10-125) ALKP: 247 (23-212) TBIL: 3.7 (0.0-0.9) Fecal: NOS

ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN

Urinary System

The urinary bladder is moderately distended with anechoic urine. The Bladder wall, trigone, ureteral papillae and visible urethra (to a depth of 2cm) appear normal with no evidence of wall thickening, mucosal irregularities, masses or cystic calculi.

The prostate is normal in size (0.89 cm) and shape for this neutered male dog. The parenchyma is homogenous and the external margins are smooth. The prostatic urethra appears normal with no evidence of irregularity, invasion, mass effect or calculi.

The left kidney has a normal shape and size (4.33 cm). Overall echogenicity is normal with adequate corticomedullary distinction and a typical 1:3 cortex:medulla ratio. There is no evidence of focal perinephric inflammation or effusion. There is no evidence of pyelectasia, nephroliths, infarcts or hydroureter. Renal vasculature is normal.

The right kidney has a normal shape and size (3.92 cm). Overall echogenicity is normal with adequate corticomedullary distinction and a typical 1:3 cortex:medulla ratio. There is no evidence of focal perinephric inflammation or effusion. There is no evidence of pyelectasia, nephroliths, infarcts or hydroureter. Renal vasculature is normal.

Adrenal Glands

The left adrenal gland is normal in size measuring 0.54 cm at the caudal pole. It is observed in its normal position cranial to the left renal artery. It is normal in appearance (uniformly hypoechoic) and shape with no evidence of a mass effect.

The right adrenal gland is normal in size measuring 0.32 cm at the caudal pole. It is observed in its normal position between the cranial aspect of the right kidney and the caudal vena cava. It is normal in appearance (uniformly hypoechoic) and shape with no evidence of a mass effect.

Spleen

The spleen is normal in size but slightly irregular in shape. The blood flow through the hilus and splenic parenchyma appears normal. There is a hyperechoic nodule on the periphery of the spleen measuring 0.60 cm x 0.30 cm, most consistent with a myelolipoma. Additionally, there is a mixed echogenic nodule visualized measuring 0.81 cm x 1.24 cm, which deviates the splenic capsule.

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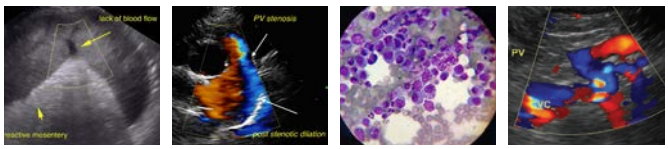

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Liver

The liver is large in size, and normal in echogenicity with smooth peripheral margins. The parenchyma is heterogenous in echotexture with subtle, indistinct focal mottling. The visible portions of the vasculature and biliary tract appear normal. There are occasional hyperechoic nodules visualized within the parenchyma, examples of which measure 0.66 cm x 0.90 cm and 0.73 cm x 0.99 cm.

The gall bladder lumen is significantly distended. Some areas of the wall appear mildly thickened with adherent debris. There is a large amount of primarily non-organized echogenic debris. There is no evidence of bile duct dilation.

Gastrointestinal

The stomach contains mild/moderate fluid and shadowing material. It measures at a normal thickness of <0.7cm with some variability due to the presence of rugal folds. The distinction of the gastric wall layers is adequate and there is no impression of reduced peristaltic activity. In the pyloric region there is some fluid and shadowing fluid that appears to extend into the pylorus/proximal duodenum. This is relatively soft shadowing. No evidence of an obstruction is observed.

The visualized areas of duodenum, jejunum and ileum have a relatively uniform diameter with minimal fluid distension. Wall thickness is normal. Bowel loops follow a curvilinear path with distinct wall layering maintaining the typical 1:3 muscularis:mucosa layer ratio. Duodenum wall measures 0.38 cm. Jejunum wall measures 0.26 cm. Visualized peristalsis appears appropriate. There were no focal lesions consistent with obstruction or a mass effect observed.

The ileocecal junction was visualized and exhibited normal intact wall layering and is subjectively of normal thickness. The ascending colon appears dilated with fluid and gas at the ileocecal junction. There is no observed focal or generalized colon wall thickening or loss of layering. Colon wall measures 0.13 cm.

Pancreas

The pancreas is normal and isoechoic to surrounding mesentery. There is no evidence of nodules or cystic lesions. There is no evidence of regional mesenteric inflammation or fluid.

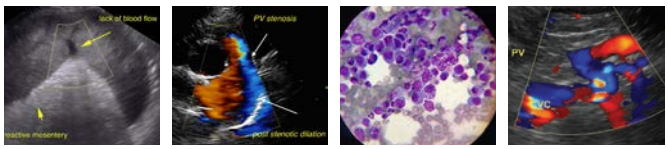
Free Abdomen

Evaluation of the peritoneal cavity did not reveal any evidence of effusion. There is an occasional prominent mesenteric lymph node. One such lymph node is visualized at 0.40 cm.

ULTRASONOGRAPHIC FINDINGS

- Mixed echogenic splenic nodule – There is a non-cavitated, mixed echogenic splenic nodule visualized. Differentials include lymphoid hyperplasia, extramedullary hematopoiesis, infiltrative neoplasia, inflammation, other. Cytology or histopathology would be necessary to get a definitive diagnosis.

- Large, heterogeneous liver with occasional hyperechoic nodules – The diffuse hepatic changes are non-specific and could be consistent with vacuolar hepatopathy, nodular hyperplasia, inflammatory/immune-mediated disease, fibrosis, extramedullary hematopoiesis, toxic hepatopathy (e.g., copper), infiltrative neoplasia (less likely) or other hepatopathy. The appearance of the hyperechoic nodules trends towards a benign process.



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- Distended gallbladder with a large amount of non-organized intraluminal debris and no evidence of wall thickening – A large amount of debris is evident in the gall bladder with no evidence of a mucocele or associated inflammation at this time. This could represent an early mucocele or cholestasis, with minimal evidence of associated inflammation at this time. Continued monitoring of labwork and ultrasound are warranted for progression of this lesion. Ursodiol therapy could be considered.

- Soft shadowing ingesta and fluid visualized within the pyloric region of the stomach – Correlate with abdominal radiographs and the feeding history. If the patient was adequately fasted, consider the possibility of delayed gastric emptying or soft shadowing foreign material. An obstruction is not evident at this time.

- Prominent mesenteric lymph node – The prominent abdominal lymph nodes are most consistent with reactive lymphadenitis or lymphoid hyperplasia. Neoplastic infiltration is considered less likely.

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

The liver is large and heterogeneous with occasional hyperechoic nodules. The appearance of these nodules trends towards a benign process, and the changes observed in the liver are non-specific. The liver enzyme elevations are relatively mild compared to the bilirubin elevation. Consider rechecking a bilirubin on a confirmed fasted/non-lipemic and non-hemolyzed sample to confirm. If the bilirubin elevation is confirmed, there could be some degree of cholecystitis present, although I do not see significant wall thickening or inflammation around the gallbladder. You could consider Ursodiol therapy and a course of antibiotics (using concurrent probiotics spaced at least two hours apart) to see if that helps the liver values. Additionally, a fine needle aspirate of the liver and screening for Leptospirosis could be helpful.

On some views of the pyloric region of the stomach there is some fluid and shadowing material. The shadowing material is visualized extending into the pylorus and the proximal duodenum. It is soft shadowing and there is not a significant evidence of obstruction, but given the history of vomiting, recommend continued monitoring for possible ingested foreign material, delayed gastric emptying, etc.

There is a small mixed echogenic nodule visualized in the spleen. This does deform the splenic capsule, which increases my concerns for a possible neoplastic process. Options moving forward would include a fine needle aspirate, continued monitoring with ultrasound, etc.

Recommend three view thoracic radiographs to evaluate for possible concurrent thoracic disease/involvement.

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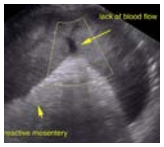
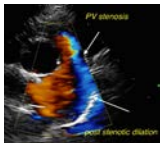
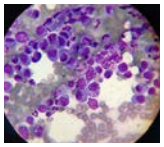
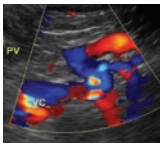

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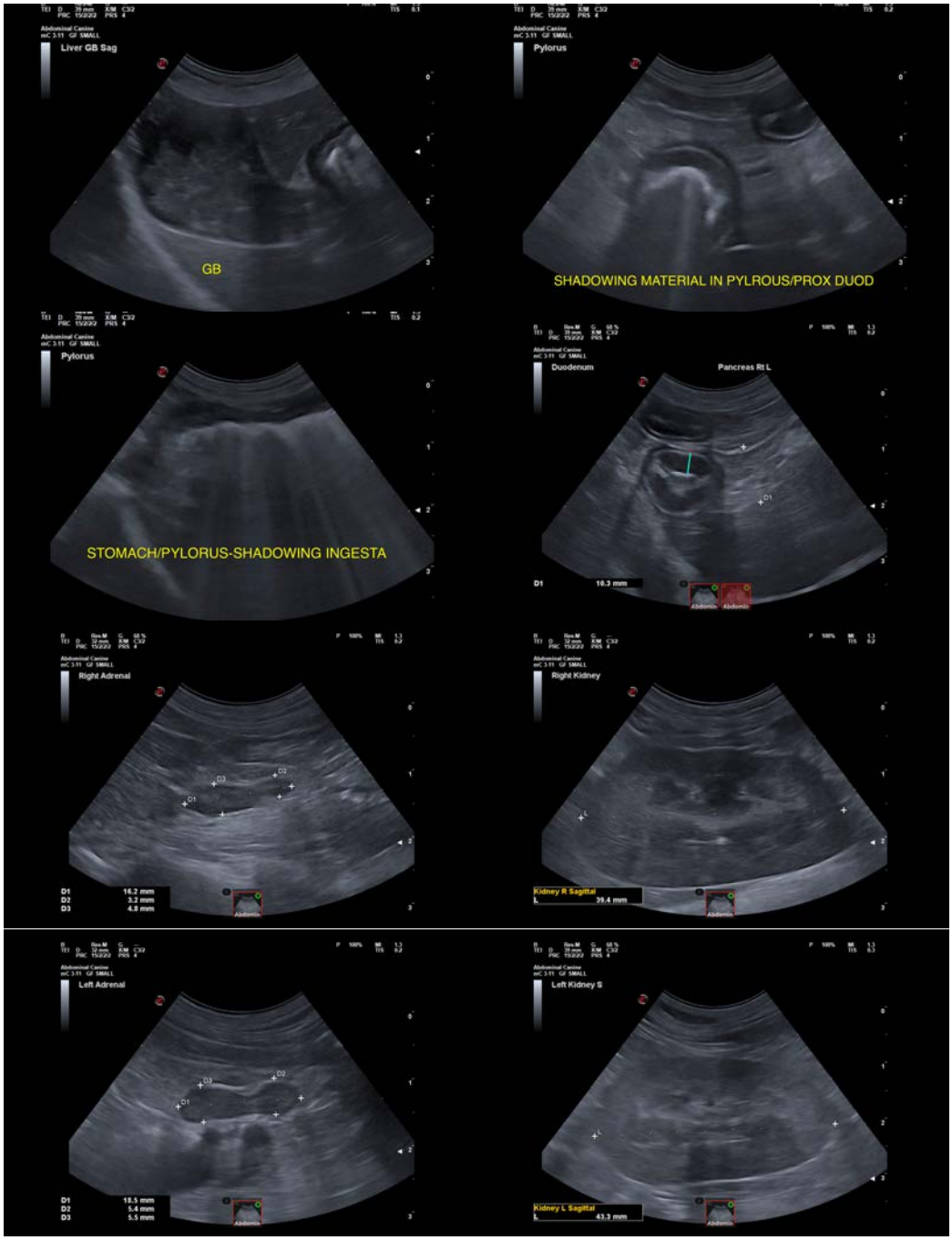

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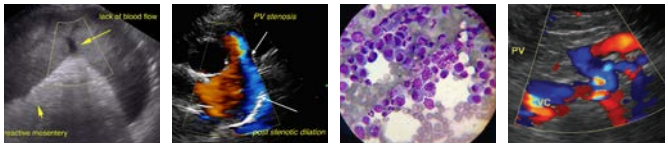

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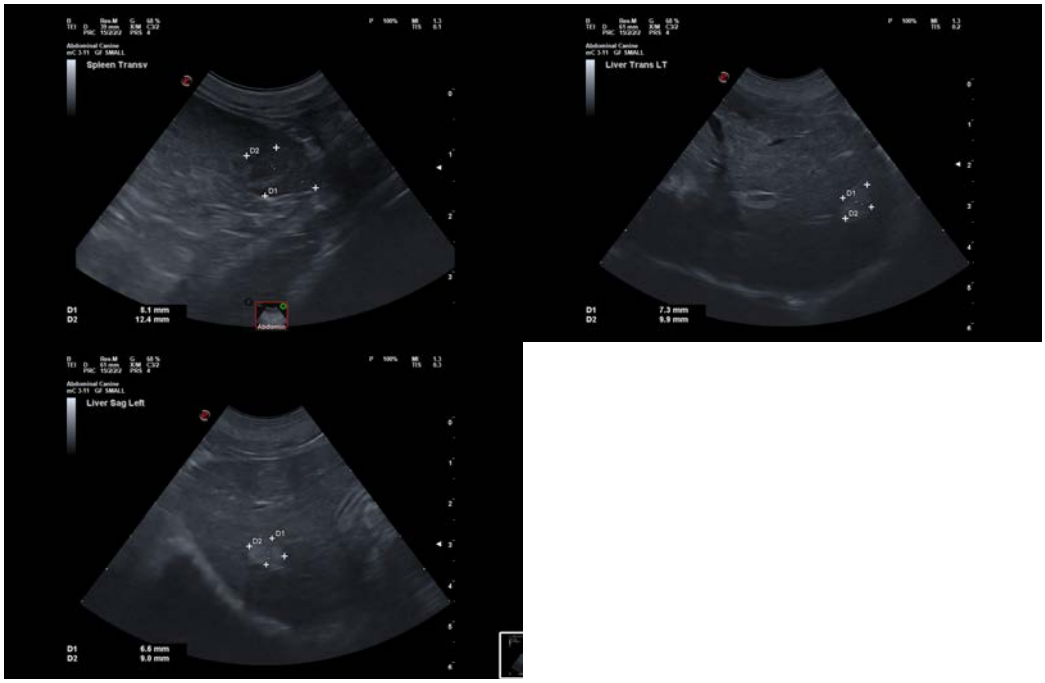

The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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.

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