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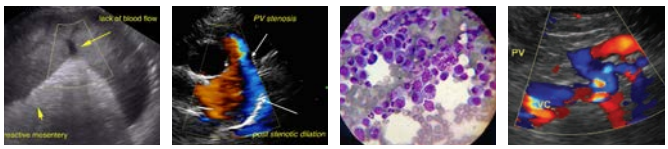

SonoPath.com
1-800-838-4268 info@sonopath.com

PATIENT
Guthrie Schultz

SPECIES
Canine

BREED
Doberman Pinscher X

SEX
Spayed Female

AGE
14 Years

WEIGHT
35.4 kg

INTERPRETED BY
Beth Johnson, DVM DACVIM

IMAGING PERFORMED BY
Patti Mayfield, DVM

HOSPITAL NAME
Emergency Vet Hospital

REFERRING VET
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INVOICE
43680

DATE
7/1/23

PRESENTING CLINICAL SIGNS

P presented on 7/1/23 at 1130 AM. O stated that about 2 weeks ago P started to become inappetent (very picky which is not normal) On 6/30/23 O noticed P not wanting to eat or drink and gums a light pink, then today on their walk she urinated on the pathway and then collapsed. TREATMENTS: 1.) IV catheter, obtained blood for analysis; PCV/TP: 32%/6.1 g/dL ** possibly spurious due to discordant CBC findings; same venipuncture sample ** 2.) LRS bolus 10 mL/kg IV over 30 mins (350 ml), then @ 70 mL/hr CLIENT COMMUNICATION: -- Discussed PE, FAST ultrasound findings and concerns for possible hemoabdomen, coupled with splenic and hepatic changes, this could be from internal hemorrhage 2 to those lesions/neoplasia, however those changes could be benign and incidental findings in the event this is anaphylaxis. -- Recommend treatment/stabilization and further diagnostics, including full AUS with sampling (liver/spleen, if coags are stable). -- Gave guarded prx if the ascites is secondary to hepatic/splenic changes. -- Gave fair prx if because of anaphylaxis, with understanding there may be incidental sinister issues at play. -- Clients approve estimate. 3.) Diphenhydramine 2.2 mg/kg IM 4.) Cerenia 35 mg IV (1 mg/kg) 5.) Epinephrine 0.01 mg/kg IM (0.35 mg) following IVF bolus PROGRESS 3 pm: -- Patient is resting quietly, ventrally. Abdomen appears slightly more distended. Mild dyspnea/tachypnea persists.

Abnormal PE/Chem/CBC/UA Results: PE: -- weak, pale pink/tacky mm's. Dehydrated ~ 5-6%. -- CV: NSR, NMA, tachycardia, thready, but synchronous pulses. Moderate dyspnea/tachypnea, no obvious C/W. TFAST: -- No pericardial effusion, nor obvious pleural effusion. No noted RA or R auricular mass. AFAST: -- Urinary bladder is unremarkable -- Mild to moderate ascites in the cranial abdomen, at the margins of the liver/spleen, and interlobar (hepatic). Unable to access with FNA at this time, due to location and poor patient compliance. -- Spleen retains normal symmetry and margins, no obvious masses, however generalized mottled appearance to the parenchyma that indicates possible infiltrative disease. -- Liver is generally enlarged, with specific lobar enlargement of the right lobe and a well-demarcated intra-parenchymal mass/lesion with hypoechoic and possible nodular change, however there is no obvious site of rupture our source of potential hemorrhage. -- gallbladder is small with NO obvious halo effect and no signs of obstruction. CBC: -- Normal erythrogram, HCT: 50.5 % -- Normal leucogram, mild basophilia, 180/uL (0-100) -- Normal platelets CHEM-17: -- Mild hyperchloremia, 127 mmol/L (109-122) -- All else wnl PT: -- wnl at 12 sec (11-17) PTT: -- wnl at 75 sec (72-102) 3-VIEW THORACIC RADS: -- Cardiac silhouette is unremarkable, with no obvious cardiomegaly. There is no obvious pneumothorax or pleural effusion. Trachea appears well-positioned. No mediastinal pathology appreciated. Diffuse and mild interstitial pulmonary parenchymal pattern with possible fluid fissure lines and a region of increased opacity in the perihilar space that may represent lymph nodes. -- Additionally, there are changes within the L middle lung lobe that could represent bullae, however does not appear ruptured. -- Spondylosis T9-T10 12.) 3-VIEW ABDOMINAL RADS: -- Abdominal wall intact, increased opacity and loss of serosal detail consistent with motion artifact and known ascites. No evidence of gastric or intestinal obstruction. Splenic and hepatic margins are rounded and slightly nodular. -- Spondylosis T13-L3, L6-7 US-guided FNA of the liver and spleen-- slides submitted to IDEXX for cytology review US-guided FNA of the mid-abdominal mass-- consistent with lipid ASCITES FLUID ANALYSIS: -- BG: 176 mg/dL, lactate: 3.8 -- T.P.: 4.6 g/dL -- Cytology: crenated RBCs

ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN

Urinary System

The urinary bladder is moderately distended with anechoic contents. No masses, inflammatory changes, echogenic sediment or cystoliths are observed. The urinary bladder, trigone and visible pelvic urethra are normal in thickness with a smooth mucosal surface.

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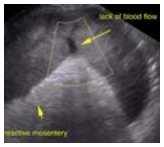
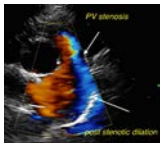
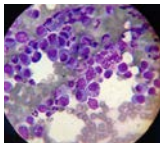
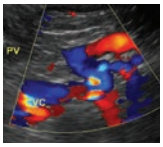

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The right kidney is normal in size (cm), shape and echogenicity. It has smooth peripheral margination. There is a normal 1:3 cortex to medulla ratio with appropriate corticomedullary distinction. There is no evidence of pyelectasia, mineral or infarcts observed. The left kidney measured 6.58 cm. The right kidney measured 7.59 cm.

The left kidney is normal in size (cm), shape and echogenicity. It has smooth peripheral margination. There is a normal 1:3 cortex to medulla ratio with appropriate corticomedullary distinction. There is no evidence of pyelectasia, mineral or infarcts observed.

Adrenal Glands

The right adrenal gland is normal in size (1.1 cm at the cranial pole and 0.78 cm at the caudal pole), shape and contour. Corticomedullary structure is unremarkable. Visible surrounding vasculature appears normal.

The left adrenal gland is normal in size (0.61 cm at the cranial pole and 0.63 cm at the caudal pole), shape and contour. Corticomedullary structure is unremarkable. Visible surrounding vasculature appears normal.

Spleen

Spleen is subjectively normal in size with normal smooth margins. Parenchyma is normal in echogenicity with a coarse/heterogenous echotexture. No distinct focal nodules or masses are observed. Splenic vasculature appears normal.

Liver

Liver is subjectively enlarged (swollen contour) without disruption of architecture. It has a normal homogenous echotexture. Parenchyma is diffusely hyperechoic characterized by less prominent than normal portal vein walls and increased echogenicity relative to the spleen and falciform fat. In the caudal mid liver there is a liver lobe that is mottled by multifocal discrete hypoechoic nodules of varying size ("moth-eaten"), resulting in an overall mass-like appearance to the lobe. Visible vasculature and biliary tree appear normal without distension or congestion.

The gallbladder is non-distended in size. The wall is smooth without visible thickening. Luminal contents are primarily anechoic. There is no evidence of cystic or common bile duct dilation.

Gastrointestinal

The stomach wall is normal in thickness (canine < 0.5 cm and feline < 0.4 cm) and layering. The lumen of the stomach is empty with no evidence of obstruction, foreign material or infiltrative disease. Pyloric outflow tract appears patent.

The visible small intestines are normal in wall thickness and layering (canine duodenum < 0.5 cm and feline duodenum < 0.4 cm; other < 0.3 cm). Small intestinal motility appears adequate (1-3 contractions per min). The lumen of the small intestine is empty with no evidence of obstruction, foreign material or infiltrative disease.

The visible colon is normal in wall thickness (< 0.2 cm) and layering. Contents are consistent with normal formed feces and gas.

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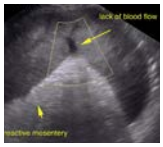
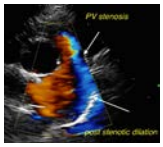
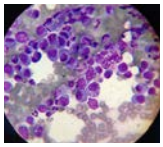
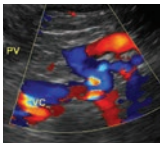

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Pancreas

The pancreatic parenchyma is appropriately isoechoic to surrounding tissue. Visible capsule is smooth and normal in contour. There is no visible pancreatic duct dilation. There is no evidence of active peripancreatic inflammation.

Free Abdomen

There is no apparent lymphadenopathy noted in these images.

There is a 5.0 cm x 8.0 cm, homogeneous, relatively iso- to slightly hypoechoic mid abdominal mass reportedly diagnosed cytologically as a lipoma.

There is a moderate to large amount of anechoic appearing free fluid as well as a large amount of enhanced hyperechoic mesenteric fat, primarily in the cranial abdomen around the nodular liver lobe and spleen.

There is no evidence of heart base or pericardial pathology noted in these images at this time. If cardiac function evaluation is desired a full echocardiogram is recommended.

ULTRASONOGRAPHIC FINDINGS

- Diffusely hyperechoic hepatomegaly with a mid caudal nodular liver lobe - This appearance is non-specific and most consistent with a benign steroid (endocrine) or vacuolar hepatopathy or reactive or idiopathic hepatopathy. Inflammatory and/or infiltrative disease (such as round cell neoplasia) are also possible but considered less likely. The mid caudal nodular liver lobe is concerning for infiltrative neoplasia such as round cell neoplasia, metastatic neoplasia, other. Benign nodular hyperplasia, etc. can't be ruled out but is considered less likely, given the focal nature and the surrounding pathology/changes consistent with focal peritonitis/inflammation.

- Coarse splenic parenchyma – can be associated with congestion caused by sedation (if sedated) but can also be associated with diffuse infiltrative disease. Both benign conditions such as extramedullary hematopoiesis, lymphoid hyperplasia, as well as infiltrative neoplastic diseases such as round cell neoplasia should be considered.

- Free fluid – Hemoabdomen should be ruled out, as should paraneoplastic effusion, as is seen with carcinomatosis versus other. Beyond that, differentials include decreased venous return/increased hydrostatic pressure possibly related to the abdominal pathology or occult cardiac disease versus other, decreased osmotic pressure, vasculitis, etc.

- Mid abdominal mass – Reportedly diagnosed as an intraabdominal lipoma.

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

As is reportedly pending, fine needle aspirates of the liver and spleen are recommended for cytologic evaluation, since this patient's coagulation status is reportedly normal. Additionally, full fluid analysis and cytology on the free fluid is recommended and is reportedly pending.

A blood pressure is recommended if not recently evaluated.

Ultimately, given the reported respiratory changes, a full echocardiogram should be considered.

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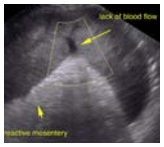
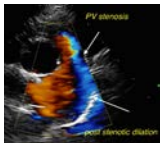
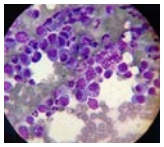
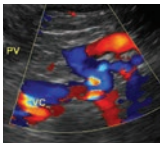

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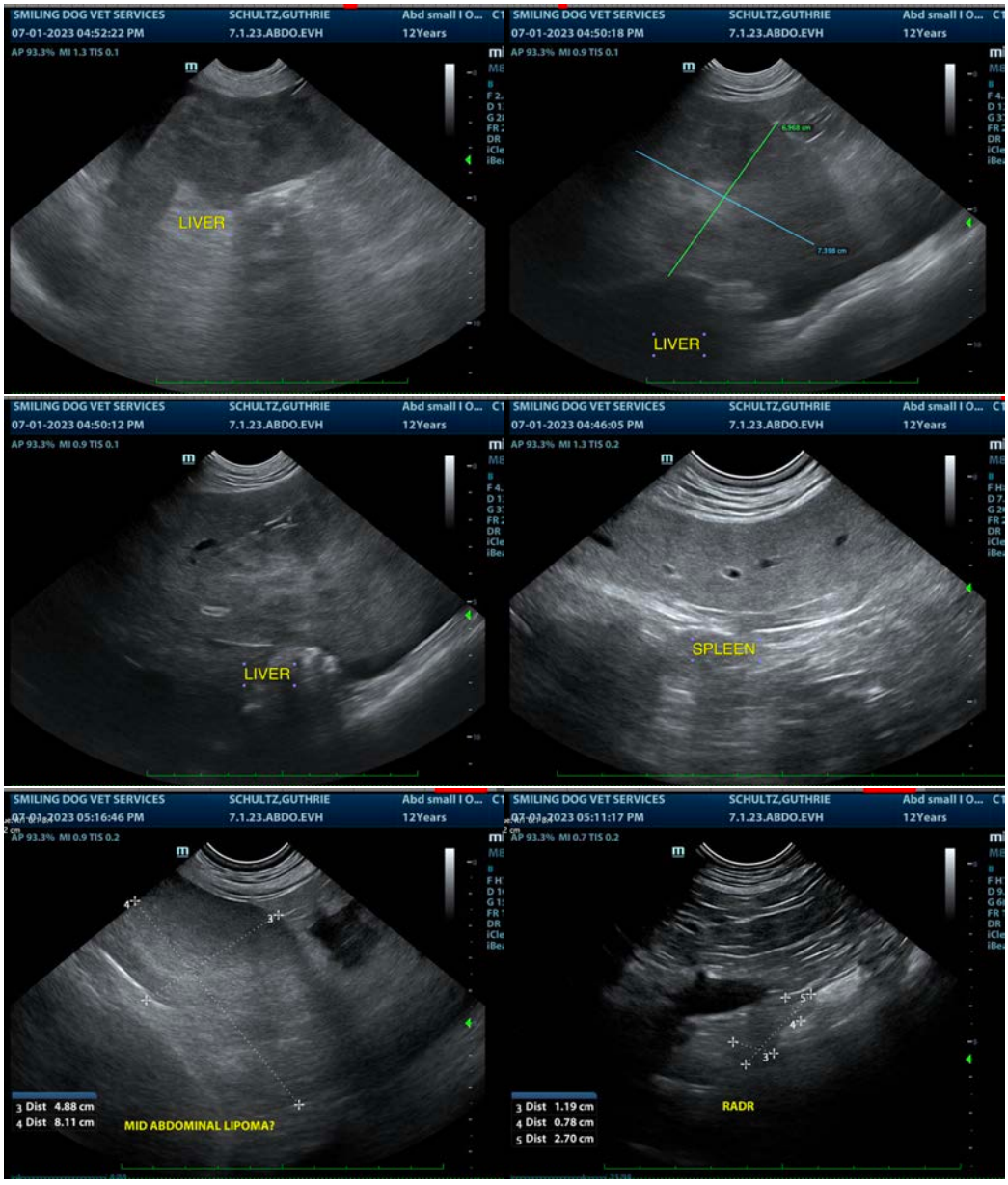
In the meantime, other differentials for this patient's respiratory distress could include pulmonary thrombus, which can be difficult to diagnose radiographically. Therefore, while awaiting diagnostic results in addition to supportive/symptomatic therapy, oxygen therapy could be beneficial.



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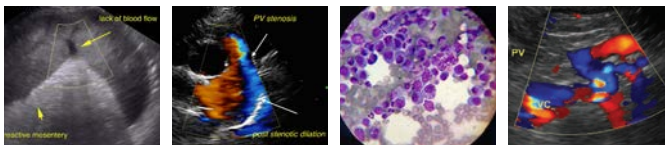

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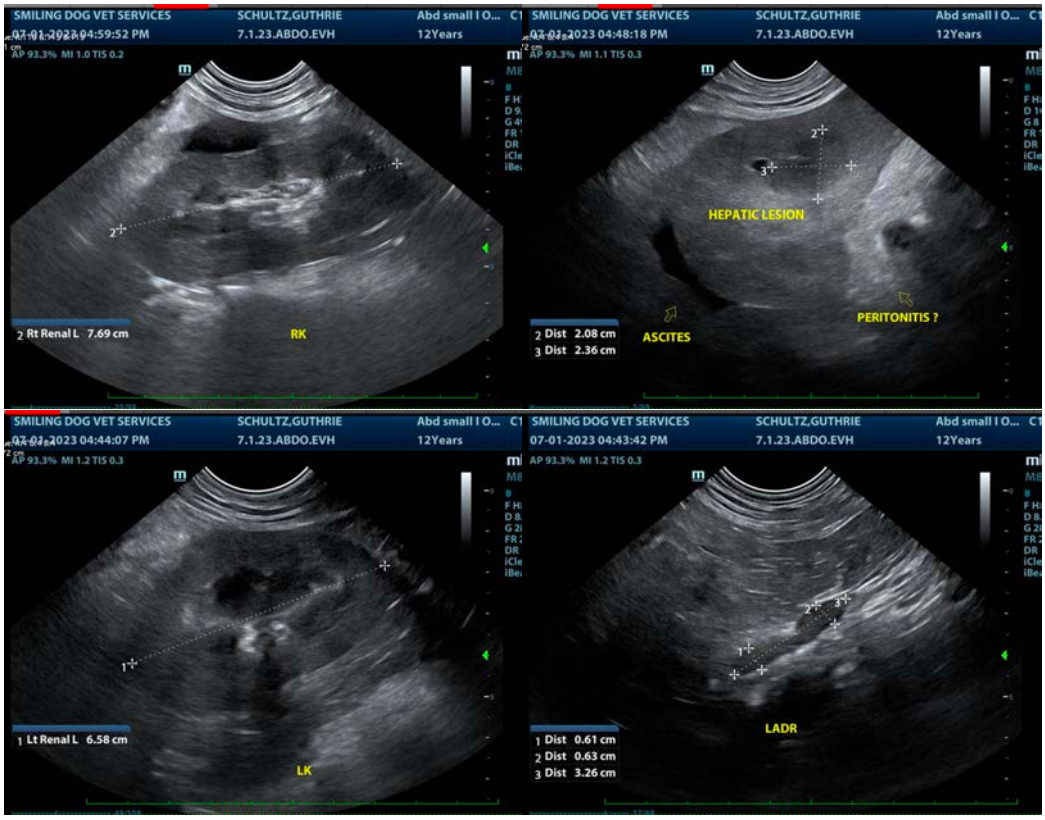

The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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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