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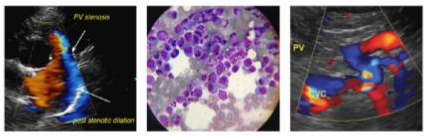

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Clinical Sonography & Telecytology
EDUCATIONAL TELECONSULTATION SERVICES™
1-800-838-4268 info@sonopath.com SonoPath.com

PATIENT

Mia Greene 54199

SPECIES

Canine

BREED

Golden Retriever

SEX

Spayed Female

AGE

14 Years

WEIGHT

28 kg

INTERPRETED BY

Beth Johnson, DVM DACVIM

IMAGING PERFORMED BY

Tom McNeil

HOSPITAL NAME

SVS Imaging CT

REFERRING VET

Madison VS- Dr. Maller

INVOICE

17908

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PRESENTING CLINICAL SIGNS

History: Mia presented to the MVS Emergency Service on Oct 24, 2022, at 10am for evaluation of coughing/gagging. Coughing/gagging started about 6/12 month ago. Within the last week, it has gotten progressively worse. Friday (10/21/22), owner took Mia to PCDVM where x-rays were taken, possibly showing a mass in the throat. 3 years earlier, Mia has a mass removal on the neck, PCDVM not sure what the mass was or related to what is going on now. Appetite has decreased significantly, Mia has only eaten pieces of steak over the weekend. Also having moments of labored breathing, typically seen at night. Labored breathing was more of a couch with a terminal retch at the end. No regurgitating, dysphagia or vomiting noted when eating or drinking. No stridor noted by owners.

Abnormal PE/Chem/CBC/UA Results: ALKP- 371 (23-212) GGT- 12 (0-11) Na- 161 (144-160) HCT - 33.7 (37.3-61.7) HGB - 12.2 (13.1-20.5) MCV - 58.4 (61.6-73.5) MCH - 21.1 (21.2-25.9) WBC - 17.39 (5.05-16.76) NEU- 11.99 (2.95-11.64) MPV - 14.0 (8.7-13.2) Thoracic radiographs- Suspect enlarged sternal LN, Interstitial to alveolar pattern around the middle and caudal lung lobes (worse on left > right)

ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN

Urinary System

Urinary bladder is adequately 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.

Left kidney is normal is size (6.19 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. There is a 0.43 cm anechoic cortical cyst noted in the left kidney.

Right kidney is normal is size (6.47 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

Left adrenal gland is normal in size (0.78 cm at cranial pole and 0.75 cm at caudal pole), shape and overall architecture, echogenicity and echotexture. Visible surrounding vasculature appears normal.

Right adrenal gland is normal in size (0.46 cm at cranial pole and 0.8 cm at caudal pole), shape and overall architecture, echogenicity and echotexture. Visible surrounding vasculature appears normal.

Spleen

Spleen is subjectively normal in size with a normal smooth capsular contour. Parenchyma is appropriately finely textured and homogenous with normal echogenicity relative to surrounding tissue (hyperechoic to liver). Multifocal well-demarcated hyperechoic homogenous nodules are noted. Splenic vasculature appears normal. The spleen contains a hypoechoic nodule that is about 0.7 cm x 0.8 cm in size and is non-capsule-disrupting. A larger more heterogenous appearing hypoechoic nodule/mass that does cause a capsular bulge, measuring 1.5 cm x 2.5 cm in size.

Liver

Liver is subjectively normal in size with normal smooth curvilinear peripheral contour. Parenchyma is appropriately hypoechoic to the spleen in echogenicity and appropriately mildly coarse and

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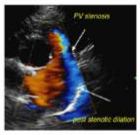
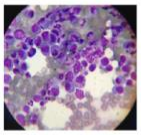
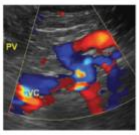

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homogenous in echotexture. Visible vasculature and biliary tree appear normal without distension or congestion. A small <1.0 cm discreet hyperechoic nodule was noted in the left liver, as well as a heterogenous 5.0 cm x 6.0 cm mass in the mid caudal liver adjacent to the gallbladder.

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 visible stomach wall is normal in thickness and layering. The lumen of the stomach is mildly distended with very echogenic reverberation artifact from intraluminal gas. There is no evidence of obstruction, foreign material or infiltrative disease; however, complete visualization of far wall is partially inhibited by gas. Pyloric outflow tract appears patent.

The visible small intestine demonstrates areas of thick muscularis layer relative to mucosa (disruption of the normal 1:3 muscularis:mucosa ratio). Small intestinal submucosa is slightly irregular, thick and hyperechoic, without evident loss of layering appreciated. The lumen of the small intestine is empty with no evidence of obstruction or foreign material.

The visible colon is normal in wall thickness and layering. Contents are consistent with normal formed feces and gas.

Pancreas

The observed pancreas appears appropriately isoechoic to surrounding omental fat. Visible capsule is smooth and normal in contour. Visible pancreatic parenchyma is homogenous and unremarkable. There is no visible pancreatic duct dilation. There is no evidence of active peripancreatic inflammation.

Free Abdomen

There is no evidence of peritoneal effusion. The mesenteric lymph nodes are prominent in size with swollen capsular contour. Normal elongated shape (length to width ratio) is maintained. There is no loss of parenchymal detail.

ULTRASONOGRAPHIC FINDINGS

Primary Findings

- A heterogenous mid liver mass, most concerning for infiltrative neoplasia, such as primary hepatic neoplasia, i.e., hepatocellular carcinoma, benign hepatoma (less likely), infiltrative sarcoma or even round cell neoplasia.

- Hyperechoic splenic nodules– most consistent with benign myelolipomas. Other differentials such as fibrosis or calcification caused by old hematomas or infarcts, chronic inflammation, granulomatous disease or metastatic disease cannot be ruled out, but are considered less likely. In addition to hypo to anechoic splenic nodules – likely represents a benign lesion such as a cyst, hematoma, nodular hyperplasia, extramedullary hematopoiesis, etc., however while considered less likely, infiltrative neoplasia can mimic benign lesions, and cannot be ruled out.

- Inflammatory bowel disease (IBD) pattern – Thick muscularis has been reported with infiltrative bowel disease including both benign inflammatory disease as well as infiltrative neoplasia such as lymphoma. No aggressive lymphadenopathy, loss of layering, etc. is noted to make lymphoma more probable, but lymphoma cannot be definitively ruled out without tissue sampling.

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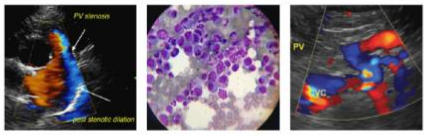

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- Reactive mesenteric lymph nodes – infiltrative neoplastic disease cannot be ruled out but is considered less likely

Secondary Findings

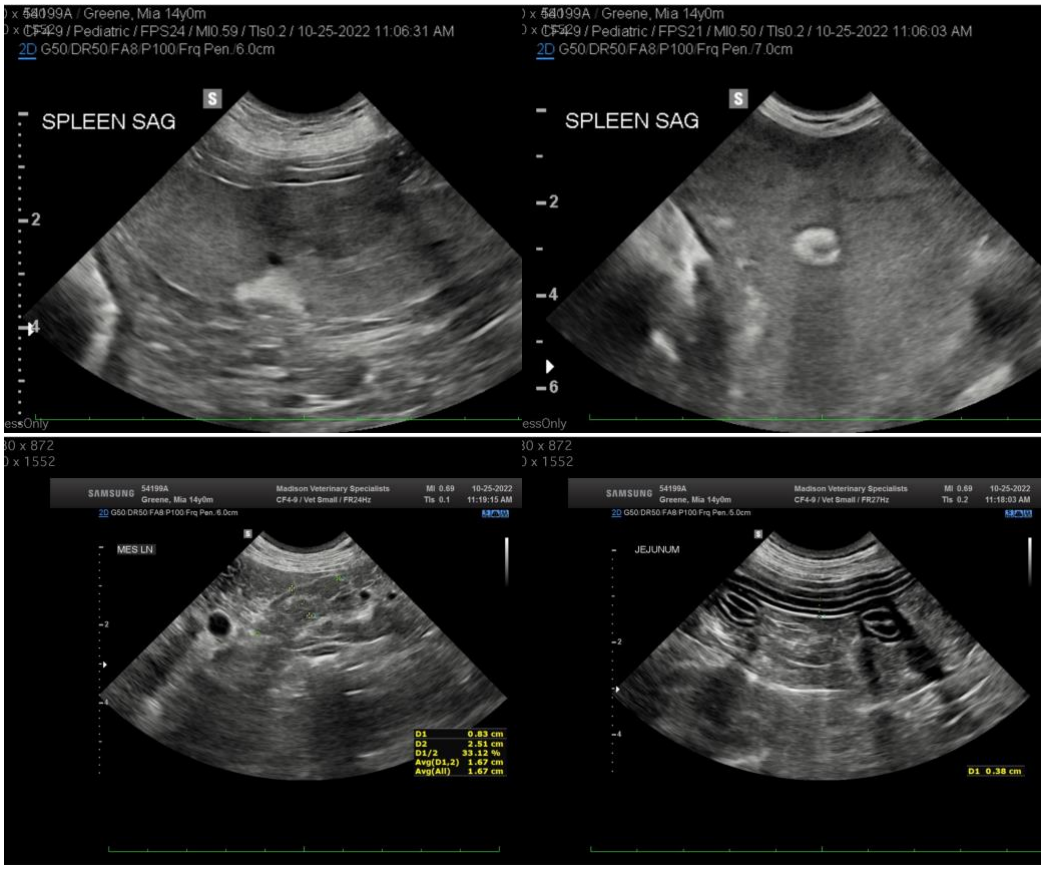
- A cortical cyst in the left kidney

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

A fine needle aspirate of the liver mass, as well as the spleen is recommended if patients coagulation status is appropriate.

This patients presenting gastrointestinal signs that potentially led to aspiration pneumonia given the reported radiographic findings may be due to underlying infiltrative bowel disease, possibly unrelated to the liver mass. Therefore, further evaluation and recommendations include a gastrointestinal malabsorption panel (including cobalamin, folate, TLI and PLI) to Texas A&M GI Laboratory is recommended for further evaluation of GI and pancreatic function +/- ultimately biopsies of the gastrointestinal tract pending results of the liver fine needle aspirate.

In the meantime, supportive/symptomatic medical management of the presumed aspiration pneumonia, as well as gastrointestinal signs is recommended in the form of antiemetics, gastroprotectants, as well as broad spectrum antibiotics +/- oxygen therapy if necessary.



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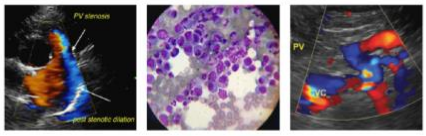

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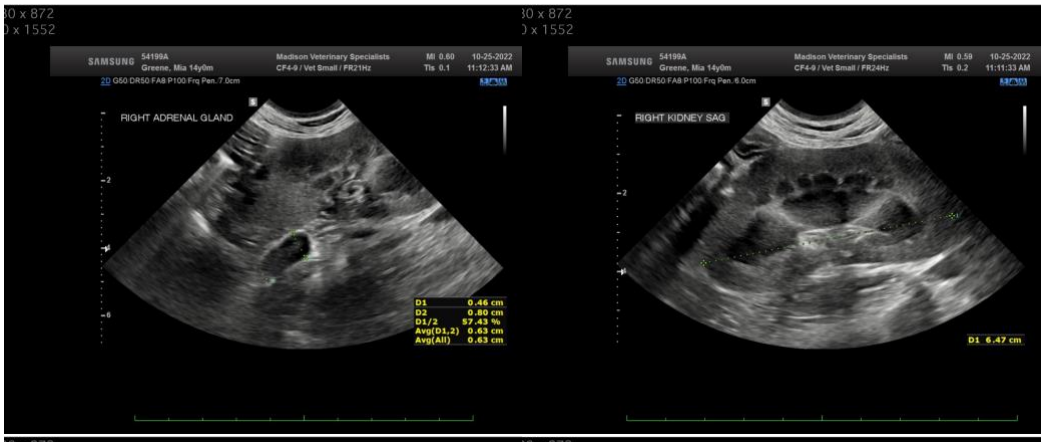

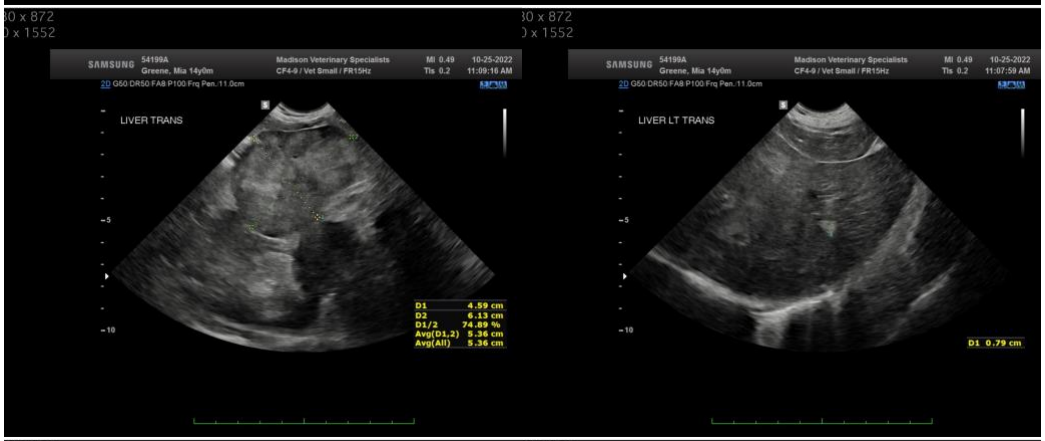

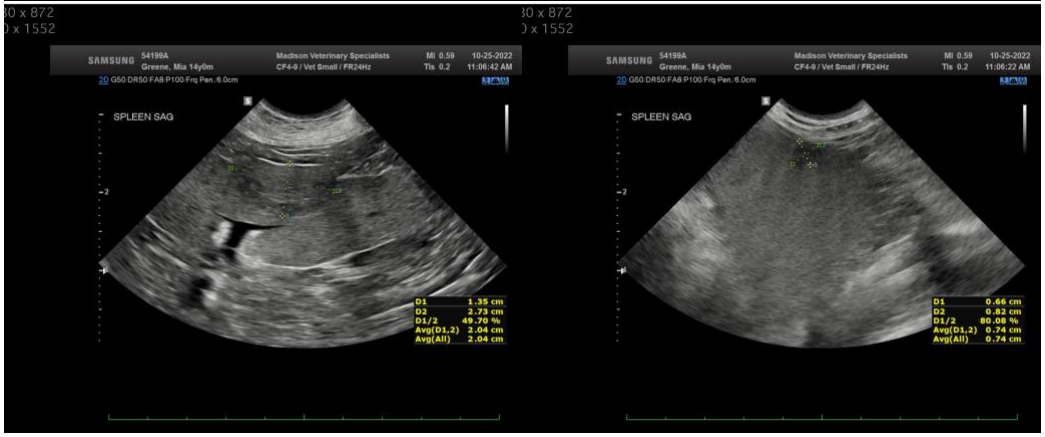

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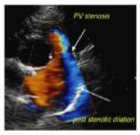
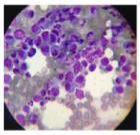
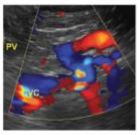

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The information and recommendations provided are based on the images presented by the referring veterinarian. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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.

Beth Johnson, DVM DACVIM

Beth.Johnson@SonoPath.com