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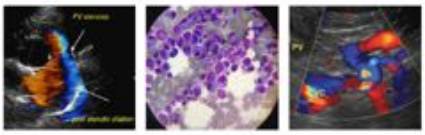

SonoPath
Clinical Sonography & Telecytology
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PATIENT
Kenzie Carr

SPECIES
Canine

BREED
Sheltie

SEX
Spayed female

AGE
8 years

WEIGHT
24 lbs

INTERPRETED BY
Dr Brittany Sinclair, BVSc(hons), DACVECC

IMAGING PERFORMED BY
Amy Mayhew LVT

HOSPITAL NAME
SVS Imaging Michigan

REFERRING VET
Dr. Hendricks

INVOICE
42880

DATE
2/20/23

PRESENTING CLINICAL SIGNS

History: Presented for blood in urine. Acts nauseous when eating (hesitant, may spit out food).
Abnormal PE/Chem/CBC/UA Results: Pending UA and culture.

ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN

Urinary System

The urinary bladder, trigone, and visible pelvic urethra were of normal thickness. The ureters were not visible which is normal. There was normal wall layering with no masses, uroliths or abnormal thickening visualized. Urine was anechoic. No evidence of inflammatory or neoplastic changes were noted.

The kidneys were both normal size and structure, with smooth capsule and normal corticomedullary definition and ratio (cortex 1/3 of medulla). Medullary structure differed distinctly from that of the cortex. No evidence of pelvic dilation was present. The right kidney measured 5.44 cm. The left kidney measured 5.18 cm.

Adrenal Glands

Both adrenal glands were visualized and recognized as having normal shape, size, position and echogenicity for this breed. The phrenic vasculature, glandular echogenicity and detail were unremarkable. Capsule, cortex, and medullary definition were normal for this age patient. The left adrenal gland measured 1.97 cm in length and 0.74 cm at the cranial pole and 0.65 cm at the caudal pole. The right adrenal gland measured 2.29 cm in length, 0.83 cm at the cranial pole and 0.88 cm at the caudal pole.

Spleen

Multiple heterogenous to hypoechoic irregular non-cavitary masses in head of spleen measuring 3.5x3.4cm and second mass 1.8x2.7cm. Scant free fluid.

Liver

The liver is subjectively normal in size with normal contours and structure. There is appropriate echogenicity and echotexture. No overt structural evidence of inflammatory, infiltrative or regenerative pathology is evident. Vascular and biliary tracts are of normal volume with no evidence of congestion. No pathological hepatic lymphadenopathy observed. Gallbladder is moderately distended with normal wall thickness and anechoic contents. Common bile duct is non-distended and tapers normally

Gastrointestinal

The stomach contains minimal luminal contents. It measures at a normal thickness of 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. No masses or focal lesions were observed.

The visualized areas of duodenum, jejunum and ileum have a relatively uniform diameter with minimal fluid distension. Duodenal and jejunal walls contained areas of hyperechoic striation and pinpoint

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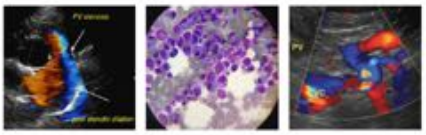

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hyperechoic foci. Wall thickness is normal. Bowel loops follow a curvilinear path with distinct wall layering maintaining the typical 1:3 muscularis:mucosa layer ratio. Visualized peristalsis appears appropriate. There were no focal lesions consistent with obstruction or a mass effect observed.

The ileocecal junction was visualized and exhibited normal intact wall layering and is subjectively of normal thickness.

Sections of colon are visualized with formed fecal material and gas shadowing distally. There is no observed focal or generalized colon wall thickening or loss of layering.

Pancreas

The base and limbs of the pancreas were observed to be largely isoechoic to surrounding omental fat. Pancreatic duct and capsular contour and parenchyma were normal. No overt evidence of active inflammatory or neoplastic disease was noted.

Lymph Nodes

No clinically significant lymphadenopathy or abnormalities noted.

Free Abdomen

A scant amount of free fluid was noted.

ULTRASONOGRAPHIC FINDINGS

Primary Findings

1. Splenic masses
2. Free fluid – reported clear
3. Small intestinal striations and hyperechoic foci

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

There is no overt cause of reported hematuria on abdominal ultrasound, urinary bladder and kidneys are within normal limits. Evaluation of urinalysis and culture, in conjunction with chem/cbc is warranted to further investigate possible causes.

Presence of free fluid may be secondary to inflammation induced by splenic masses, hypoproteinemia, congestive heart failure, or less likely portal hypertension. Submission of free fluid for fluid analysis and cytology is recommended. Correlation with current bloodwork findings is necessary for full interpretation. Thoracic radiographs to screen for cardiac and intra-thoracic disease and echocardiogram to screen for right sided heart failure as a cause of effusion could be considered.

Multiple splenic masses are concerning for neoplasia with primary differential being hemangiosarcoma, though the lack of cystic changes makes other masses possible. Splenic aspirate could be done to further characterize. Whether benign or malignant, all cavitary splenic masses are at risk of rupture and if no signs of metastasis are present in the chest and abdomen, splenectomy with histopathology should be considered.

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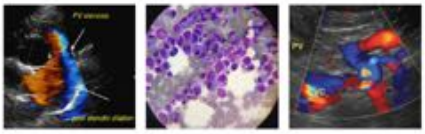

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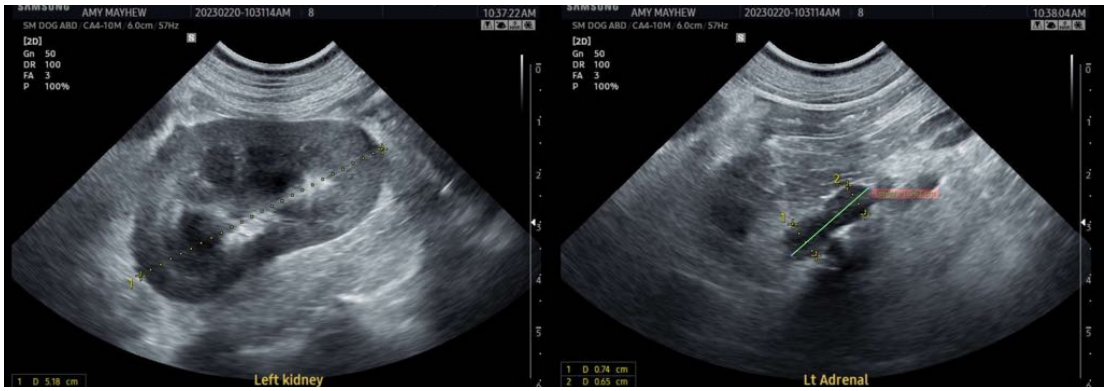
Primary splenic tumors include angiogenic tumors, lymphoid/round cell tumors, and nonangiogenic, nonhematopoietic tumors. Angiogenic tumors include hemangiosarcoma and hemangiomas. Hemangiomas are benign, whereas HSAs are the most common malignant splenic tumor in dogs. Lymphoid and other round cell tumors may include lymphoma, leukemia, mast cell tumor, plasma cell tumor/multiple myeloma, and histiocytic sarcoma. Nonangiogenic, nonhematopoietic tumors encompass a long list of uncommon splenic neoplasms, such as leiomyoma, leiomyosarcoma, extraskeletal osteosarcoma, chondrosarcoma, fibrosarcoma, lipoma, liposarcoma, myxosarcoma, rhabdomyosarcoma, undifferentiated sarcoma, melanoma, carcinoma, peripheral nerve sheath tumor, myelolipoma, and mixed mesenchymal sarcoma (mesenchymoma).

Small intestinal mucosal changes are most consistent with infiltrative disease of the small intestine with inflammatory bowel disease, lymphangectasia or GI lymphoma being the top differentials. No overt neoplastic criteria present in the bowel given that curvilinear layering is still intact which would suggest inflammatory bowel as opposed to round cell neoplasia (LSA, MCT and similar). Intraoperative US-guided bx would be optimal in this patient to obtain the most representative samples in the GI tract. I cannot rule out a preneoplastic (LSA) state however and follow-up sonograms recommended especially If the patient is not responding to empirical efforts. Endoscopic biopsy is less invasive but may miss lesions due to inability to sample more than top 1-2 layers of GI tract and inability to obtain samples from all sections of the GI tract. Surgical biopsies are more likely to be diagnostic but are more invasive. A GI panel (PLI/cobalamin/folate) will help determine the severity of SI dysfunction, and need for vitamin supplementation.



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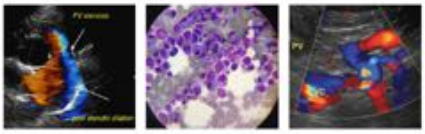

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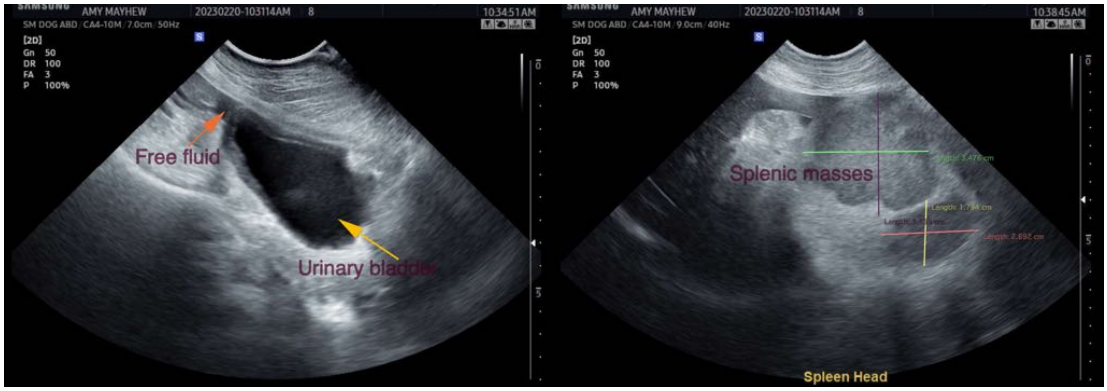

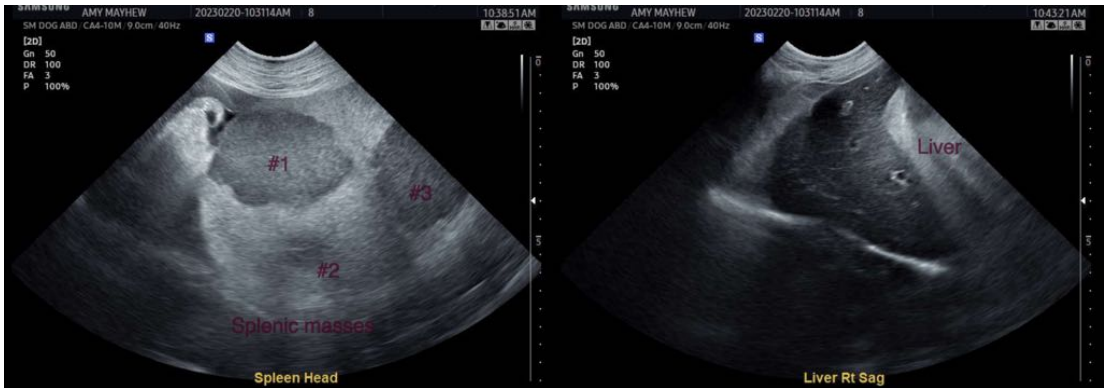

The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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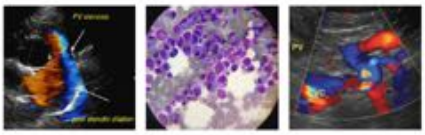

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Thank you for this referral. If the clinical or image interpretation does not parallel your findings or if I can be of any further assistance please contact me.

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