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Clinical Sonography & Telecytology
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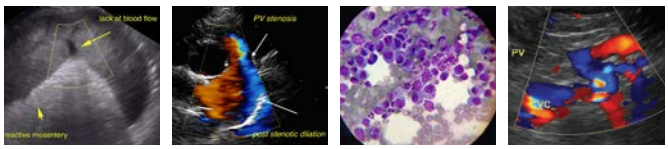

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1-800-838-4268 info@sonopath.com

PATIENT
Louise Tompkins

SPECIES
Canine

BREED
Husky

SEX
Spayed Female

AGE
15 Years

WEIGHT
21.5 kg

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

IMAGING PERFORMED BY
Erin Wicks

HOSPITAL NAME
Shores VEC

REFERRING VET
Dr. Miller

INVOICE
43934

DATE
1/5/23

PRESENTING CLINICAL SIGNS

At our hospital for AUS. Presented with dh and vomiting about 2 weeks ago, seen at urgent care, dx with pancreatitis and opted for outpatient tx. Got a little better the first 48hr and then worse again v/d. Rec AUS, pet has since gotten better, no more v/d, but o still wants to pursue AUS due to pets history. Previous Health Concerns: Lymphoma 2016 (in remission), toe amputation due to squamous cell carcinoma, IM Polymyositis Current Medications: meto, omeprazole, proviable, prednisone, gabapentin Appetite/When did they eat last: 6pm

Abnormal PE/Chem/CBC/UA Results: Bloodwork 12/26: ALT 167; AMY 1533

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 left kidney has a normal shape and size (5.87 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 (6.05 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 large and irregular, measuring 1.85 cm at the cranial pole, 1.82 cm at the caudal pole, and 4.16 cm in length. It is observed in its normal position cranial to the left renal artery. It is abnormal in that the parenchyma is heterogeneous and somewhat nodular, and there appears to be soft tissue invasion at the level of the phrenicoabdominal vein.

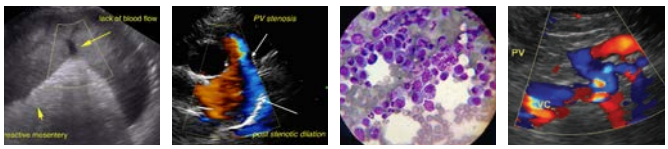
The right adrenal gland is normal in size measuring 0.69 cm at the caudal pole. It is observed in its normal position between the cranial aspect of the right kidney and the caudal vena cava. It is normal in appearance (uniformly hypoechoic) and shape with no evidence of a mass effect.

Spleen

The spleen is borderline large. The spleen echotexture is heterogenous and mottled, the splenic capsule is smooth with no irregularities. The blood flow through the hilus and splenic parenchyma appears normal. There are multiple hyperechoic nodules visualized in the head of the spleen measuring 0.71 cm, 0.80 cm, ad 1.0 cm.

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. No focal nodules or cystic lesions are observed.



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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 minimal luminal contents. 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. No masses or focal lesions were 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. The duodenum measured as normal (between 0.3-0.5cm in wall thickness) and the jejunum measured as normal (between 0.2-0.47cm.) 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 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, or subjective lymphadenomegaly. The Medial iliac nodes appear normal and there was no evidence of a caudal aortic thrombus at the bifurcation. The omentum is of normal uniform echogenicity.

ULTRASONOGRAPHIC FINDINGS

- Large, irregular, nodular left adrenal gland with possible vascular invasion – Left adrenomegaly could be consistent with neoplasia (e.g., adenoma, carcinoma, pheochromocytoma), hyperplasia, inflammation, other.
- Mildly mottled spleen with hyperechoic nodules – The diffuse splenic changes are non-specific and could be consistent with lymphoid hyperplasia, extramedullary hematopoiesis, infiltrative neoplasia, inflammation, other. Cytology or histopathology would be necessary to get a definitive diagnosis. The nature of the hyperechoic nodules trends towards a more benign lesion such as myelolipomas.
- Large, heterogeneous liver – 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. This could be consistent with a steroid hepatopathy.
- Large amount of gallbladder debris, largely adhered to the gallbladder wall – The gall bladder changes are most consistent with a developing mucocele. Consider medical management and close monitoring for progression of this lesion.

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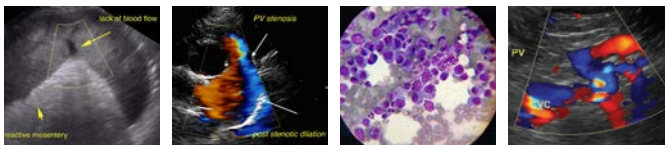

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INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

The left adrenal gland is large, irregular, and somewhat nodular with concern for possible vascular invasion. This is most consistent with a left-sided adrenal mass. These lesions can be benign or neoplastic and can be secreting hormone or be non-secretory. These are my recommendations for further evaluation of an adrenal mass:

- If signs of cushings are present, consider adrenal function testing. I prefer an ACTH stimulation test combined with an adrenal panel to the University of Tennessee's endocrine lab to look for atypical adrenal hormones as well as cortisol. (other testing can suffice)
- If adrenal dependent cushings is suspected and supported by adrenal function testing consider medical therapy with lysodren or trilostane and/or consider surgical removal (recommend referral to a board certified veterinary surgeon and possible pre op CT)-This can be a challenging surgery with significant risk for complication
- Recommend blood pressure evaluation-if hypertensive consider testing catecholamine levels for a possible pheochromocytoma
- Due to the invasive nature of these masses a CT scan is recommended to evaluate for metastasis and vascular invasion.
- If no symptoms of cushings are present, consider either referral for surgery or if surgery is not an option consultation with a veterinary oncologist regarding chemotherapeutic options and continued monitoring with ultrasound (in 4-6 weeks) can be considered.
- Some aggressive adrenal tumors can grow quickly and there is risk for acute hemorrhage from vascular invasion.

The spleen appears slightly mottled with hyperechoic nodules. The appearance of the hyperechoic nodules trends towards a more benign lesion such as myelolipomas, but a fine needle aspirate of the spleen could be considered.

The liver is large and heterogeneous. This is likely due to chronic Prednisone therapy +/- the adrenal secreting hormone. If there is concern about liver function, a fine needle aspirate and pre- and post-prandial bile acids could be considered.

The gallbladder has a large amount of adherent debris with no wall thickening or surrounding inflammation. Recommend continued monitoring and consider starting Ursodiol chronically.

While there is no obvious evidence of recurrence of the LMA or squamous cell carcinoma, there is significant concern for a neoplastic lesion involving the left adrenal gland. Adrenal function testing would be challenging given the chronic steroid therapy. Advanced imaging is strongly recommended to assess for possible surgical removal.

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

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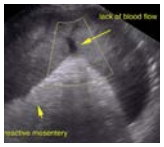
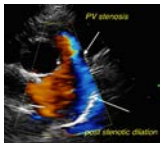
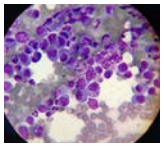
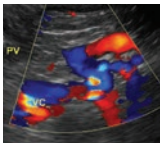

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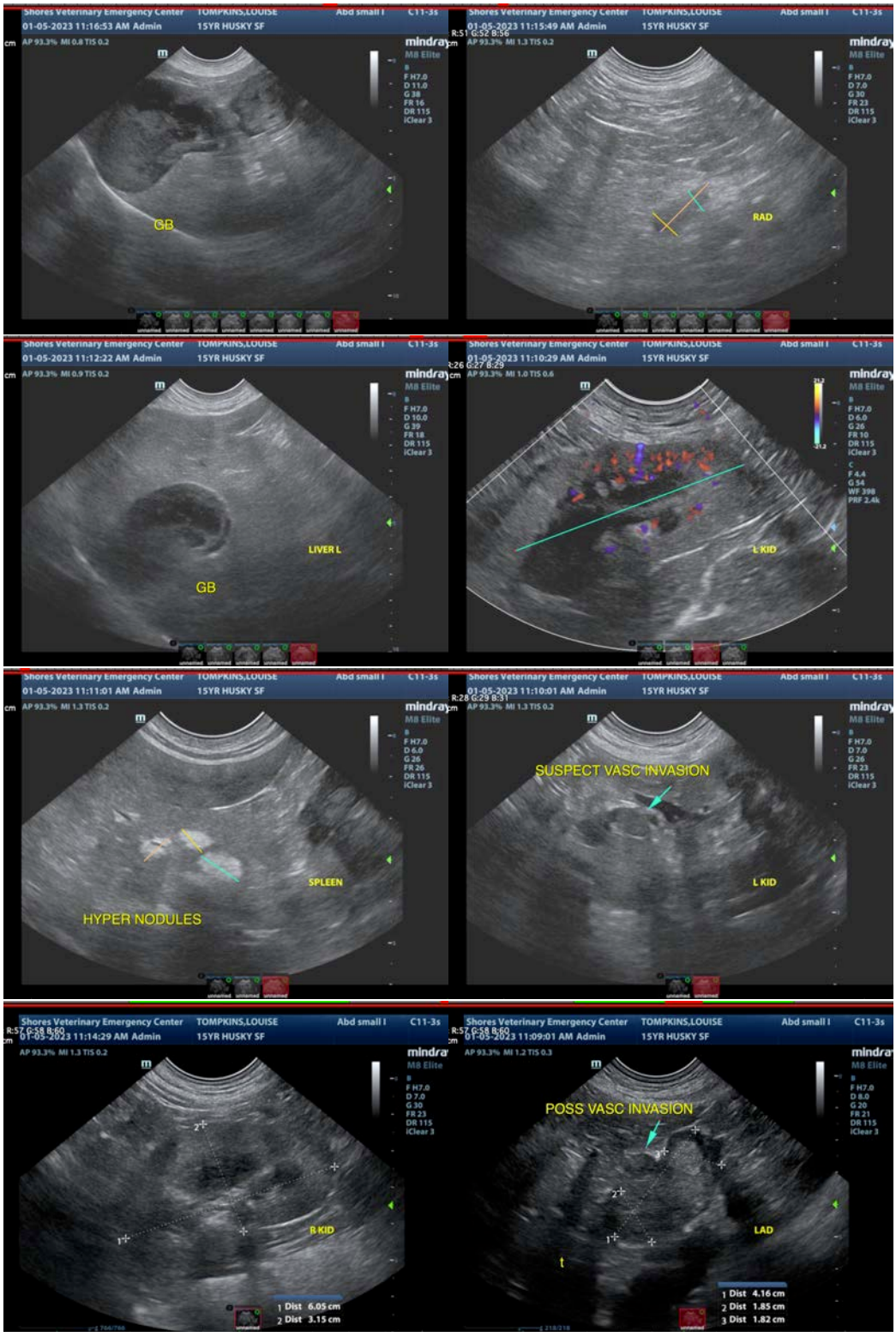

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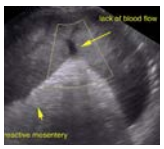
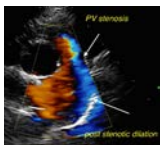
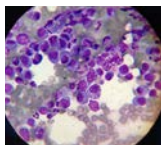
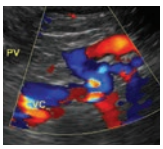

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The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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.

Kathleen Sennello DVM,MS, Diplomate ACVIM (Small animal Internal Medicine)

kathleen.sennello@sonopath.com