**PATIENT**

Brittany Koeck 265993

SPECIES

Canine

BREED

Labrador Retriever

SEX

Spayed Female

AGE

7 Years

WEIGHT

31.3 kg

INTERPRETED BYKathleen Sennello DVM,
MS, Diplomate ACVIM
(Small Animal Internal
Medicine)**IMAGING
PERFORMED BY**

Tom McNeill

HOSPITAL NAME

SVS Imaging CT

REFERRING VET

WRVC - Dr. Witzel

INVOICE

36418

DATE

3/24/22

PRESENTING CLINICAL SIGNS

2/19 - Developed right HL lameness thought to be soft tissue injury; this resolved with a course of Galliprant. Bloodwork at that time reportedly showed a leukocytosis; so she was started on an antibiotic. She started vomiting after receiving this antibiotic and it was discontinued after a few days. She was also found to have a low thyroid level and was started on thyroid supplementation. She became progressively more lethargic; her thyroid level had normalized by 3/14. She has been anorexic for about 6 days and vomited once. Bloodwork performed yesterday reportedly showed only a mild anemia (HCT 31%). AxR and CxR were reportedly normal.

Abnormal PE/Chem/CBC/UA Results: Arrhythmia with pulse deficits, lethargic, dehydrated

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 is borderline large in size (8.18 cm). It is irregular in appearance in that there are several indistinct hyper- and hypoechoic nodules in the cortical tissue. There is a 2.38 cm x 1.3 cm hyperechoic nodule, and a 1.07 cm hypoechoic nodule visualized. There is mild perinephric inflammation. No effusion. Overall echogenicity is slightly hyperechoic with poor corticomedullary distinction and a typical 1:3 cortex:medulla ratio. There is no evidence of pyelectasia, nephroliths or hydroureter. Renal vasculature is normal.

The right kidney is borderline large in size (8.94 cm). It has decreased corticomedullary distinction and is somewhat irregular in appearance in that there are hyper- and hypoechoic nodules in the cortex. A hyperechoic nodule measures 1.32 cm x 1.67 cm. There is mild perinephric inflammation, but not effusion. There is no evidence of pyelectasia, nephroliths, or hydroureter.

Adrenal Glands

The left adrenal gland is normal in size measuring 0.83 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.

There is a large, hypoechoic, oblong mass effect in the area of the right adrenal gland. This lesion measures 3.8 cm x 8.97 cm. There is surrounding inflammation and concern for vascular invasion, as the vessels caudal to the right adrenal gland appear to have soft tissue within them, most consistent with a mass effect, or more likely a clot.

Spleen

The spleen is subjectively normal in size, echotexture is homogenous, and the splenic capsule is smooth with no irregularities. The blood flow through the hilus and splenic parenchyma appears normal. No focal parenchymal abnormalities are visualized.

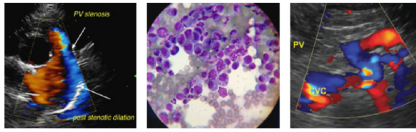
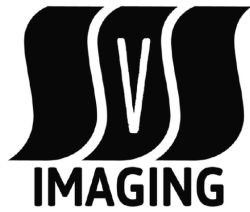
Liver

The liver is large in size 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.

The gallbladder lumen is moderately distended. The wall of the gall bladder is not thickened and has a smooth mucosal surface. Luminal contents are primarily anechoic. The cystic and common bile ducts are normal/not visible.

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Gastrointestinal

The stomach contains fluid and gas. 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. Duodenum wall measured 0.47 cm. Jejunum wall measured 0.32 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. 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 area of 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

There is no significant free fluid. There are occasional prominent mesenteric lymph nodes. A gastric lymph node is prominent and 0.77 cm. The omentum is of increased echogenicity around the area of the right adrenal gland.

Other

There is soft tissue density visualized within the left iliac vein at the iliac trifurcation, most consistent with a thrombus. This abnormal tissue can be followed up to the level of the suspected right adrenal gland. A complete obstruction is not visualized, but reduced blood flow is evident.

PRIMARY FINDINGS

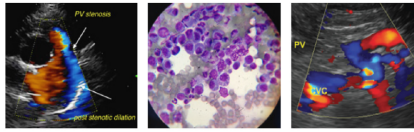
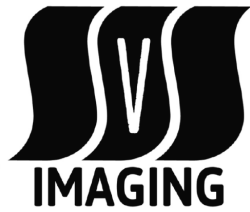
- Large mass effect medial to the right kidney – most consistent with a right adrenal mass. There is associated vascular abnormalities in this area, consistent with vascular invasion and thrombus formation.
- Suspected thrombus formation in the left iliac vein
- Hypo- and hyperechoic nodules visualized in the cortex of both kidneys - There is concern for possible metastatic disease, but other differentials are possible.
- 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.

SECONDARY FINDINGS

- Fluid and gas evident within the gastric lumen – Some shadowing impairs full evaluation of the pyloric region. No obstruction is suspected.

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INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

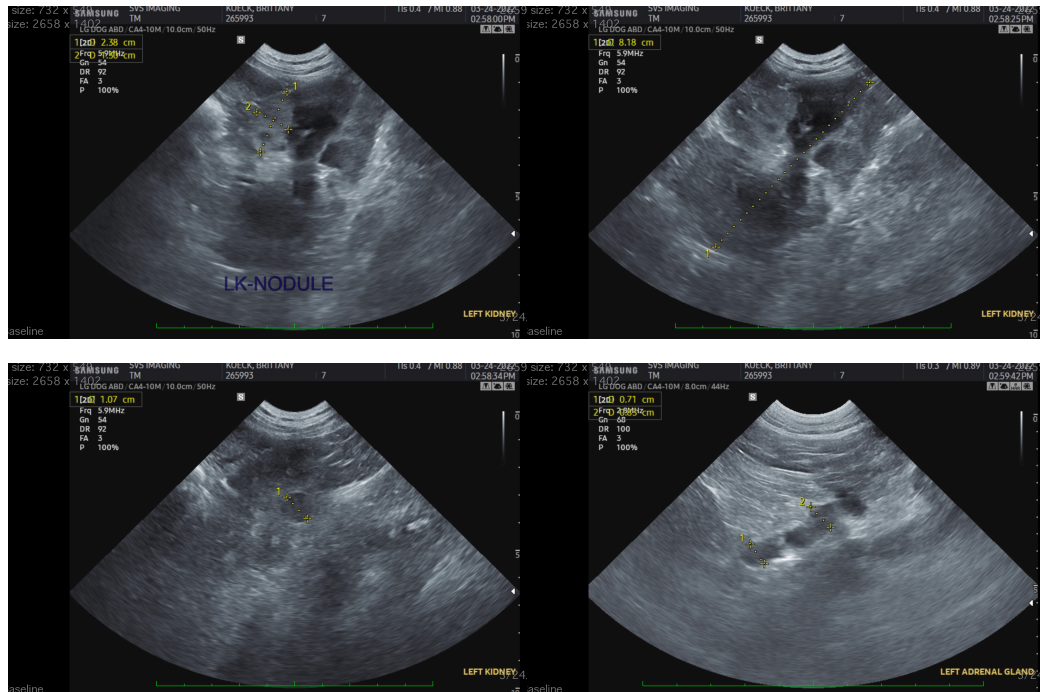
There is a suspected large right adrenal mass with suspected invasion into the local vasculature and thrombus formation. Additionally, there is thrombus formation at the iliac trifurcation, and nodules within both kidneys. These nodules would be most concerning for possible metastatic lesions.

- Recommend 3-view thoracic radiographs
- Recommend blood pressure evaluation

Based on the history provided, there would be concern that this could be an active hormone-secreting tumor (cortisol type hormone or catecholamines). If increased cortisol is present and Cushing's disease, then this could indicate a hypercoagulable state. Additionally, recommend a urinalysis and urine protein/creatinine ratio to look for evidence of a concurrent protein losing nephropathy.

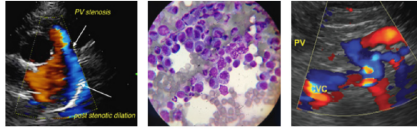
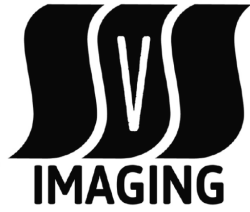
Unfortunately, there are many possible causes for a hypercoagulable state in this patient in addition to a likely invasive mass effect. Prognosis is very guarded. Options would include a contrast CT scan to evaluate for possibility of surgical removal, and to further evaluate the extent of vascular involvement and possible metastasis. Additionally, you could consider a fine needle aspirate of the kidneys with a small gauge needle, provided there is no hypertension and coagulation parameters are normal.

A platelet inhibitor could be considered, but keep in mind this could slightly increase the risk for hemorrhage. If further treatment is desired, then recommend referral to a veterinary surgeon with critical care access and advanced imaging capabilities.



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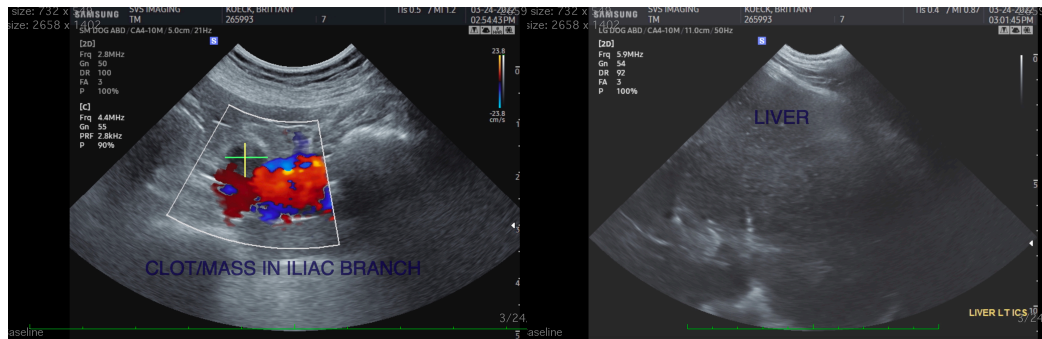
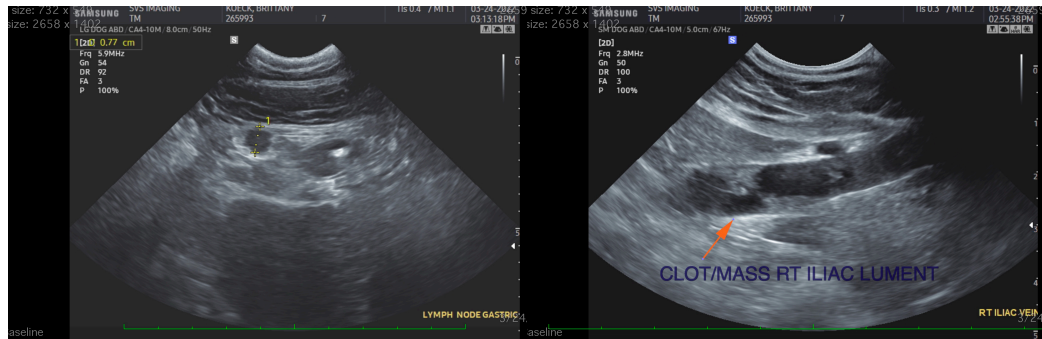
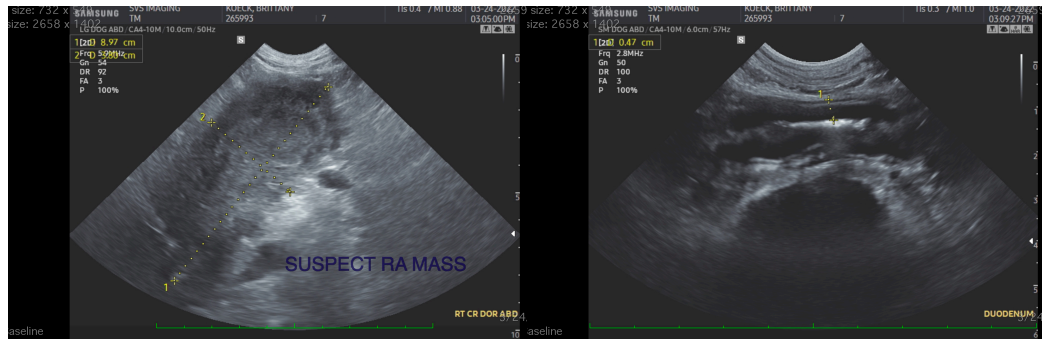
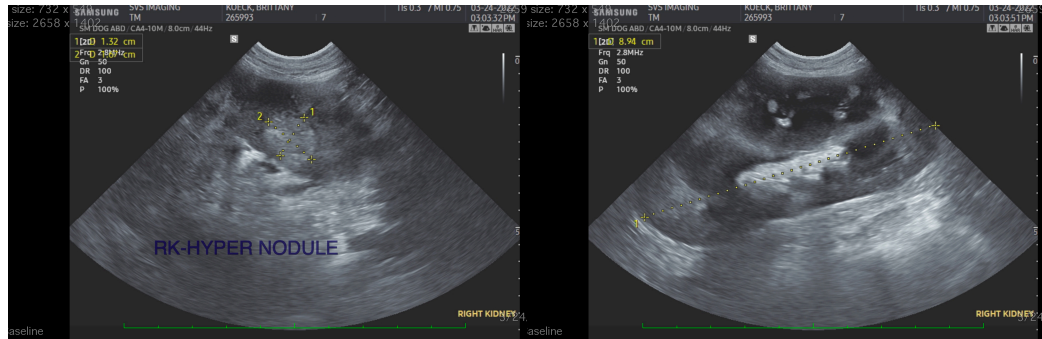
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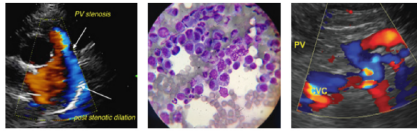
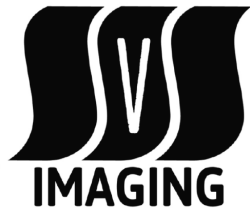
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The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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)

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