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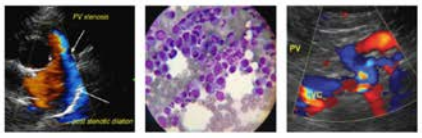

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PATIENT

Zoey Ayala

SPECIES

Canine

BREED

Miniature Dachshund

SEX

Spayed Female

AGE

12 Years

WEIGHT

12.8 Pounds

INTERPRETED BY

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

IMAGING PERFORMED BY

Rachel Runnells, RVT

HOSPITAL NAME

Bel Air VH

REFERRING VET

Dr. Seth Mitchell

INVOICE

40237

DATE

8/5/22

PRESENTING CLINICAL SIGNS

Came for second opinion - rads showed abdominal mass at previous dvm.

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 (5.1 cm) with numerous small cortical cysts. Overall echogenicity is slightly hyperechoic with poor corticomedullary distinction and a typical 1:3 cortex:medulla ratio. There is no evidence of 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 (5.44 cm) with numerous small cortical cysts. Overall echogenicity is slightly hyperechoic with poor corticomedullary distinction and a typical 1:3 cortex:medulla ratio. There is no evidence of 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 in size measuring 0.78 cm at the cranial pole, 2.26 cm at the caudal pole, and 3.1 cm in elngth. It is observed in its normal position cranial to the left renal artery. It is abnormal in appearance in that the majority of the adrenal is a large mixed echogenic, hyperechoic mass effect. This mass impinges on the local vasculature, and there is questionable but not definitive invasion.

The right adrenal gland is large in size measuring 1.71 cm at at the cranial pole, 0.32 cm at the caudal pole, and 2.1 cm in length. It is observed in its normal position between the cranial aspect of the right kidney and the caudal vena cava. It is irregular in appearance in that the cranial pole is significantly enlarged, consisting primarily of a large mixed echogenic, hyperechoic mass effect. There is no obvious evidence of vascular invasion.

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. There is a small hypoechoc nodule visualized within the splenic parenchyma.

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.

The gall bladder lumen is moderately distended. The wall of the gall bladder is not thickened and has a smooth mucosal surface. There is a moderate amount of non-organized echogenic debris. The cystic and common bile ducts are normal/not visible.

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.

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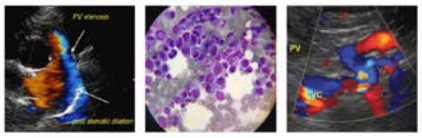

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The visualized areas of duodenum, jejunum and ileum have a relatively uniform diameter with minimal fluid distension. Wall thickness is normal. Bowel loops follow a curvilinear path with distinct wall layering maintaining the typical 1:3 muscularis:mucosa layer ratio. Duodenum wall measured 0.37 cm. Jejunum wall measured 0.32 cm. There is mild mucosal speckling noted in the duodenum. 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

- Bilateral adrenal masses – These lesions could represent bilateral adenomas, carcinomas, or could represent a mixture of benign and cancerous lesions. Less likely these could represent metastatic lesions.
- 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.
- Decreased corticomedullary distinction in both kidneys with small cortical cysts – The bilateral renal findings are consistent with age-related change.
- Hypoechoic nodule visualized within the splenic parenchyma – There is a non-cavitated, hypoechoic splenic nodule visualized. Differentials include lymphoid hyperplasia, extramedullary hematopoiesis, infiltrative neoplasia, inflammation, other. Cytology or histopathology would be necessary to get a definitive diagnosis.
- Moderate gallbladder debris – The significance of the aggregated gallbladder sludge is unclear. This could represent an early mucocele, cholestasis, or may be secondary to fasting.

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

There are mass effects involving both adrenal glands. This can be a complicated problem, as each adrenal gland can have a separate disease process, or they could be related. The recommendations for unilateral versus bilateral adrenal masses are similar, but unfortunately, surgical evaluation would likely require bilateral adrenalectomy, which can be done, but requires diligent post-operative care.

Alternately, you could continue monitoring with ultrasound and/or treat medically with Lysodren or Trilostane if signs of Cushing's are present. Recommend a blood pressure revaluation. If hypertension is present, consider catecholamine levels to look for evidence of a pheochromocytoma. There is the option for a fine needle aspirate of the adrenal gland. This may be possible with the right adrenal gland if desired, but I think realistically your options are bilateral adrenomegaly after a contrast CT scan to look

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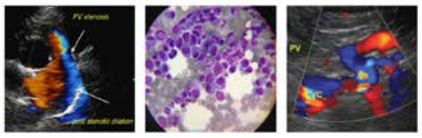

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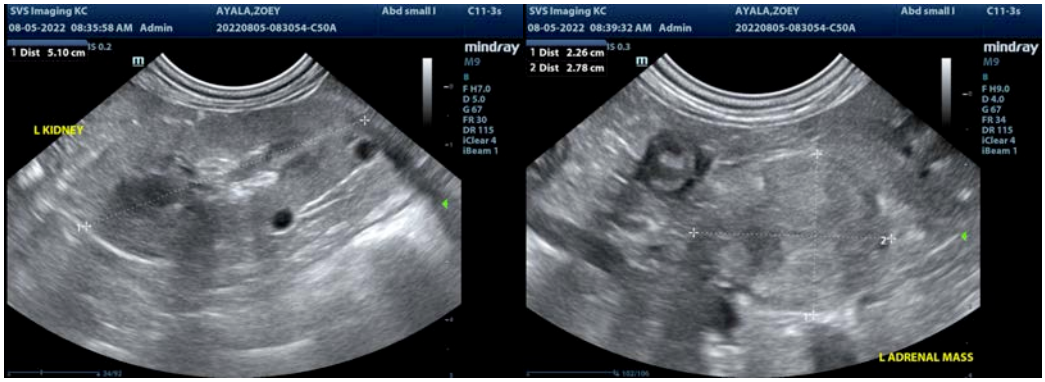
for vascular invasion, or medical management/monitoring.

These are my recommendations for a unilateral adrenal mass, but these apply to bilateral adrenal masses as well:

- 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.

Additionally, there is a small hypoechoic splenic nodule present. This has a somewhat benign appearance, but a neoplastic or benign lesion is possible. Consider a fine needle aspirate.

Consider three view thoracic radiographs to rule out concurrent thoracic disease/involvement.



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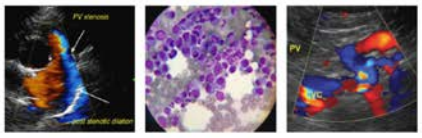

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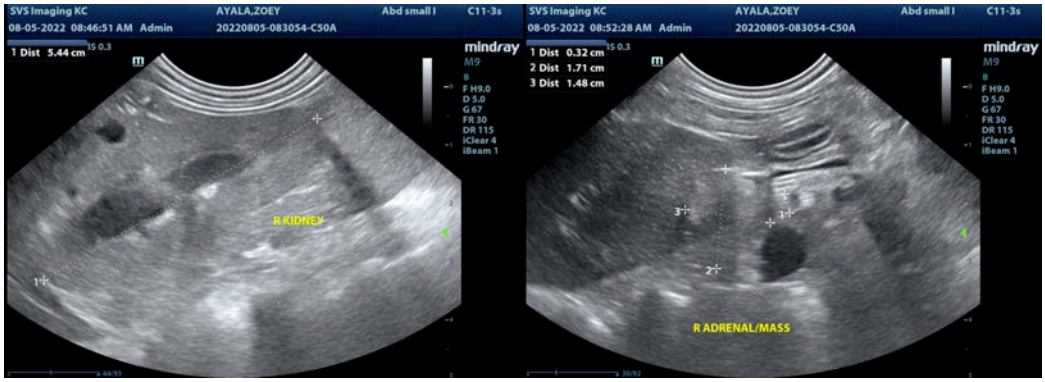

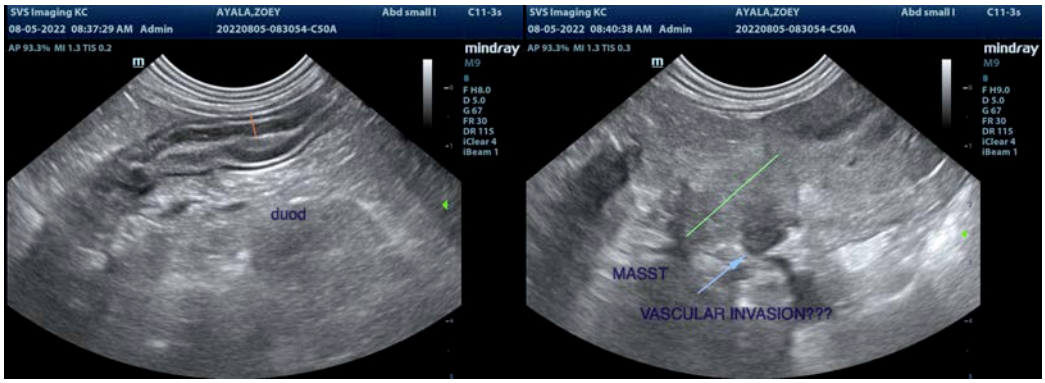

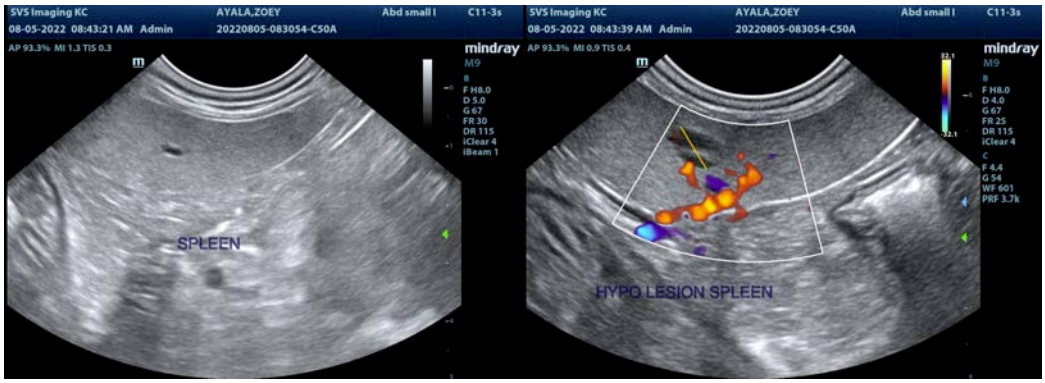

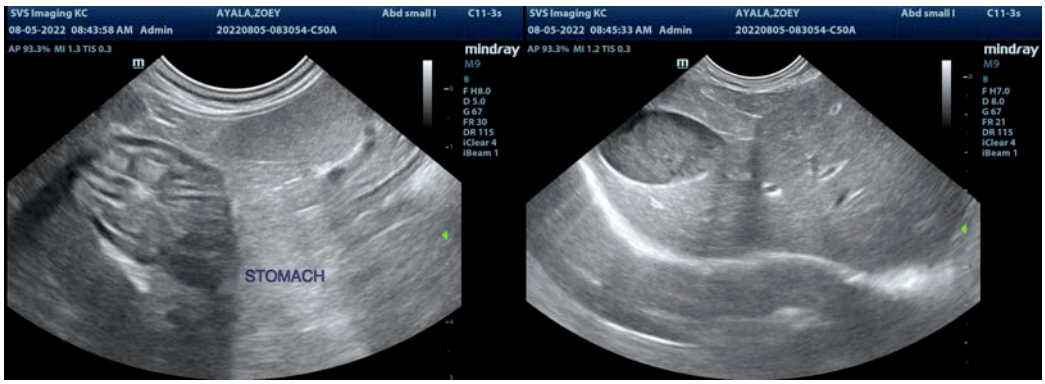

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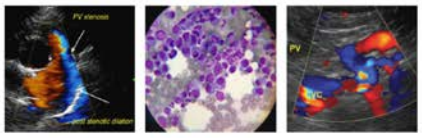

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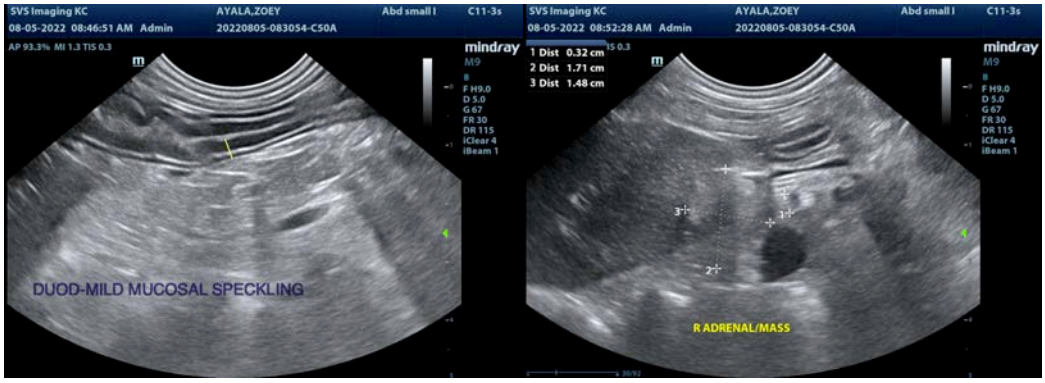

The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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