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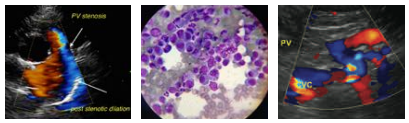

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DATE
9/21/21

PATIENT
Belle Cohn

SPECIES
Canine

BREED
Labrador Retriever Mix

SEX
Spayed Female

AGE
7/15/09

WEIGHT
74.5 lbs

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

HOSPITAL NAME
Greenbrier VC

REFERRING VET
Dr. Receski

INVOICE
91888

PRESENTING CLINICAL SIGNS

History: History of PU/PD for a couple months. Presented to us in July 2021 for constant PU/PD despite workup at another pet. Was treated for persistent UTI but still excessively drinking and urinating.
Current Medications: Not provided by the veterinarian.
Lab Results: Tested with Senior Wellness Panel (came back consistent with a UTI and elevated ALP). Treated with longer round of oral antibiotics and UTI resolved but PU/PD did not go away (having accidents in house)
UCCR: 51 High (done on 08/17/2021). Low Dose Dex Suppression Test results (done on 08/31/2021): Cortisol (baseline): 1.7; Cortisol - 4-hour post: 1.2; Cortisol-8-hour post: 1.3. Inconclusive-- ACTH Stim done 09/13/2021: normal.
Radiographs: Not provided by the veterinarian.
Date of Previous IntraPet Ultrasound: No previous IntraPet scans.
Sedation: Sedation not required for scan.
Stat Report: STAT report not requested by the veterinarian.

ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN

Urinary System

The urinary bladder is moderately distended with anechoic urine. The bladder wall is diffusely thickened and irregular measuring at approximately 0.75 cm. The trigone, ureteral papillae and visible urethra (to a depth of 2cm) appear free of any focal mass lesions or cystic calculi. The findings are most consistent with cystitis.

The right kidney has a normal shape and size (7.21 cm). 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. A 0.6 cm cortical cyst was noted. There is no evidence of pyelectasia, nephroliths, infarcts or hydroureter. Renal vasculature is normal.

The right kidney has a normal shape and size (6.8 cm). 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 2.36 cm at the cranial pole, 1.7 cm at the caudal pole with a length of 5.85 cm. It is observed in its normal position cranial to the left renal artery. It is irregular in appearance with a large cranial pole which is irregular in shape and a large caudal pole that is more normal in shape. The echogenicity is uniform. There is no evidence of definitive vascular invasion, but this mass does impinge on local vasculature.

The right adrenal gland is normal/borderline small in size measuring 0.4 cm at the caudal pole and 0.41 cm at the cranial pole with a length of 2.3 cm. 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 subjectively normal in size and the echotexture is homogenous. The splenic capsule is smooth with no visible irregularities. Rare discrete focal hyperechoic, perivascular parenchymal abnormalities are present. The appearance of these lesions is most consistent with benign splenic myelolipomas. The blood flow through the hilus and splenic parenchyma appears normal.

Liver
The liver is subjectively large in size, and 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. There are numerous, ill-defined, hypoechoic nodules varying in size from 0.5-1.0 cm. The gallbladder lumen is moderately distended. The wall of the gallbladder 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 is moderately dilated with fluid and irregular shadowing material most consistent with normal ingesta 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 layering 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
PRIMARY FINDINGS:
Left-sided adrenal mass. Left adrenomegaly could be consistent with neoplasia (e.g., adenoma, carcinoma, pheochromocytoma), hyperplasia, inflammation, other.

Large, heterogenous liver with indistinct, hypoechoic nodules. 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.

Diffusely thickened and irregular bladder wall. The bladder mucosal changes could be consistent with cystitis or artifactual due to lack of adequate luminal distension. Bladder neoplasia cannot be ruled out but is considered unlikely in this patient.

Moderate to large gallbladder sludge. The significance of the aggregated gallbladder debris is unclear. This

could represent an early mucocele, cholestasis, or may be secondary to fasting.

SECONDARY FINDINGS:

Decreased corticomedullary distinction in both kidneys. The bilateral renal findings are consistent with age-related change.

Borderline small right adrenal gland. This could be due to negative feedback from the adrenal tumor.

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

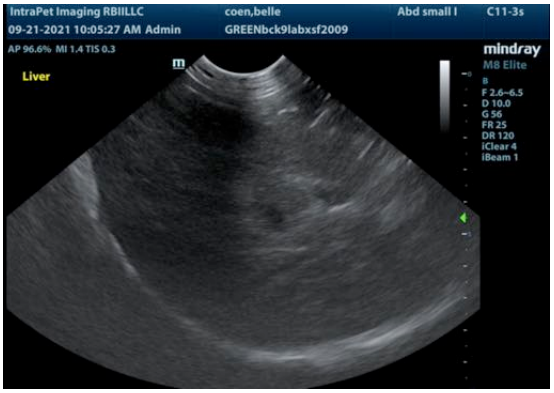
There is mass present involving the left adrenal gland. This mass is irregular and relatively large. I do not see evidence of clear vascular invasion, but this is still possible. These masses can be benign or malignant and can secrete hormones or be non-active. Based on the irregular appearance of this mass a cancerous process is considered more likely. Options moving forward include:

- If signs of Cushing's 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 Cushing's 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 Cushing's 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.

Based upon the appearance of this tumor I feel that surgical resection is a possibility. CT scan will better identify possible identify possible invasion or preoperative considerations. Additionally three view thoracic radiographs are recommended.

I recommend urinalysis and culture of the urinary bladder. If an infection is persistent I recommend reculture while on antibiotics to ensure that the infection is being treated appropriately and continue antibiotics for 2-4 weeks ideally being able to identify that the bladder wall has normalized prior to discontinuing antibiotics. I recommend repeating culture after being off antibiotics and a month after that if the culture is negative. If this patient has Cushing's disease hopefully treatment will help with recurrent cystitis.

I recommend referral to a veterinary surgeon +/- internist for further evaluation as the small right adrenal gland could indicate the need for post operative glucocorticoid support/intensive care, etc.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Liver
mindray
M8 Elite


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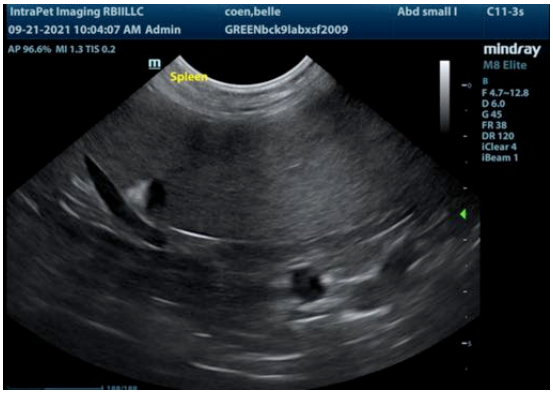
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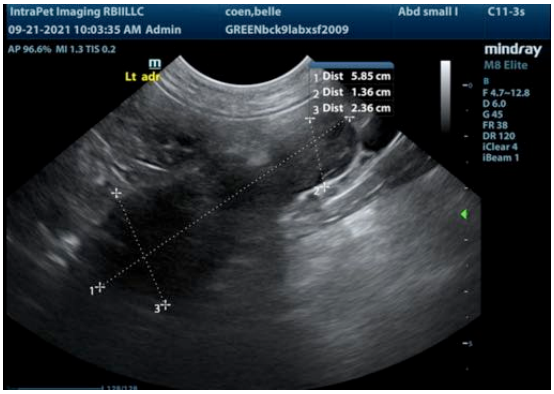
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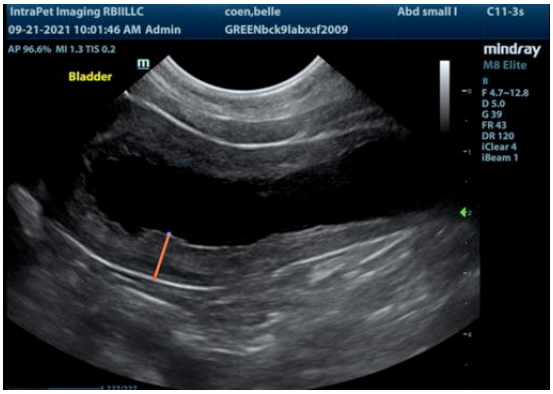
2 Dist 1.36 cm
3 Dist 2.36 cm
mindray
M8 Elite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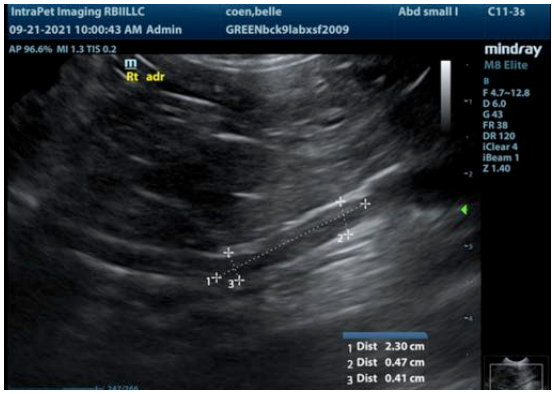
Bladder
mindray
M8 Elite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Rt adr
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3 Dist 0.41 cm
mindray
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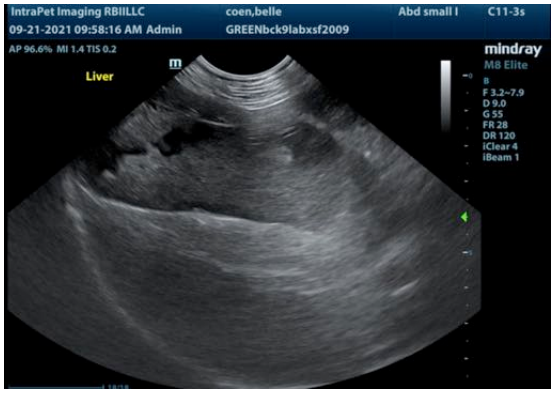

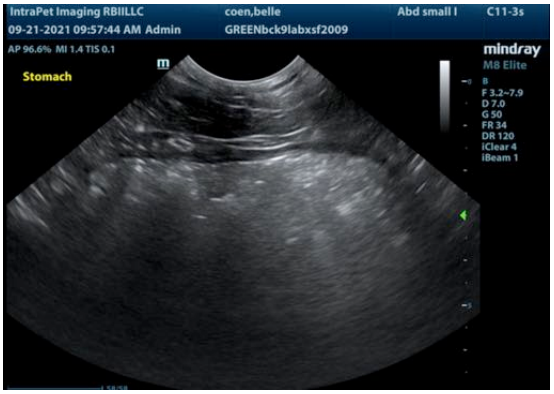

The information and recommendations provided are based on the images presented by the referring veterinarian. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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.

Kathleen Sennello DVM,MS, Diplomate ACVIM (Small animal Internal Medicine)
kathleen.sennello@sonopath.com