IMAGING PERFORMED BY

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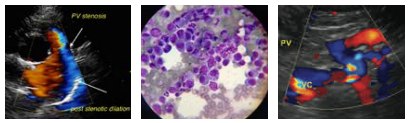

SonoPath
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DATE
2/8/21

PATIENT
Bella Pisano

SPECIES
Canine

BREED
Chihuahua

SEX
Spayed Female

AGE
5/20/08

WEIGHT
13.4 lbs

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

HOSPITAL NAME
Homeward Bound VS

REFERRING VET
Dr. Keil

INVOICE
95886

PRESENTING CLINICAL SIGNS

History: Hx: Hacking and gagging for 4-5 months. O concerned about pot belly appearance, losing sight and hearing. No v/d/s. Eating/Drinking well. CV: 3/6 L apical systolic murmur, RESP: Crackles in caudodorsal lung field, ABD: Distended. A/P: Distended Abdomen - r/o neoplasia, Cushing's, cardiac congestion(effusion). Heart Murmur/Resp Crackles - r/o cardiac dz vs. degenerative lung changes.
Lab Results: Liver ALP >3500, Hypercalcemic, Hyperkalemia, will attach full BW. R/o Hepatic neoplasia, evidence of crushing's, other.
Radiographs: - Rad WB (3 View): hilar bronchointerstitial pattern, hepatomegaly with caudal gastric axis, suspect RA enlargement.
Date of Previous IntraPet Ultrasound: No previous IntraPet scans.
Sedation: Not required to complete full diagnostic ultrasound.
Stat Report: Not requested.
Imaging Performed By: Stephanie Pearce RDCS, RVT.

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 (5.04 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. Numerous, small cortical cysts were noted. There is no evidence of pyelectasia, nephroliths, infarcts or hydroureter. Renal vasculature is normal.

The right kidney has a normal shape and size (4.92 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. Numerous, small cortical cysts were noted. There is no evidence of pyelectasia, nephroliths, infarcts or hydroureter. Renal vasculature is normal.

Adrenal Glands

The left adrenal gland is normal in size measuring 0.44 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.

The right adrenal gland is large in size measuring 1.14 cm at the cranial pole and 1.15 cm at the caudal pole and 3.3 cm in length. It is observed in its normal position between the cranial aspect of the right kidney. It is irregular in appearance, large and abnormal shape. There s no obvious evidence of vascular invasion visualized. This is most consistent with a right adrenal mass.

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 subjectively large in size with smooth peripheral margins. The parenchyma is hyperechoic and homogenous in echotexture. 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

gallbladder is not thickened and has a smooth mucosal surface. There is a moderate amount of non-organized echogenic debris. The bile duct appears diffusely tortuous and dilated measuring approximately 0.72 cm within the liver and it is visualized measuring 0.5 cm at the duodenal papilla. No obstructions are visualized.

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 uniform diameter with minimal fluid distension. Wall appears subjectively, mildly increased. The duodenum measured 0.45 cm. The jejunum measured 0.37 cm. Bowel loops follow a typical curvilinear path with distinct wall layering. 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:

- Decreased corticomedullary distinction in both kidneys with numerous small cortical cysts. Mild loss of corticomedullary distinction in both kidneys could be consistent with chronic degenerative disease or interstitial nephrosis.

- Large, hyperechoic liver. The diffuse hepatic changes are non-specific and can be seen with vacuolar hepatopathy, reactive change, nodular hyperplasia or, less likely, inflammatory/immune-mediated disease, infiltrative neoplasia, or other hepatopathy.

- Large gallbladder sludge with dilated common bile duct. The gallbladder appears moderately diseased with a dilated bile duct. No obvious obstruction is visualized. Dilation of the common bile duct could be consistent with a functional obstruction (i.e. primary hepatic disease resulting in hepatocellular swelling) or with an extrahepatic bile duct obstruction (ie. choledocholith, bile duct tumor, pancreatic disease, other).

- Large, abnormally shaped right adrenal gland. The findings are most consistent with a right adrenal mass. Right adrenomegaly could be consistent with neoplasia (e.g., adenoma, carcinoma, pheochromocytoma), hyperplasia, inflammation, other.

- Mildly thickened small intestine. The mild small intestinal wall changes may be a normal variant in this patient or could be consistent with an inflammatory process (e.g., inflammatory bowel disease).

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

There is mass present involving the right 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:

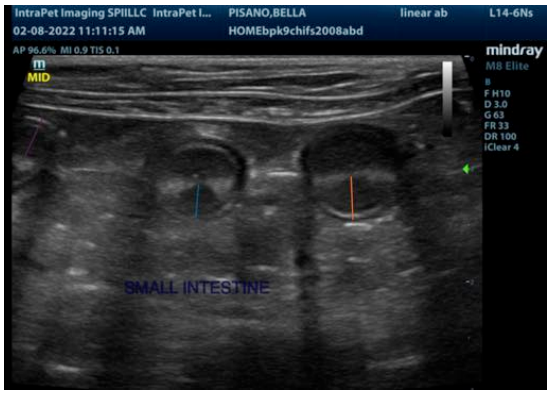
- If signs of Cushing's are present, consider adrenal function testing. I prefer an ACTH stimulation test combined with an adrenal panel to the University of Tennessee's endocrine lab to look for atypical adrenal hormones as well as cortisol. (other testing can suffice)
- If adrenal dependent Cushing's is suspected and supported by adrenal function testing consider medical therapy with Lysodren or Trilostane or consider surgical removal (recommend referral to a board certified veterinary surgeon and possible pre op CT)
- Recommend blood pressure evaluation-if hypertensive consider testing catecholamine levels for a possible pheochromocytoma
- If no symptoms of Cushing's are present, consider either referral for surgery or continued monitoring with ultrasound (in 3-4 months).
- Many of these nodules can be benign and incidental in nature, unfortunately that is difficult to determine with a single ultrasound.

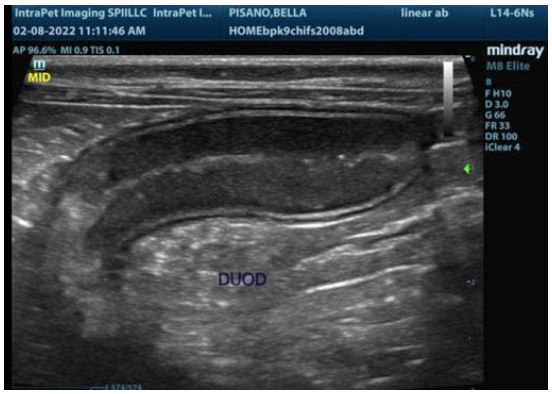
Additionally the gallbladder is large with a large amount of debris and a dilated bile duct. I cannot definitively say if the ALP elevation is secondary to the gallbladder disease or the possible Cushing's disease present. It could be a component of both, but I am leaning towards that it being the primary cortisol excess. I recommend monitoring the gallbladder closely with ultrasound and treatment for cholecystitis with Ursodiol and antibiotics (Clavamox is a good option).

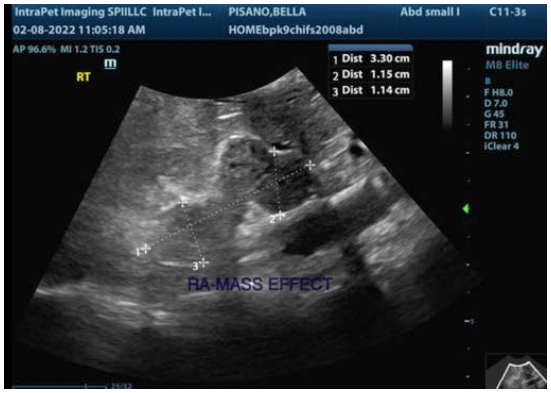
The liver is hyperechoic, which is most consistent with a vacuolar hepatopathy. FNA of the liver could be considered to confirm this.

The bowel appears subjectively thickened. This could be normal in this patient or an indicator of underlying small intestinal disease. Additionally both kidneys appear irregular with numerous small cortical cysts. These changes are likely age related and consistent with chronic progressive renal disease.

- Consider blood pressure evaluation and urinalysis/culture
- Recommend three view thoracic radiographs. If concurrent heart disease is suspected I recommend a cardiac ultrasound.



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RA-MASS EFFECT
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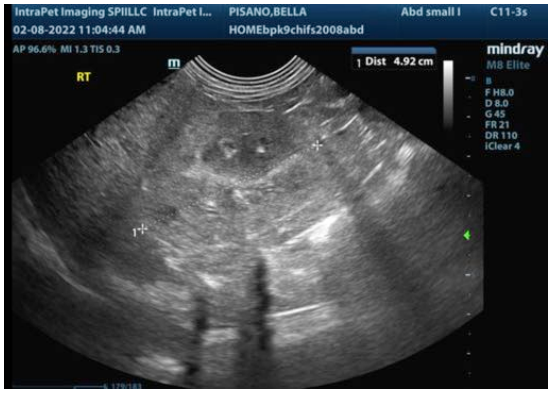
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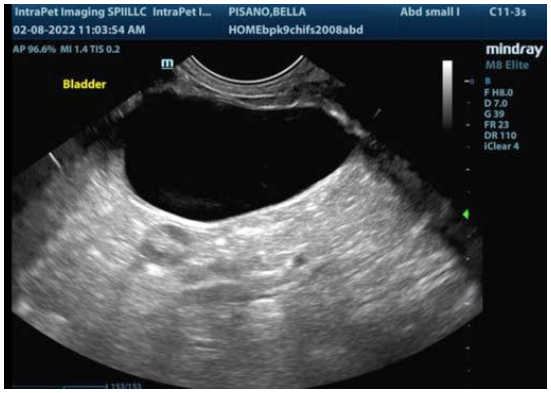
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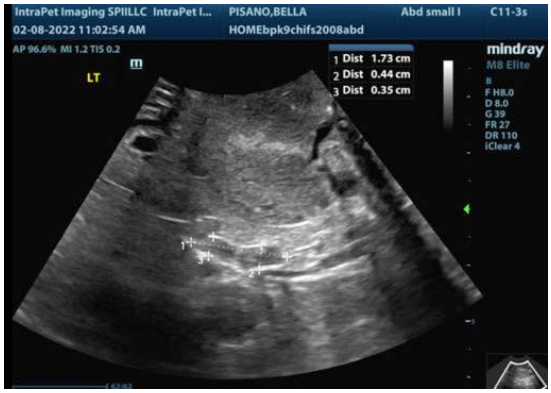
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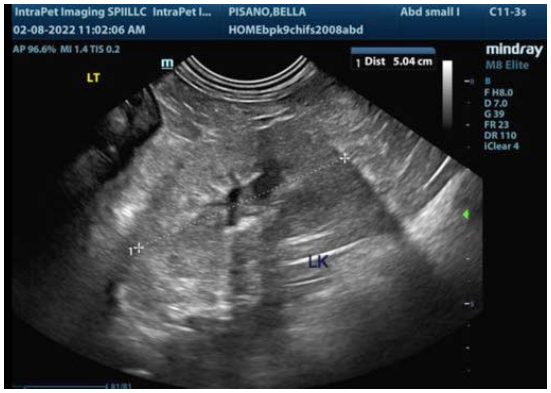
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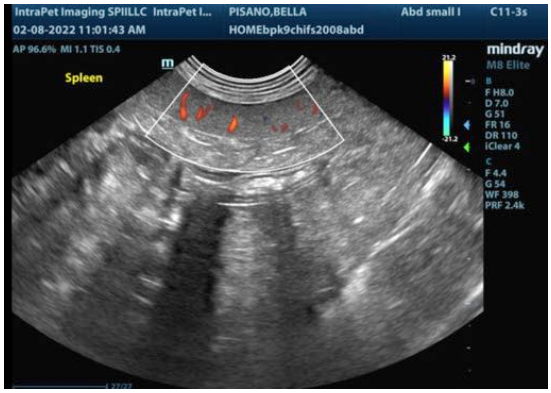
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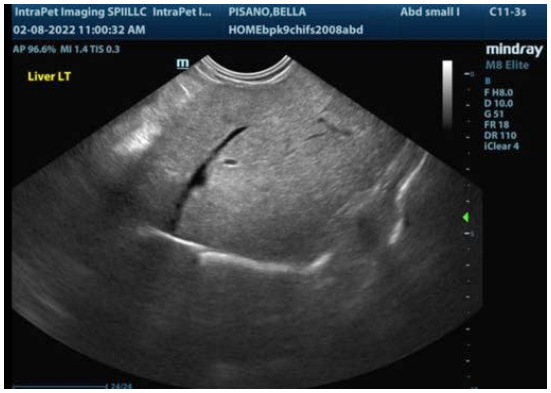

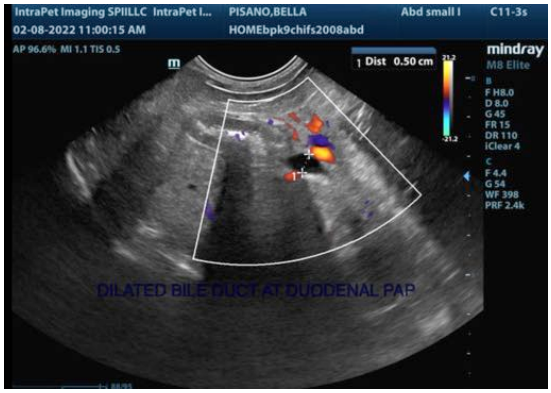

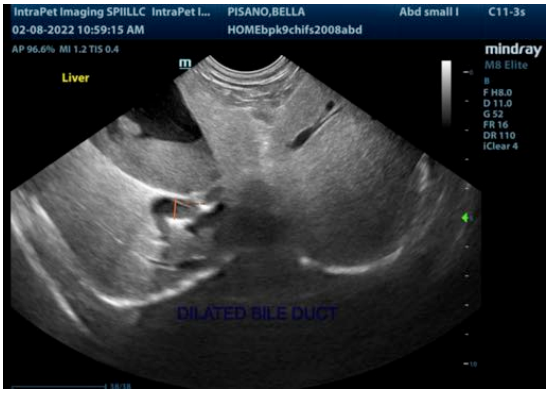

The information and recommendations provided are based on the images presented by the referring veterinarian. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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