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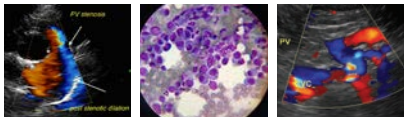

SonoPath
Clinical Sonography & Telecytology
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DATE

8/2/22

PATIENT

Lucy Debolt

SPECIES

Canine

BREED

Malitpoo

SEX

Spayed Female

AGE

11/17/11

WEIGHT

33.66 Pounds

INTERPRETED BY

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

IMAGING PERFORMED BY

Stephanie Warga RDCS, RVT

HOSPITAL NAME

White Marsh AH

REFERRING VET

Dr. Danna

INVOICE

40052

PRESENTING CLINICAL SIGNS

History of Adrenocortical carcinoma- O has observed increased panting, urinating and drinking over the past month.

Current Medications: Hydroxyzine 25mg- 1 tablet po BID, Mushroom Max 2 tablets po SID.
Lab Results: See attached.
Date of Previous IntraPet Ultrasound: 3/17/22. See attached.
Sedation: Not required to complete full diagnostic ultrasound.
Stat Report: Not requested.

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, or masses. In the dependent portion of the urinary bladder, there is a small amount of hyperechoic, dependent, mildly shadowing debris, most consistent with sandy debris. Some of this material appears to extend into the proximal urethra. Correlate with abdominal radiographs, urinalysis and culture. Findings are most consistent with sandy mineralized debris.

The left kidney has a normal shape and size (5.23 cm) with small non-obstructive nephroliths. Overall echogenicity is normal with adequate 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, infarcts or hydroureter. Renal vasculature is normal.

The right kidney has a normal shape and size (6.17 cm) with small non-obstructive nephroliths. Overall echogenicity is normal with adequate 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, infarcts or hydroureter. Renal vasculature is normal.

Adrenal Glands

The left adrenal gland is surgically absent, adenocarcinoma removed 4/20/22.

The right adrenal gland is borderline enlarged in size measuring 0.84 cm at the cranial pole, 0.60 cm at the caudal pole, and 2.79 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 somewhat abnormal in appearance in that the cranial pole is hyperechoic and mildly irregular, creating the appearance of a hyperechoic nodule in the cranial pole measuring 0.72 cm x 0.68 cm. There is no evidence of vascular invasion.

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 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. There are occasional ill-defined, hypoechoic nodules visualized in the liver. One such nodule is visualized at 1.85 cm x 1.25 cm. Another measures 1.17 cm x 1.39 cm.

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 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 prominent and mottled compared to the surrounding isoechoic 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.

PRIMARY FINDINGS

- Ill-defined, hyperechoic nodule is noted in the cranial pole of the right adrenal gland. This is a new finding since the last scan on 3/17/22. Possible differentials include focal hyperplasia, metastatic neoplasia, a benign mass effect, pheochromocytoma, carcinoma, etc.

- Sandy debris in the dependent portion of the urinary bladder and the proximal urethra – correlate with abdominal radiographs. Recommend urinalysis and culture.

- Large, heterogeneous liver with ill-defined 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. The appearance of the hypoechoic nodules trends towards a more benign process, but underlying neoplasia cannot be excluded as a possibility.

SECONDARY FINDINGS

- Surgically absent left adrenal gland (removed 4/20/22, adenocarcinoma diagnosed).

- Small non-obstructive nephroliths visualized in both kidneys – The hyperechoic mineralized foci observed at the corticomedullary junction of the left/right kidney are consistent with small, non-obstructive nephroliths.

- Hyperechoic foci visualized within the spleen – most consistent with benign myelolipomas. Continued monitoring is warranted.

- Prominent, mottled pancreas – The pancreatic changes are most consistent with age-related parenchymal remodeling, potentially secondary to a prior inflammatory episode, early fibrosis or chronic pancreatitis. Findings are similar to those reported in the previous ultrasound.

- 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 appears to be a new lesion in the cranial pole of the right adrenal gland. The significance of this is unclear. This could represent a benign lesion, hyperplasia, an adenoma, etc., but alternately it could represent a metastatic lesion from the previously diagnosed carcinoma, or it could be a new neoplastic lesion (pheochromocytoma, carcinoma, etc.).

Possible options are similar to those originally presented for the left adrenal mass lesion and will be repeated here. This lesion is much less defined and smaller. At the very least, a recheck ultrasound should be considered in 4-6 weeks.

- 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 or consider surgical removal (recommend referral to a board certified veterinary surgeon and possible pre op CT)

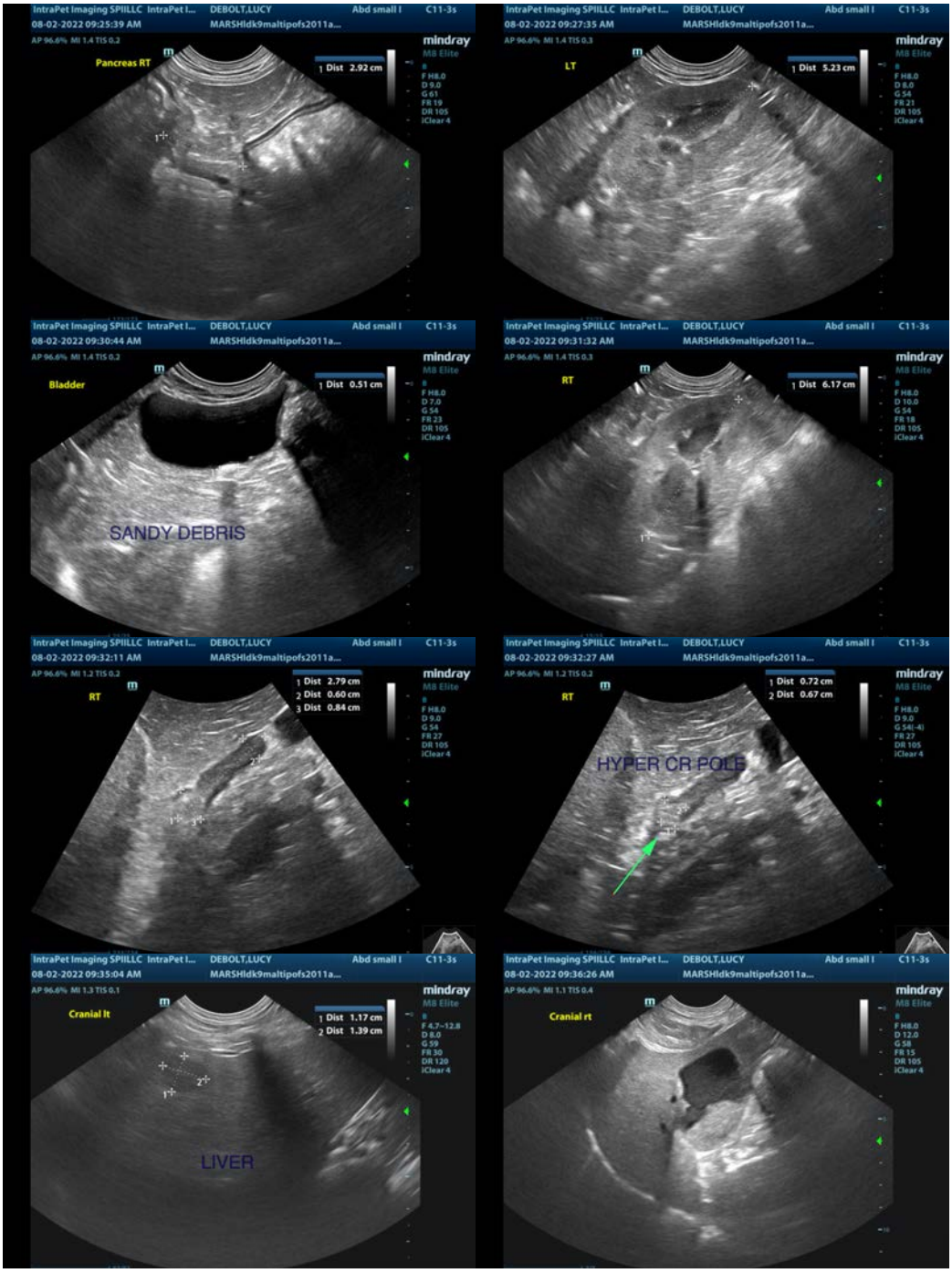
- Recommend blood pressure evaluation-if hypertensive consider testing catecholamine levels for a possible pheochromocytoma

- If no symptoms of cushings 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.

There is some sandy debris visualized on today's scan in the urinary bladder and urethra. I suspect this debris is small enough to pass in a female dog, but correlate the size of these mineralizations with radiographs. Recommend urinalysis and culture.

The liver is heterogeneous and large with occasional ill-defined hypoechoic nodules. These trend towards a more benign appearance, but if significant liver enzyme elevations are present, you could consider a liver function test and a fine needle aspirate.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Pancreas RT
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SANDY DEBRIS
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RT
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2 Dist 0.67 cm
HYPER CR POLE
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mindray M8 Elite
Cranial lt
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2 Dist 1.39 cm
LIVER
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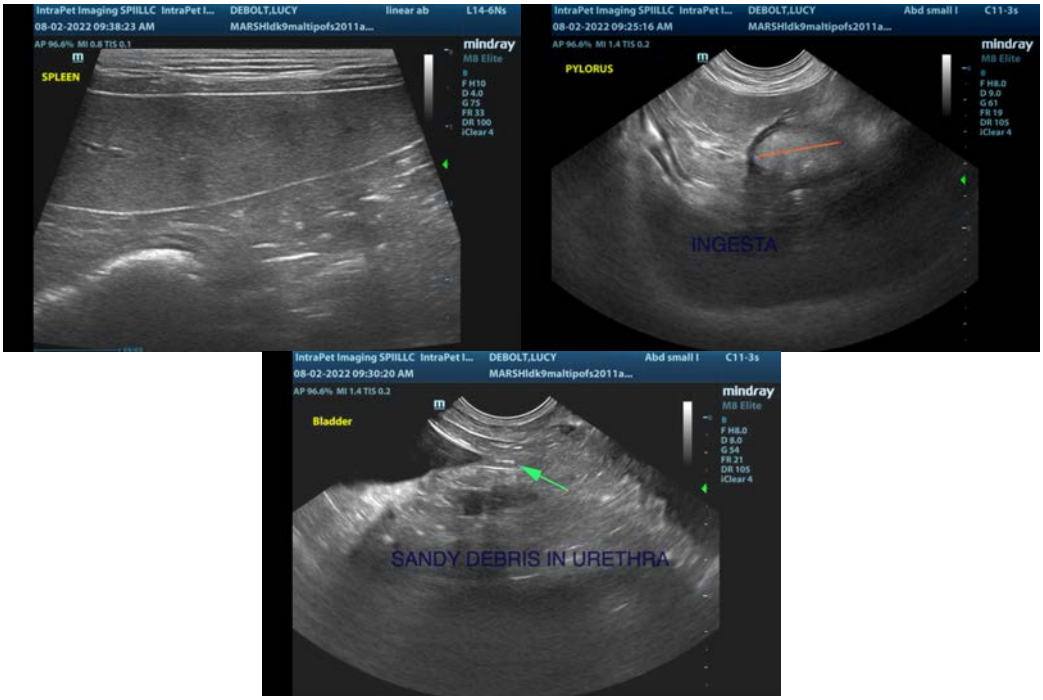
Cranial rt



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