

**DATE PRESENTING CLINICAL SIGNS**

8/26/21 General malaise - lethargy, increased respiratory rate sometimes.
 Pet is eating very well per owner, eats anything given. Pet's abdomen was slightly tense on abdominal palpation but could have been stress.

PATIENT

Moses Tolly Current Medications: N/A
 Radiographs: slight loss of serosal detail of abdomen. Possible dorsal elevation of stomach.
 Date of Previous IntraPet Ultrasound: No previous

SPECIES

Canine Sedation: not needed
 Stat Report: not requested

BREED

Lhasa Apso

SEX

Neutered Male

AGE

2007

WEIGHT

19.2 Pounds

INTERPRETED BY

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 (Small Animal Internal
 Medicine)

HOSPITAL NAME

Essex Middle River VC

REFERRING VET

Dr. Beizavi

INVOICE

24980

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. There is a small mineralization present in the dependent portion of the bladder measuring 0.29 cm. Additionally, there is a shadowing stone within the prostatic urethra measuring 0.64 cm.

The prostate is normal in size (0.94 cm) and shape for this neutered male dog. The parenchyma is homogenous and the external margins are smooth. The prostatic urethra appears normal with no evidence of irregularity, invasion, or mass effect. There is a mineralization evident within the prostatic urethra measuring 0.64 cm.

The left kidney has a normal shape and size (4.84 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, infarcts or hydronephrosis. There are numerous small non obstructive stones and 1.0 cm cortical cyst. Renal vasculature is normal.

The right kidney has a normal shape and size (5.16 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, infarcts or hydronephrosis. There are numerous small non obstructive nephroliths/mineralizations present. Renal vasculature is normal.

Adrenal Glands

The left adrenal gland is normal in size measuring 0.58 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 1.32 cm at the cranial pole and 0.74 at the caudal pole. 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. The cranial pole appears large and hyperechoic with a nodule measuring 1.32 cm x 1.54 cm. There is no inflammation surrounding the adrenal gland, and there is no evidence of free fluid or obvious 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. No focal parenchymal abnormalities are visualized.

Liver

The liver is subjectively normal 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. 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.

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 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. 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 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.

Other

A brief view of the heart was submitted. No pericardial effusion was seen.

ULTRASONOGRAPHIC FINDINGS

- Right-sided hyperechoic adrenal nodule – possible differentials include neoplasia (adenoma, carcinoma, pheochromocytoma), hyperplasia, inflammation, other.
- Small stones visualized in the urinary bladder and prostatic urethra
- Decreased corticomedullary distinction in both kidneys with non-obstructive nephroliths and a cortical cyst in the left kidney – Mild loss of corticomedullary distinction in both kidneys could be consistent with chronic degenerative disease or interstitial nephrosis.
- 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.

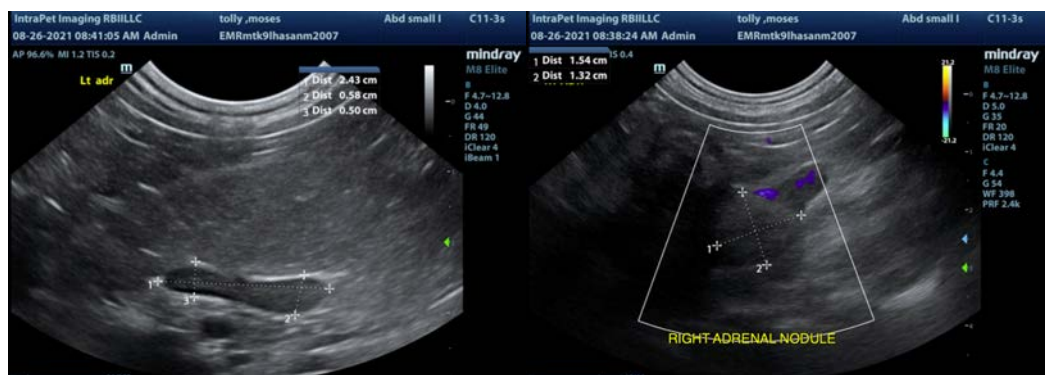
INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

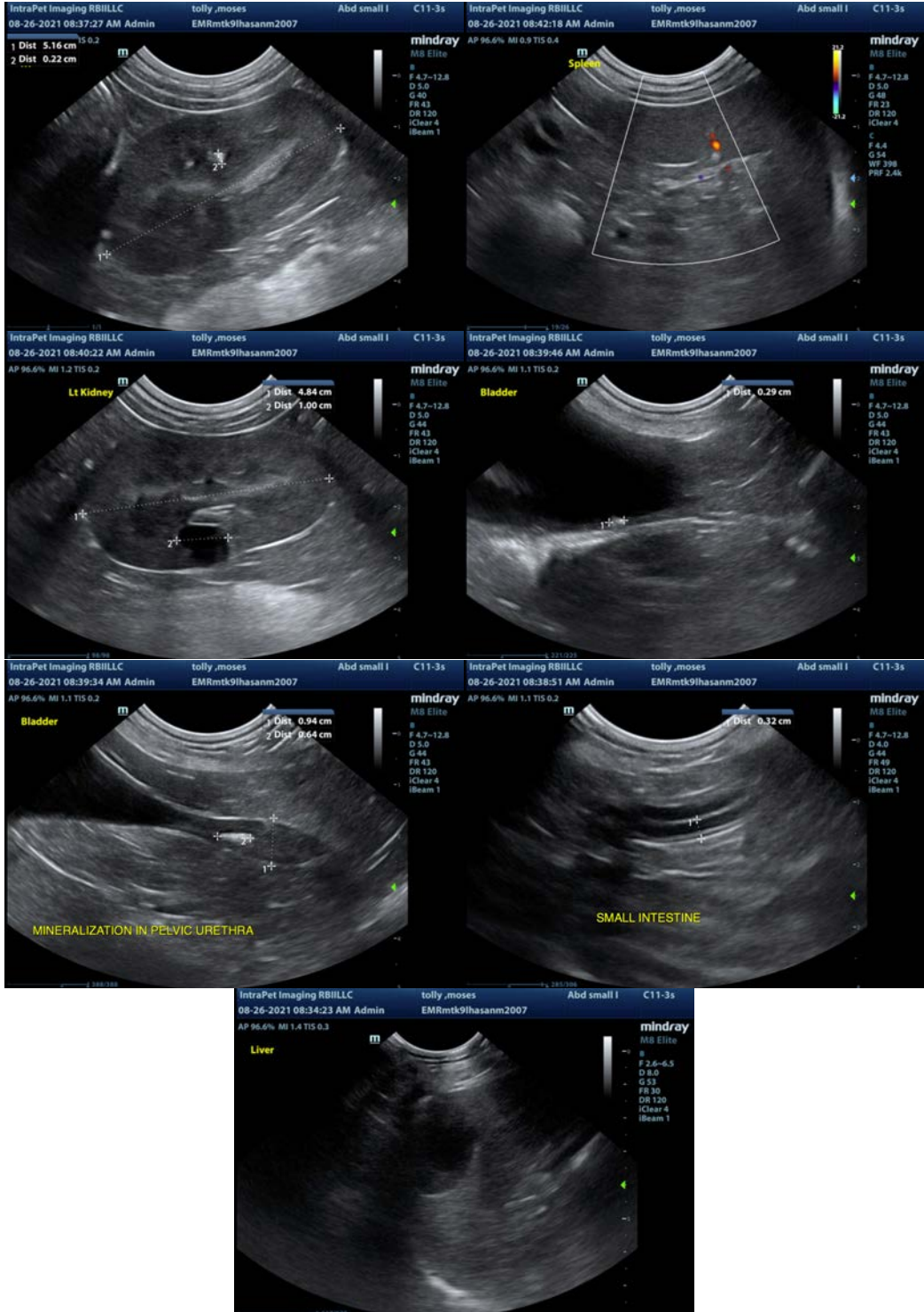
There is a nodule visualized associated with the right adrenal gland. This nodule is relatively small and somewhat regular in shape with no clear evidence of early invasion. These nodules can be benign or malignant and can secrete hormones or be nonactive. Options moving forward include:

- 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 lisdexamfetamine 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, there are some small stones visible in the urinary bladder and prostatic urethra. Recommend urinalysis and culture. I cannot see these on the radiographs submitted, but fecal material and positioning (back legs in the way) could make this more difficult. Options moving forward include continued monitoring of the stones, making sure there is no concurrent infection, and having the owner monitor for any signs of obstruction, or possible cystotomy, but I would confirm that the prostatic urethral stone could be retro-pulsed into the urinary bladder before considering this.

The reported symptoms can certainly be due to Cushing's disease. Once more information is obtained, you could consider either surgical or medical therapy.





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.

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