

**DATE**

10/5/21

PRESENTING CLINICAL SIGNS

Patient has been drinking excessively for the past few months; urine output appears WNL. Has an ongoing cough. Has a history of glaucoma.

PATIENT

Poppy Rose Shelton

Current Medications: -50mg Doxycycline PO BID x 14 days (started 9/30) -Eye meds (Latanoprost TID OU, Ketorolac SID OU, Dorzolamide TID in OD and SID in OS).

Lab Results: Elevated ALP w/ normal LDDST.

Date of Previous IntraPet Ultrasound: No previous

Sedation: not needed

Stat Report: not requested

SPECIES

Canine

ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN**BREED**

Shih Tzu Mix

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.

SEX

Spayed Female

The left kidney has a normal shape and size (4.27 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. Pinpoint, non-obstructive nephroliths were noted. There is no evidence of pyelectasia, infarcts or hydroureter. Renal vasculature is normal.

AGE

2009

The right kidney has a normal shape and size (4.55 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.

WEIGHT

16 lbs

INTERPRETED BY

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

Adrenal Glands

The left adrenal gland is large in size measuring 1.0 cm at the cranial pole, 0.37 cm at the caudal pole and 1.99 cm in length. It is observed in its normal position cranial to the left renal artery. It is normal in appearance (uniformly hypoechoic), but it is irregular in shape with a large, cranial pole creating the effect of a left adrenal nodule.

The right adrenal gland is normal in size measuring 0.61 cm at the cranial pole, 0.54 cm at the caudal pole and length is 1.46 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.

HOSPITAL NAME

Creswell VC

REFERRING VET

Dr. Cullum

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.

INVOICE

92176

Liver

The liver is subjectively normal in size, and echogenicity with smooth peripheral margins. There are occasional, poorly defined, hypoechoic nodules. One is visualized along the diaphragm at 1.95 cm. 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 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 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. The duodenum measured as normal and the jejunum measured as normal (0.27 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.

ULTRASONOGRAPHIC FINDINGS

PRIMARY FINDINGS:

- Left-sided adrenal nodule. Left adrenomegaly could be consistent with neoplasia (e.g., adenoma, carcinoma, pheochromocytoma), hyperplasia, inflammation, other.
- Heterogenous 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.

SECONDARY FINDINGS:

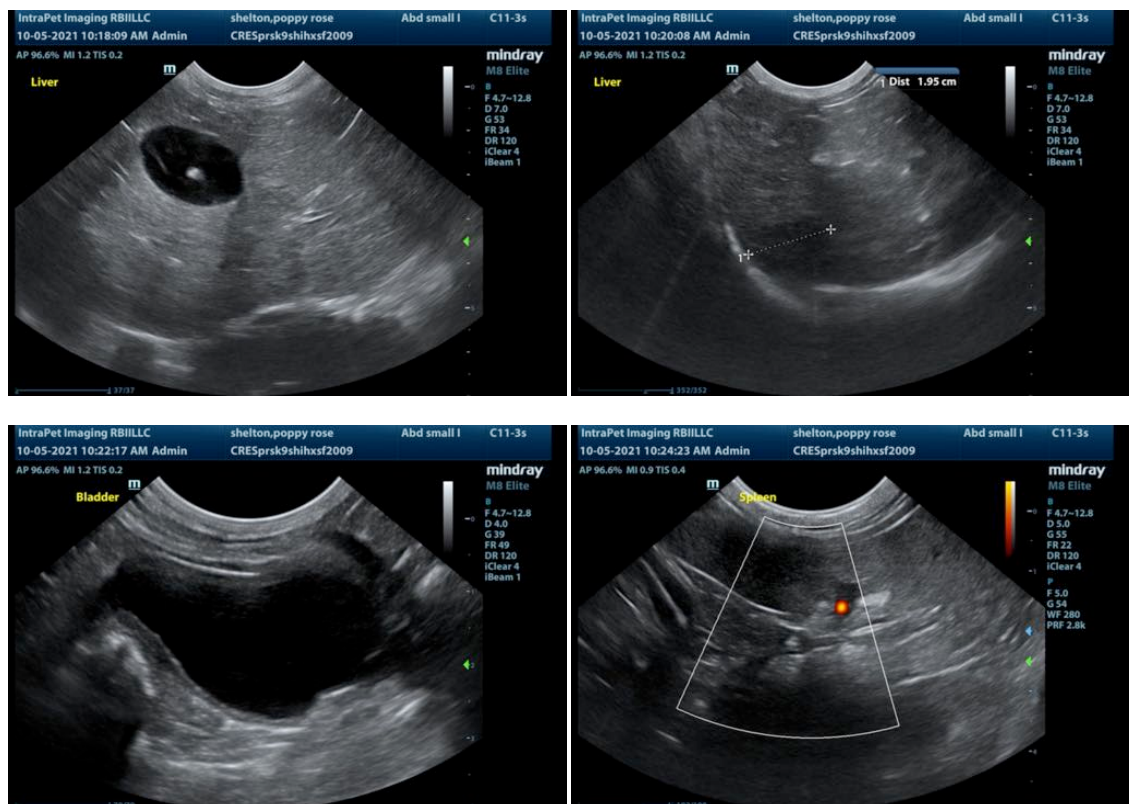
- Mild loss of corticomedullary distinction in both kidneys could be consistent with chronic degenerative disease or interstitial nephrosis. The bilateral renal findings are consistent with age-related change. The hyperechoic mineralized foci observed at the corticomedullary junction of the left/right kidney are consistent with small, non-obstructive nephroliths.
- Mottled, prominent pancreas. The pancreatic changes are most consistent with mild pancreatitis/pancreatic infiltration. I recommend fPLI testing and continued monitoring for improvement or possible development of a pancreatic abscess. Consider FNA if not improving.

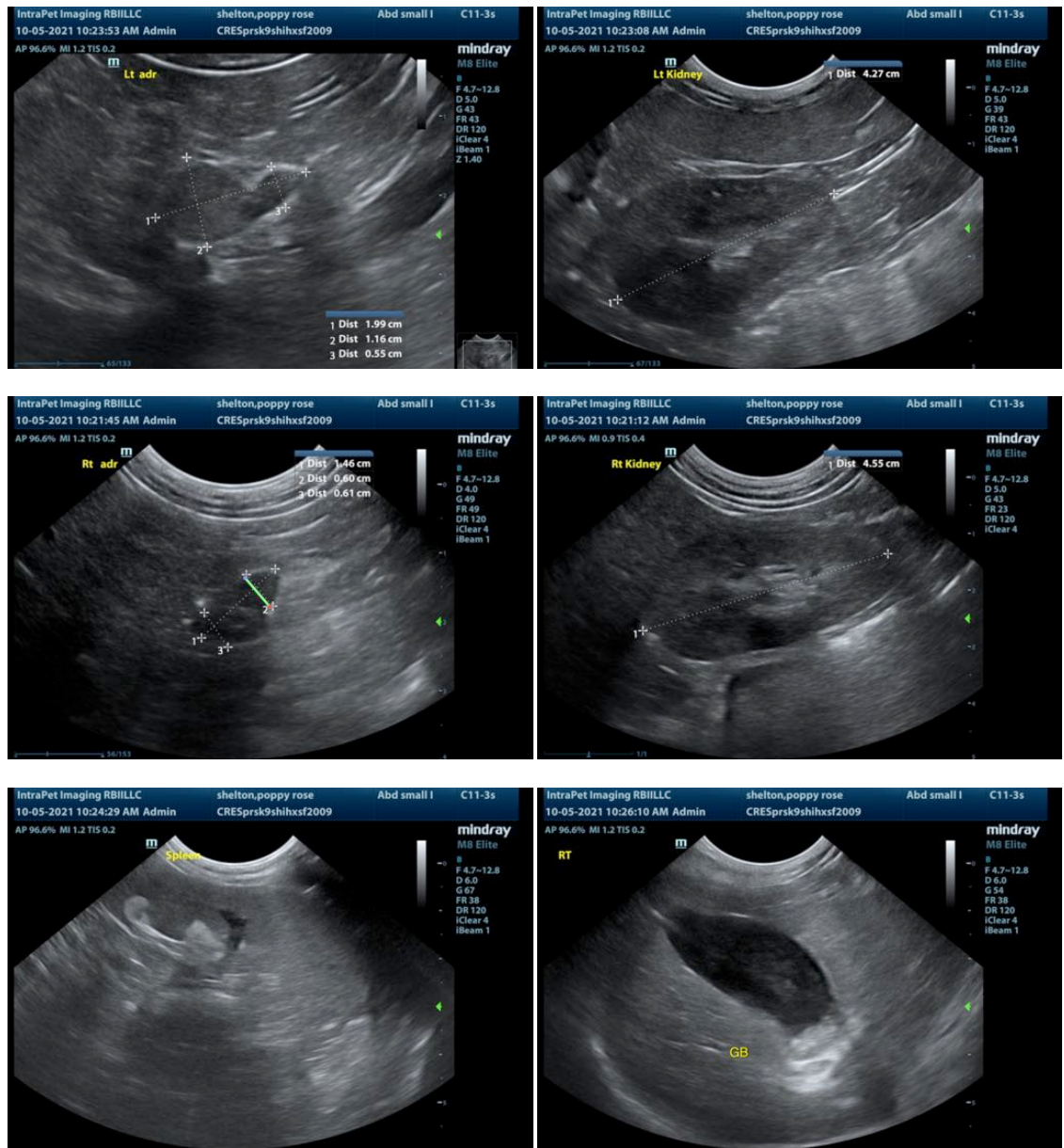
INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

There is mass/nodule present involving the left adrenal gland that is relatively small. 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. 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 unpredictable nature of these masses/nodules a CT scan is recommended to evaluate for metastasis and vascular invasion.
- If no symptoms of Cushing's are present (but I suspect they are based on the history) consider either referral for a veterinarian surgery for consultation on possible removal in advanced imaging or consider medical therapy to try and lower hormone levels and control symptoms. This can be challenging. Continue to monitor this nodule with imaging as occasionally these can be more aggressive lesions and grow quickly.
- I recommend three view thoracic radiographs.

I suspect that the liver changes are consistent with a vacuolar hepatopathy/response to hormones, but primary liver disease cannot be excluded. You can consider a liver function test or FNA of the liver.





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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