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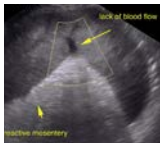
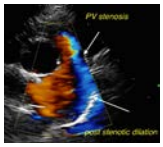
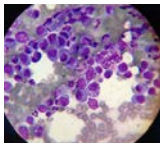
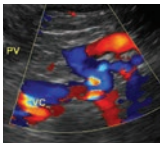

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1-800-838-4268 info@sonopath.com

PATIENT

Zuzu Maselli

SPECIES

Canine

BREED

Shih Tzu

SEX

Spayed Female

AGE

13 Years

WEIGHT

15 Pounds

INTERPRETED BY

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

IMAGING PERFORMED BY

Dr. Elaina Petrone

HOSPITAL NAME

Long Branch AH

REFERRING VET

Dr. Elaina Petrone

INVOICE

40771

DATE

8/25/22

PRESENTING CLINICAL SIGNS

History of -Hypercalcemia -Primary hyperparathyroidism -Proteinuria -USG: 1.013 -Skin issues- recurrent pyoderma and allergic dermatitis -SQ skin masses -KCS

ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN

Urinary System

The urinary bladder is minimally distended with anechoic urine. The Bladder wall appears diffusely mildly thickened at 0.34 cm. The area of the trigone, ureteral papillae and visible urethra (to a depth of 2cm) appear free of any calculi or mass lesions. Findings are most consistent with lack of urine distention, less likely mild cystitis.

The left kidney has a normal shape and size (4.83 cm). 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, nephroliths, infarcts or hydroureter. Renal vasculature is normal.

The right kidney has a normal shape and size (4.84 cm). 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, nephroliths, infarcts or hydroureter. Renal vasculature is normal.

Adrenal Glands

The left adrenal gland is large, measuring 0.49 cm at the caudal pole, 0.80 cm at the cranial pole, and 2.01 cm in length. It is observed in its normal position cranial to the left renal artery. It is somewhat abnormal in appearance in that there is a hyperechoic nodule in the cranial pole measuring 0.83 cm x 0.63 cm. This does not appear to significantly deform the adrenal. There is no obvious vascular invasion visualized.

The right adrenal gland is normal in size measuring 0.77 cm 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 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 normal in size, and echogenicity with smooth peripheral margins. The parenchyma is homogenous echotexture. The visible portions of the vasculature and biliary tract appear normal. There is a discrete hyperechoic nodule visualized in the cranial aspect of the liver, measuring 2.01 cm in diameter.

The gall bladder lumen is significantly distended. Some areas of the wall appear mildly thickened with adherent debris. There is a large amount of primarily non-organized echogenic debris. There is a 0.33 cm shadowing stone within the gallbladder. There is no evidence of bile duct dilation. These changes can be consistent with an early gall bladder mucocele.

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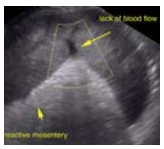
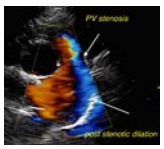
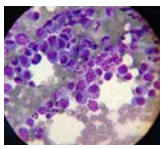
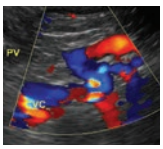

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Gastrointestinal

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 thickness is moderately increased. Bowel loops follow a typical curvilinear path. Some areas have reduced detail of wall layering. Duodenum wall measures 0.52 cm. Jejunum wall measures 0.39 cm. There is mild mucosal speckling noted. 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.

PRIMARY FINDINGS

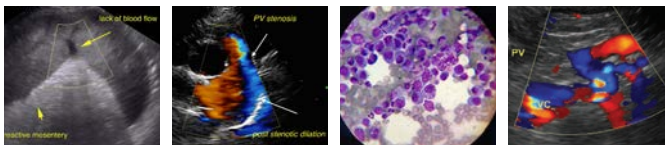
- Hyperechoic nodule in the cranial pole of the left adrenal gland – Left adrenomegaly could be consistent with neoplasia (e.g., adenoma, carcinoma, pheochromocytoma), hyperplasia, inflammation, other.
- Hyperechoic nodule in the liver – Hyperechoic nodules tend to be more benign in activity, but an underlying neoplastic process cannot be ruled out.
- Large gallbladder debris with a small mineralization/stone – The significance of the aggregated gallbladder sludge is unclear. This could represent an early mucocele, cholestasis, or may be secondary to fasting.
- Mildly thickened small intestine with mucosal speckling – Bright mucosal speckling has been proposed to represent dilated lacteals or focal accumulation of mucus, cellular debris etc.. in the mucosal crypts of the small intestine.

SECONDARY FINDINGS

- Diffusely mildly thickened urinary 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.
- Hyperechoic foci visualized within the spleen – most consistent with benign myelolipomas.

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

There is a hyperechoic nodule in the cranial pole of the left adrenal gland. This nodule is relatively small



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and is not deforming the adrenal gland significantly, and doesn't appear to have any evidence of vascular invasion. These nodules can be benign or malignant and can secrete hormones or can be nonactive. Options moving forward include:

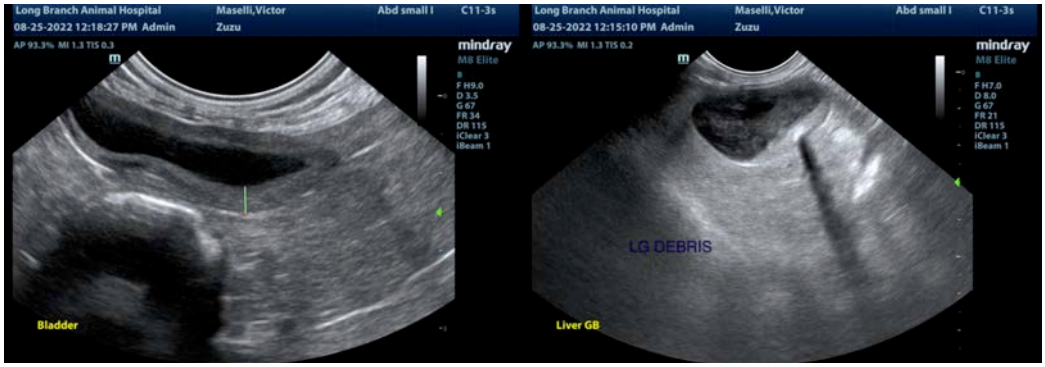
- If signs of cushings are present, consider adrenal function testing. I prefer an ACTH stimulation test combined with an adrenal panel to the University of Tennessee's endocrine lab to look for atypical adrenal hormones as well as cortisol. (other testing can suffice)
- If adrenal dependent cushings 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 a hyperechoic nodule visualized in the liver. The position of this nodule would be difficult for a fine needle aspirate. Options moving forward include continued monitoring with ultrasound or a contrast CT scan to better evaluate this lesion and consider surgical removal/biopsy.

There is a large amount of debris visualized within the gallbladder with some of it starting to adhere to the gallbladder wall. Additionally, there is a very small shadowing mineralization present. Consider starting Ursodiol therapy and continuing to monitor the gallbladder for possible progression to a surgical lesion.

The small intestine appears mildly thickened with some mucosal speckling. The significance of this is unclear if there are no underlying gastrointestinal signs. If chronic symptoms are present, further workup for GI disease could be considered.

Consider three view thoracic radiographs to rule out concurrent thoracic disease/involvement



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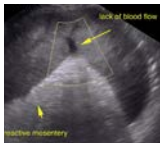
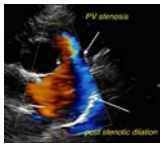
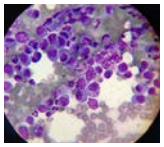
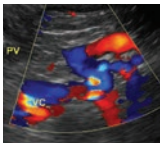

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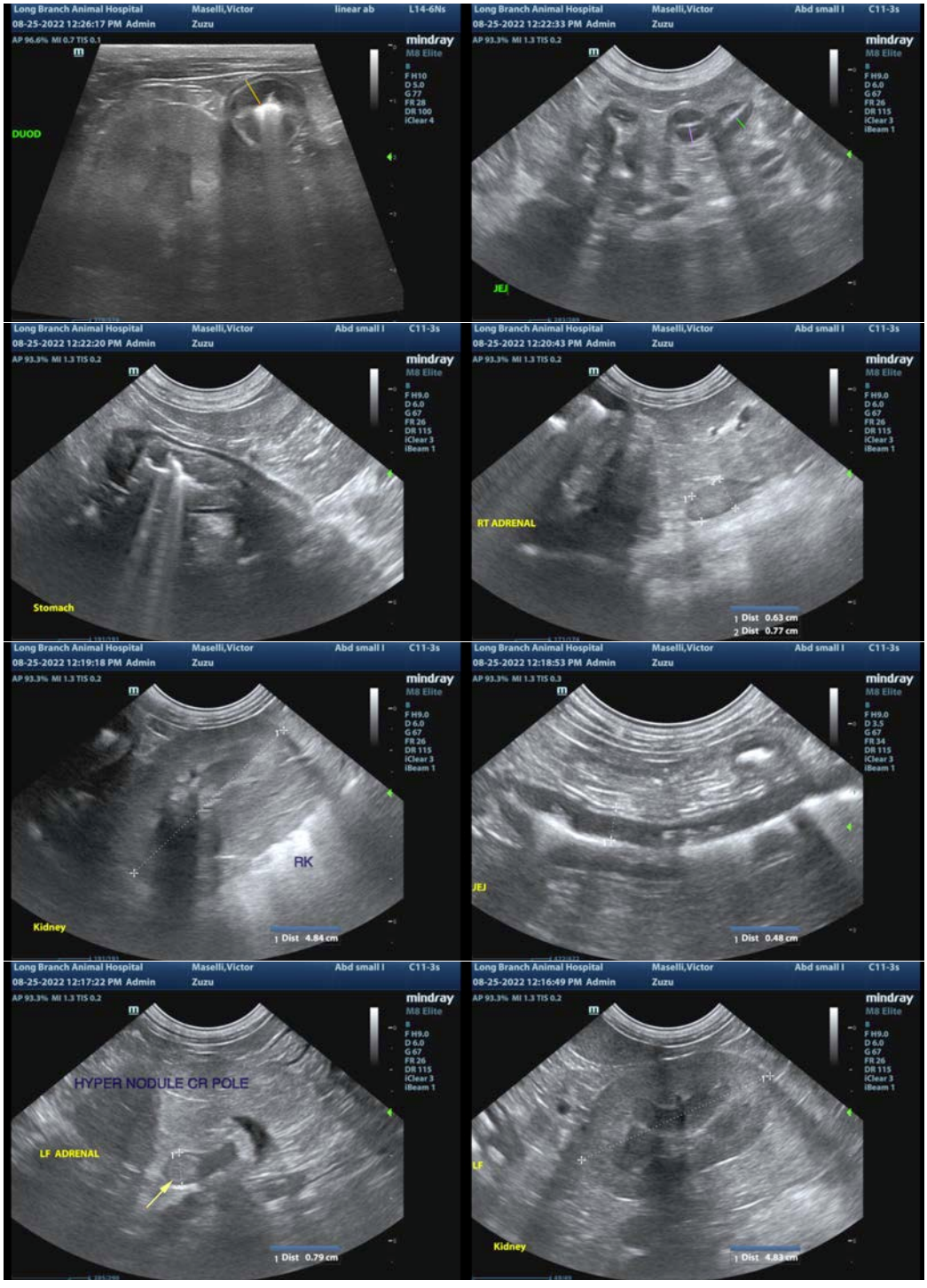

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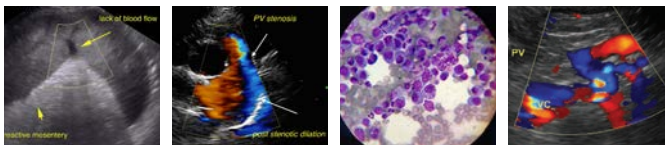

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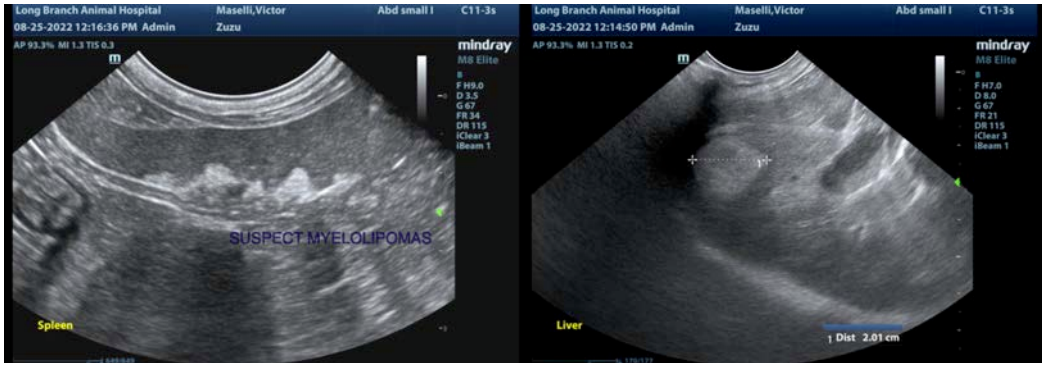

The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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