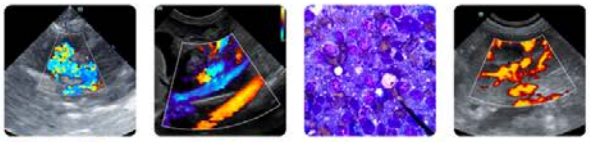

PATIENT

Cocoa Kuhn

SPECIES

Canine

BREED

Shih Tzu x

SEX

Spayed Female

AGE

13 Years

WEIGHT

20.5 lbs

INTERPRETED BY

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

IMAGING PERFORMED BY

Dr. Meg Walker

HOSPITAL NAME

Weddington Animal Hospital

REFERRING VET

Dr. Meg Walker

INVOICE

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DATE

2/17/26

PRESENTING CLINICAL SIGNS

13yo FS with history of controlled Cushing's disease. Recent increase in liver enzymes and PSL, persistent hypercalcemia. Ca2+ panel pending. P is otherwise asymptomatic at this time.

Abnormal PE/Chem/CBC/UA Results: 7/2025: Pre/post ACTH stim 5.1/5.3 1/27/2026: CBC: WNL Chemistry: ALT 159, ALP 3373, mildly elevated BUN (34), moderate hypercalcemia (11.9), cholesterol 370, trig 595, PSL 296 T4: WNL U/A: 1.039 USG, trace protein 1/2026: ACTH/Ca2+ stim pending

ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN

Urinary System

The urinary bladder is mildly distended with anechoic urine. The Bladder wall appears somewhat thickened, particularly in the apical wall, measuring 0.51 cm. There is evidence of dependent shadowing mineralized debris/small stones. The region of the trigone, ureteral papillae and proximal urethra appear free of any mass lesions or calculi.

The left kidney has a normal shape and size (4.6 cm) with numerous shadowing non-obstructive nephroliths and occasional small cortical cysts. Overall echogenicity is slightly hyperechoic with poor corticomedullary distinction and a typical 1:3 cortex:medulla ratio. There is no evidence of focal 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 (3.36 cm) with numerous shadowing non-obstructive nephroliths and occasional small cortical cysts. Overall echogenicity is slightly hyperechoic with poor corticomedullary distinction and a typical 1:3 cortex:medulla ratio. There is no evidence of focal perinephric inflammation or effusion. There is no evidence of pyelectasia, infarcts or hydroureter. Renal vasculature is normal.

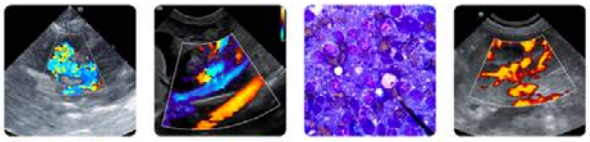
Adrenal Glands

The left adrenal gland is "plump" measuring 0.70 cm at the cranial pole and 0.51 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 and irregular in appearance, measuring 1.23 cm at the cranial pole and 0.66 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 abnormal in appearance in that there is a hyperechoic nodule in the cranial pole with some small, mineralized foci. The cranial pole measures 1.05 cm x 1.21 cm. No evidence of vascular invasion is visualized.

Spleen

The spleen is subjectively normal in size but slightly irregular in shape, measuring 0.88 cm. The blood flow through the hilus and splenic parenchyma appears normal. There are numerous poorly defined hyperechoic/mottled lesions most consistent with benign myelolipomas. Additionally there is a slightly irregular mixed echogenicity area cranial to the hilus measuring 0.91 cm x 0.53 cm, suspected to be a normal irregularity/myelolipoma, but continued monitoring is warranted.



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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 parenchyma.

The gall bladder lumen is moderately distended. The wall of the gall bladder is not thickened and has a smooth mucosal surface. Luminal contents are mild and likely incidental at this time. 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. Duodenum wall measures 0.36 cm. Jejunum wall measures 0.30 cm. Visualized peristalsis appears appropriate. There were no focal lesions consistent with obstruction or a mass effect observed.

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 visible/mildly mottled in the right limb. 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

- Borderline “plump” adrenal glands with a hyperechoic nodule at the cranial pole of the right adrenal gland – Findings could be consistent with anatomic variation or mild bilateral hyperplasia. The hyperechoic nodule at the cranial pole has an appearance most consistent with a benign lesion (adenoma), although an early neoplastic lesion (carcinoma, pheochromocytoma, other) cannot be ruled out.
- Age related changes and non-obstructive nephroliths visualized associated with both kidneys – Hyperechoic foci are visualized in the kidney most consistent with nephroliths. There is no current evidence of obstructive disease. Correlate findings with abdominal radiographs, urinalysis, and culture. Continued monitoring is warranted for progression/obstruction.
- Thickened bladder wall with large amount of dependent mineralized debris/small stones – Correlate with urinalysis, culture and radiographs.

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- Mild irregularity and ill-defined hyperechoic foci in the spleen – Findings are suggestive of benign myelolipomas. Recommend continued monitoring, particularly of the small irregularity cranial to the hilus.

- Large, mildly heterogeneous liver with il-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 nodules observed trend toward a more benign process but underlying neoplasia cannot be ruled out.

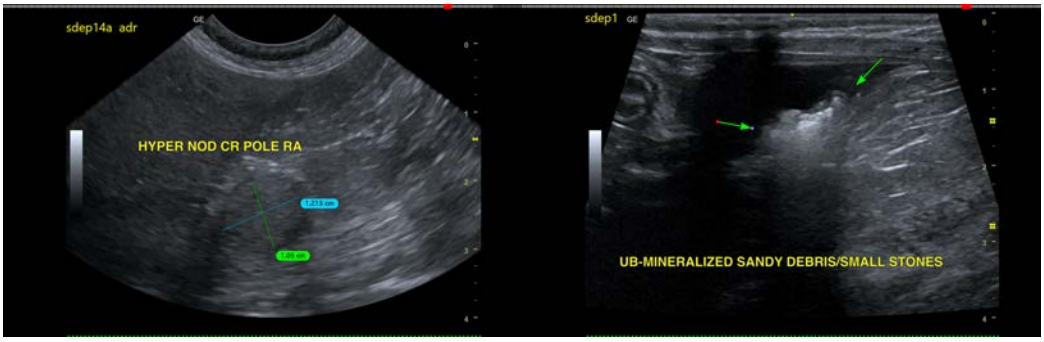
INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

There is a hyperechoic nodule visualized associated with the right adrenal gland. Correlate with patient's history. This patient could always have had adrenal dependent Cushing's, or this could be a scenario of pituitary dependent hyperadrenocorticism concurrent with an adrenal nodule (active or non-active). If surgical intervention would be considered, recommend a contrast CT scan to further evaluate both adrenals and to look for any evidence of vascular invasion. Additionally recommend a blood pressure. If hypertension is present, consider measuring catecholamine levels, looking for possible pheochromocytoma. If surgical intervention would not be pursued, consider continued monitoring with ultrasound (recheck in 2-4 months), looking for rapid growth/enlargement.

Both kidneys have changes consistent with chronic renal disease and non-obstructive nephroliths. Additionally, there is a large amount of sandy debris/small stones visualized in the urinary bladder. Correlate with radiographs to better assess stone size, etc. It is possible that this material could be flushed out of the urinary bladder depending on the size.

The hepatic changes are most consistent with vacuolar hepatopathy although other hepatopathies are possible. If further evaluation is desired, you could consider a liver function test and a fine needle aspirate.

Recommend three view thoracic radiographs to evaluate for possible concurrent thoracic disease/involvement (disregard if this has already been done).



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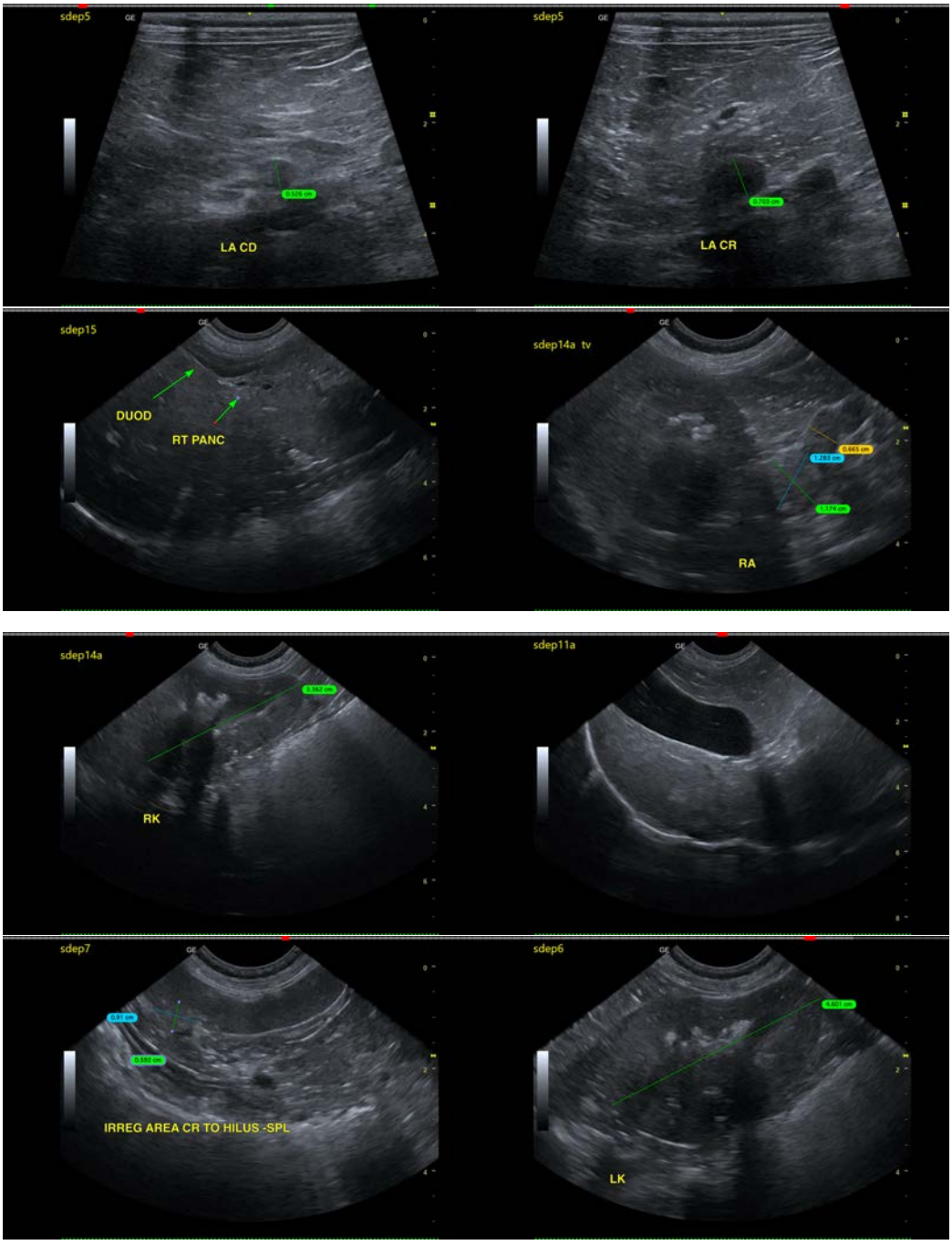

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The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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)

info@sonopath.com