



**PATIENT**

Charlie Pinkstone

**PRESENTING CLINICAL SIGNS**

Polyphagia, weight gain, and recent UTI. Slowly elevating ALP since 2017, now up to 1463, otherwise normal CBC / Chem. Urine SpGr 1,048 with pyuria, bacteriuria.

**SPECIES**

Canine

**ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN**

**Urinary System**

**BREED**

Miixed

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 (6.37 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.

**AGE**

13.5 Years

The right kidney has a normal shape and size (6.31 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**

55 Pounds

**Adrenal Glands**

The left adrenal gland is normal in size measuring 0.57 cm at the cranial pole, 0.87 cm at the caudal pole, and 1.9 cm in length. It is observed in its normal position cranial to the left renal artery. It is somewhat irregular in appearance in that the caudal pole is significantly larger than the cranial pole, but there is no change in echogenicity or nodule effect. Vasculature appears normal.

**INTERPRETED BY**

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

The right adrenal gland is normal in size measuring 0.68 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.

**IMAGING PERFORMED BY**

Dr. Tam Mengine

**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.

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**Liver**

The liver is large in size, irregular and nodular. The parenchyma is heterogenous in echotexture with subtle, indistinct focal mottling. The visible portions of the vasculature and biliary tract appear normal. The entire parenchyma is diffusely nodular with too numerous to count ill-defined hypoechoic nodules varying in size from 0.5-2.0 cm.

**REFERRING VET**

Dr. Tam Mengine

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.

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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.

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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 measured 0.56 cm. Jejunum wall measured 0.43 cm. Visualized peristalsis appears appropriate. There were no focal lesions consistent with obstruction or a mass effect observed.

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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. Wall thickness measured 0.21 cm.

**BREED**

Mixed

**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.

**SEX**

Spayed Female

**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.

**AGE**

13.5 Years

**PRIMARY FINDINGS**

**WEIGHT**

55 Pounds

- Prominent caudal pole of the left adrenal gland – This could be a normal anatomic variation or an early mass lesion. The caudal pole does not appear significantly deformed, but is slightly irregular. Possible differentials include hyperplasia, adenoma, carcinoma, or pheochromocytoma.

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(Small Animal Internal  
Medicine)

- Large, severely heterogeneous, nodular 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. The diffuse nodular pattern could be consistent with a benign or neoplastic process. Recommend a fine needle aspirate.

**IMAGING PERFORMED BY**

Dr. Tam Mengine

- Moderate gallbladder sludge – The significance of the aggregated gallbladder sludge is unclear. This could represent an early mucocele, cholestasis, or may be secondary to fasting.

**SECONDARY FINDINGS**

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- Decreased corticomedullary distinction in both kidneys – The bilateral renal findings are consistent with age-related change.

**INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS**

**REFERRING VET**

Dr. Tam Mengine

The caudal pole of the left adrenal gland is enlarged and subtly irregular. It does not appear to be deforming the adrenal gland significantly, and doesn't have any evidence of vascular invasion. These types of lesions can be benign or malignant, and can secrete hormones or be non-active. Options moving forward include:

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- 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)

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- 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)

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

**BREED**

Miixed

- 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.

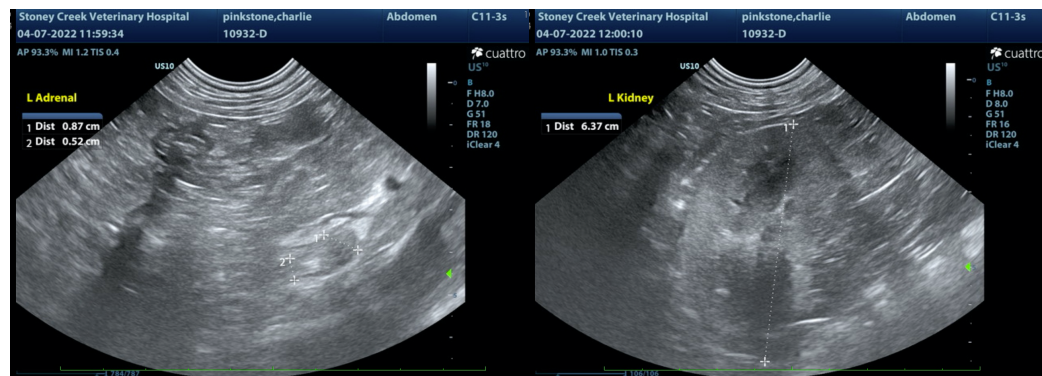
**SEX**

Spayed Female

The liver is diffusely nodular. This could represent benign regenerative nodules or could be something more significant. Recommend a fine needle aspirate of the liver and 3-view thoracic radiographs. Additionally, these could represent regenerative nodules, and Cushing's disease could be present, causing a vacuolar hepatopathy (see recommendations above).

**AGE**

13.5 Years

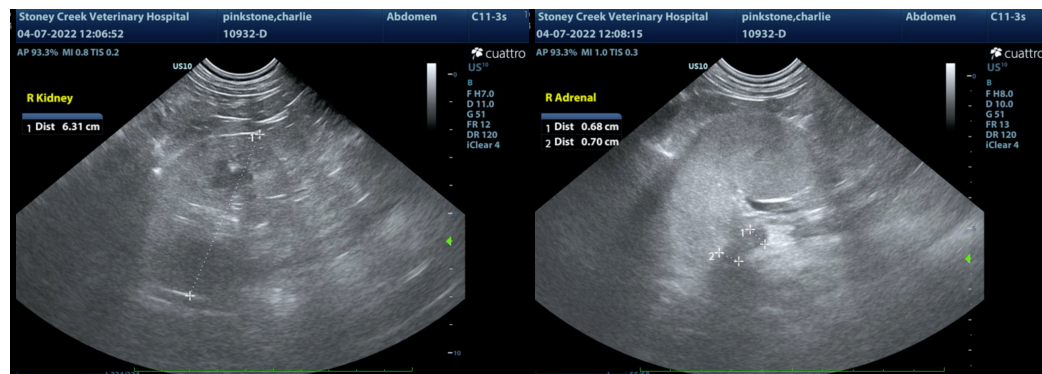


**WEIGHT**

55 Pounds

**INTERPRETED BY**

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



**IMAGING PERFORMED BY**

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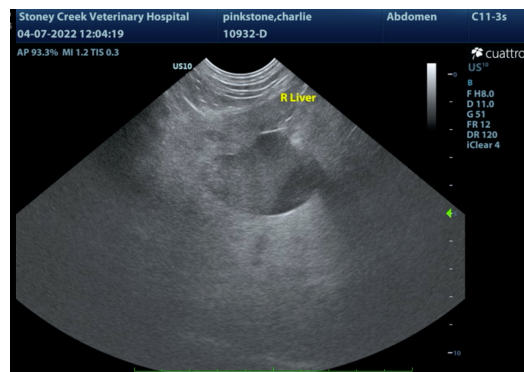
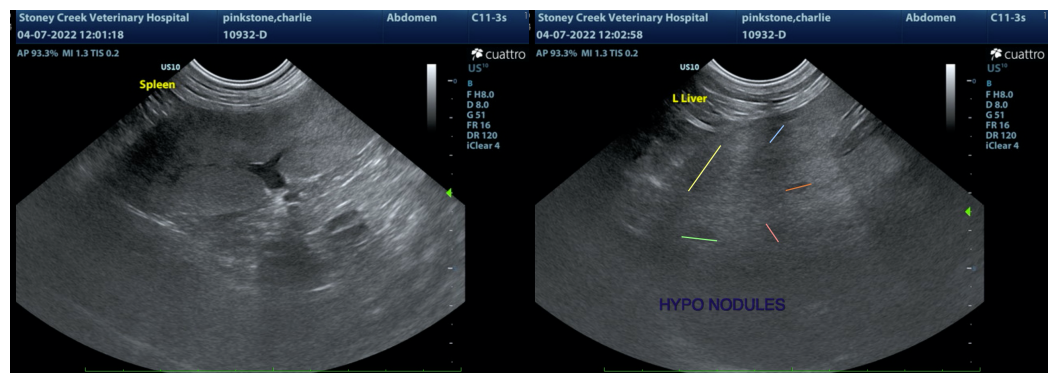
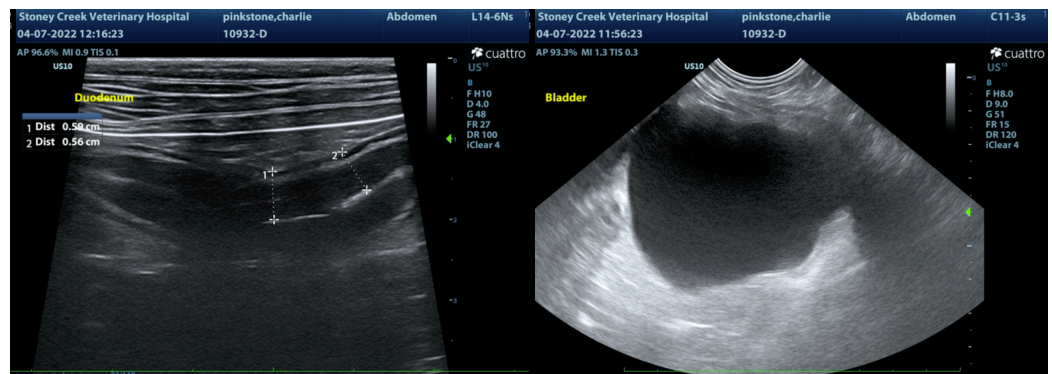
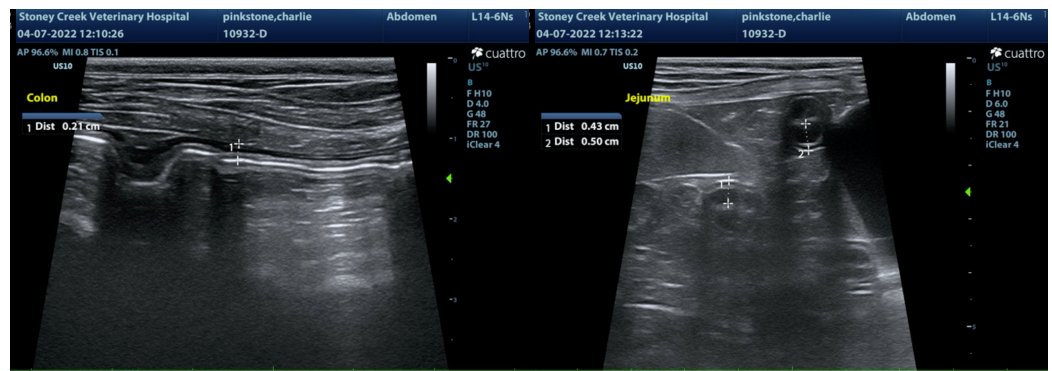
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The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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Canine

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)

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Miixed

kathleen.sennello@sonopath.com

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