



**PATIENT**

Ronix Stuk

**SPECIES**

Canine

**BREED**

German Shepherd X

**SEX**

Spayed Female

**AGE**

13 Years

**WEIGHT**

54.8 Pounds

**INTERPRETED BY**

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

**IMAGING  
PERFORMED BY**

Dr. Sheldon

**HOSPITAL NAME**

Advanced PetCare  
of Oakland

**REFERRING VET**

Dr. Sheldon

**INVOICE**

42068

**DATE**

10/13/22

**PRESENTING CLINICAL SIGNS**

This dog has been having PU/PD, suspect Cushings. Had UTI 9/20 positive culture proteus, treated with cefpod for 10 days, and urine cortisol:creatinine elevated at 48. Recent UA(10/7)- hematuria, proteinuria 2+, culture negative, but pet is still PU/PD. Last bloodwork done 5/11 CBC/Chem/T4: elevated ALP 609

**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, masses or cystic calculi.

The left kidney has a normal shape and size (6.46 cm). 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, nephroliths, infarcts or hydroureter. Renal vasculature is normal.

The right kidney has a normal shape and size (5.99 cm). 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, nephroliths, infarcts or hydroureter. Renal vasculature is normal.

**Adrenal Glands**

The left adrenal gland is normal in size measuring 0.74 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, measuring 2.96 cm at the cranial pole, 2.45 cm at the caudal pole, and 5.69 cm in length. It appears generally in the normal position for an adrenal gland but displaces the right kidney somewhat. It is abnormal in appearance in that it is large, heterogeneous, and there is a hypoechoic, heterogeneous focal area in the cranial pole measuring 3.0 cm in diameter. No obvious vascular invasion is visualized. Findings are most consistent with a right adrenal mass.

**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 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. 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 mild and primarily anechoic. There is a 1.1 cm hyperechoic shadowing structure, most consistent with a mineralization/stone. 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. The duodenum measured as normal (between 0.3-0.5cm in wall thickness) and the jejunum measured as normal (between 0.2-0.47cm.)

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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.

**Pancreas**

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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**

**WEIGHT**

54.8 Pounds

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**

**INTERPRETED BY**

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

There is a small rounded, slightly hypoechoic lesion visualized ventral to the liver in what appears to be the falciform fat, measuring 2.0 cm x 1.3 cm, possibly consistent with a lipoma. Recommend continued monitoring +/- fine needle aspirate.

**ULTRASONOGRAPHIC FINDINGS**

**IMAGING PERFORMED BY**

Dr. Sheldon

- Decreased corticomedullary distinction in both kidneys – The bilateral renal findings are consistent with age-related change.
- Large 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.
- Small mineralization visualized within the gallbladder – There is no associated inflammation. This is likely an incidental finding at this time, but continued monitoring is recommended.
- Large heterogeneous mass effect in the region of the right kidney – Findings are most consistent with a right adrenal mass. Right adrenomegaly could be consistent with neoplasia (e.g., adenoma, carcinoma, pheochromocytoma), hyperplasia, inflammation, other.
- Hypoechoic lesion/mass effect ventral to the liver – Possibly a lipoma in the falciform fat. Recommend continued monitoring +/- fine needle aspirate.

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**INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS**

There is a large mixed echogenic mass effect in the region of the right kidney that is most consistent with a right adrenal mass. This lesion is large but can still be benign or malignant and could be secreting hormones or be non-active. Consider the following recommendations:

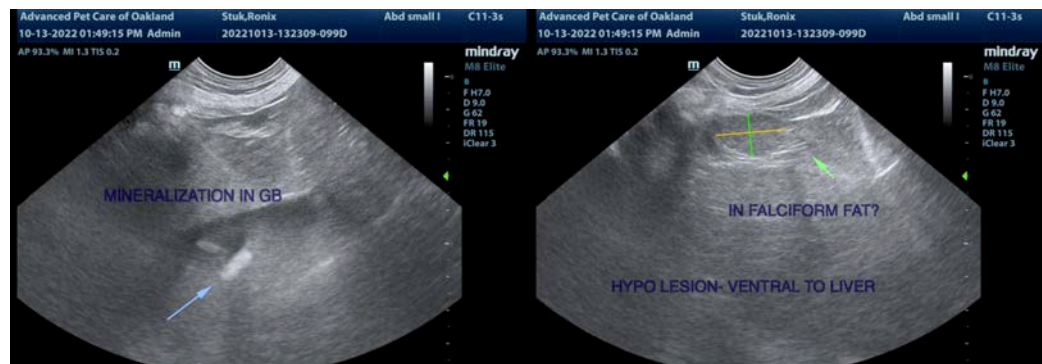
- If signs of cushings are present, consider adrenal function testing. I prefer an ACTH stimulation test combined with an adrenal panel to the University of Tennessee's endocrine lab to look for atypical adrenal hormones as well as cortisol. (other testing can suffice)
- If adrenal dependent cushings is suspected and supported by adrenal function testing consider medical therapy with lysodren or trilostane 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 invasive nature of these masses a CT scan is recommended to evaluate for metastasis and vascular invasion.
- If no symptoms of cushings are present, consider either referral for surgery or if surgery is not an option consultation with a veterinary oncologist regarding chemotherapeutic options and continued monitoring with ultrasound (in 4-6 weeks) can be considered.
- Some aggressive adrenal tumors can grow quickly and there is risk for acute hemorrhage from vascular invasion.

Recommend three view thoracic radiographs to evaluate for possible concurrent thoracic disease/involvement.

The large heterogeneous liver is most consistent with a steroid hepatopathy.

The mineralization/stone in the gallbladder is likely incidental at this time. Continued monitoring is warranted.

The significance of the slightly hypoechoic subtle nodule in what appears to be the falciform fat is unknown. This could be a lipoma. Consider a fine needle aspirate and continued monitoring. Consider palpation of this region.





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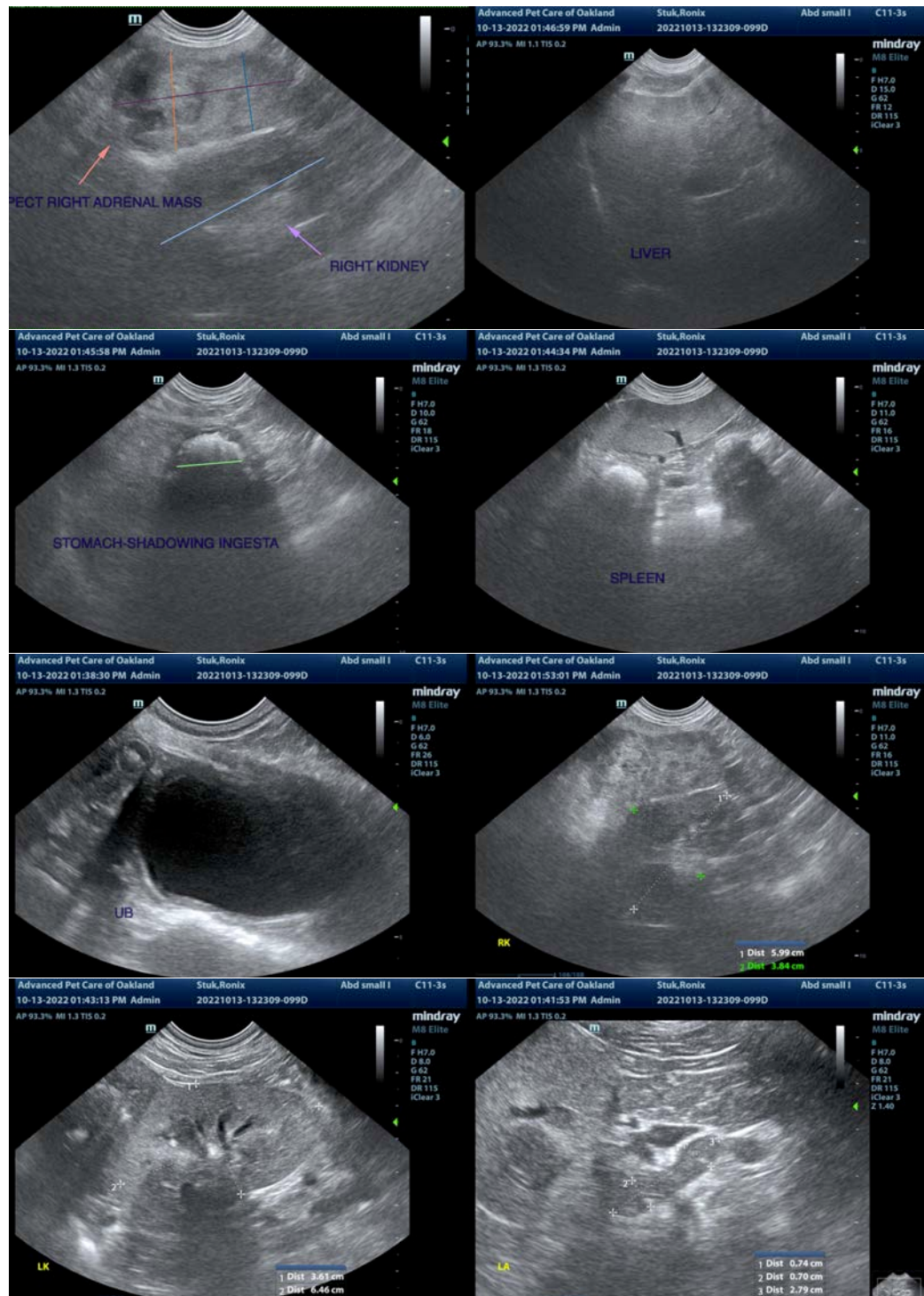
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The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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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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kathleen.sennello@sonopath.com

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