

**DATE PRESENTING CLINICAL SIGNS**

1/12/22 History: Chronic skin. Elevated Alk phos. Positive Cushing's test.

**PATIENT**

Sophie Devine

Lab Results: Alk phos 736 on 10/27/2021. Urine Cort/creat ratio 35 (<26) on 3/21/2020. Post cortrosyn cortisol 20.5 (<17) on 12/19/2021.

Date of Previous IntraPet Ultrasound: No previous IntraPet scans.

Sedation: Not required to complete full diagnostic ultrasound.

Stat Report: Not requested.

**SPECIES**

Canine

**ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN****BREED**

Shih Tzu

**Urinary System**

The urinary bladder is moderately distended with anechoic urine. The Bladder wall is irregular, particularly in the ventral dependent portion, measuring 0.32 cm. Additionally, in the apical area, there is a pedunculated mass effect measuring 0.44 cm x 0.32 cm, which is most consistent with an inflammatory polyp. The area of the proximal urethra to a depth of 2.0 cm, ureters and trigone appear devoid of any mass effects. There are numerous cystic calculi visualized in the dependent portion of the urinary bladder. Examples measure 0.71, 0.44, and 0.75 cm. Suspect there is somewhere between 3-7 stones. Correlate with radiographic findings.

**AGE**

10/1/09

The left kidney has a normal shape and size (5.4 cm) with numerous small cortical cysts and small, non-obstructive nephroliths. 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, infarcts or hydroureter. Renal vasculature is normal.

**WEIGHT**

18 Pounds

The right kidney has a normal shape and size (4.62 cm) with numerous small cortical cysts and small, non-obstructive nephroliths. 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, infarcts or hydroureter. Renal vasculature is normal.

**INTERPRETED BY**

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

**Adrenal Glands**

The left adrenal gland is normal/borderline large in size measuring 0.75 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.

**IMAGING PERFORMED BY**

Stephanie Pearce  
RDMS, RVT

The right adrenal gland is normal/borderline large in size measuring 0.69 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.

**HOSPITAL NAME**

Green Acres Pet  
Center

**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.

**REFERRING VET**

Dr. Kaschenbach

**Liver**

The liver is subjectively normal in size, and 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 is a cystic, multiloculated, hyperechoic lesion near the gallbladder on the right side of the liver, measuring 3.5 cm x 2.4 cm. Additionally, there are some hypoechoic nodules in the mid to left side of the liver measuring 1.85 cm x 2.29 cm and 1.37 cm x 0.57 cm.

**INVOICE**

34166

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.

### ***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 (between 0.3-0.5cm in wall thickness) and the jejunum measured as normal (between 0.2-0.47cm.) 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.

## **PRIARY FINDINGS**

- Borderline bilateral adrenomegaly – The bilateral adrenomegaly could be consistent with bilateral hyperplasia (e.g., secondary to pituitary-dependent hyperadrenocorticism), bilateral infiltrative neoplasia, inflammatory adrenal disease, other. Correlation with clinical findings is recommended.
- Decreased corticomedullary distinction in both kidneys with non-obstructive nephroliths and cortical cysts – Mild loss of corticomedullary distinction in both kidneys could be consistent with chronic degenerative disease or interstitial nephrosis. The hyperechoic mineralized foci observed at the corticomedullary junction of the left/right kidney are consistent with small, non-obstructive nephroliths.
- Irregular urinary bladder wall with a suspect polyp and numerous stone in the dependent portion of the urinary bladder – Recommend urinalysis and culture and radiographs to confirm number and size of stones present. Consider cystotomy.
- Heterogeneous liver with hyperechoic cystic lesion and numerous smaller 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 cystic lesion is likely a benign lesion, but should continue to be monitored. The other lesions could be benign or neoplastic lesions. They are relatively deep in the liver and would be difficult to sample. Consider continued monitoring.

## SECONDARY FINDINGS

- 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.

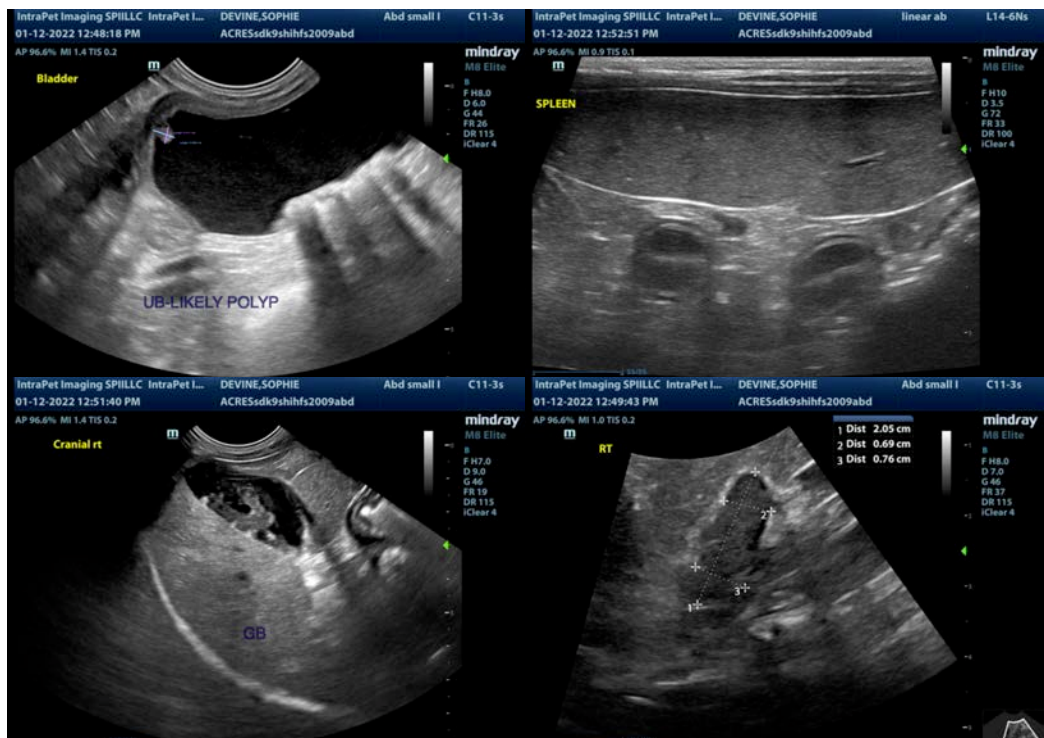
## INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

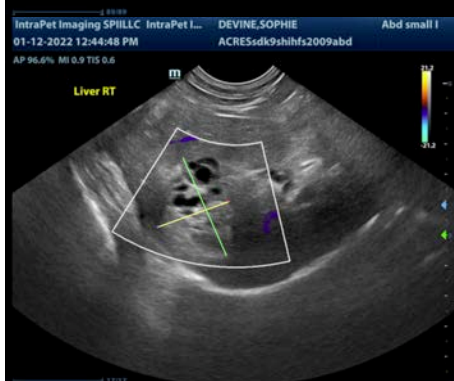
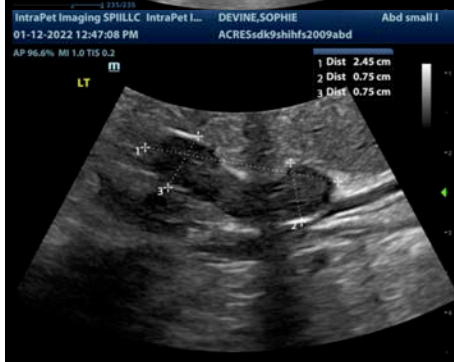
If clinical findings are consistent with Cushing's, then both adrenal glands are plump in this individual, and that could help to support your potential diagnosis of pituitary dependent hyperadrenocorticism.

There are some lesions within the liver. The cystic lesion leans towards being a benign lesion, but should continue to be monitored. The other nodules visualized could be benign or malignant. Sampling would likely be difficult, so consider continued monitoring. If they can be sampled at the time of the cystotomy this could be considered.

Additionally, the urinary bladder is thickened with a small suspected polyp and numerous bladder stones. Recommend urinalysis and culture and likely cystotomy. Recommend taking radiographs to confirm the size and number of stones present, and biopsy of the polyp/bladder wall to ensure there is no evidence of an underlying neoplastic process.

The changes in the kidneys are consistent with chronic age related renal disease. Recommend urinalysis and culture (as recommended previously) in addition to a blood pressure evaluation and continued monitoring of renal values.





**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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