



## PATIENT

Lucian Kopp

## PRESENTING CLINICAL SIGNS

sedated dex/torb- ALK PHOS went from 227 to 600. Periodontal disease.  
Abnormal PE/Chem/CBC/UA Results: AUS to check GB and liver

## SPECIES

Canine

## 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.

## BREED

Terrier X

The prostate is normal in size (0.84 cm) and shape for this neutered male dog. The parenchyma is homogenous and the external margins are smooth. The prostatic urethra appears normal with no evidence of irregularity, invasion, mass effect or calculi.

## SEX

Neutered Male

The left kidney has a normal shape and size (4.03 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 hydronephrosis. Renal vasculature is normal.

## AGE

10 Years

The right kidney has a normal shape and size (4.31 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 hydronephrosis. Renal vasculature is normal.

## WEIGHT

13 Pounds

### Adrenal Glands

The left adrenal gland is normal in size measuring 0.65 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.

## INTERPRETED BY

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

The right adrenal gland is normal in size measuring 0.50 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 BY

Loetitia Saint-Jacques,  
LVT

### 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.

## HOSPITAL NAME

North Hills VC

### Liver

The liver is large normal 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.

## REFERRING VET

Dr. Baggett

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.

## SPECIES

Canine

## BREED

Terrier X

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.

## SEX

Neutered Male

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.

## AGE

10 Years

### **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.

## WEIGHT

13 Pounds

### **Free Abdomen**

Evaluation of the peritoneal cavity did not reveal any evidence of effusion. There is no significant mesenteric lymphadenopathy, but there is a prominent sublumbar lymph node measuring 0.40 cm x 0.85 cm, which appears to be surrounded by mildly hyperechoic mesentery.

## PRIMARY FINDINGS

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Kathleen Sennello DVM,  
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- 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.

### IMAGING BY

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LVT

- 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

### HOSPITAL NAME

North Hills VC

- Prominent sublumbar lymph node – Recommend digital rectal exam to rule out any anal gland lesions or other. Recommend continued monitoring and confirm normal calcium levels.

## INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

### REFERRING VET

Dr. Baggett

No focal lesions are observed in the liver to explain the elevation in ALP reported. In cases of a primary ALP elevation, I typically recommended the following:

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- Induction phenomena are the most common cause for an elevation in ALP. These are systemic illnesses that 'turn on' the liver enzyme. Causes of this include Cushing's disease, dental disease, arthritis, and numerous others. In many cases the exact cause is unclear but as long as

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ultrasound and bile acids tests are normal most patients do not have progressive changes in their liver. While liver biopsy is not routinely performed, vacuolar hepatopathy, is noted on most biopsies. This is often non-progressive but in rare cases can be more severe and lead to liver failure.

**SPECIES**

Canine

- If signs of cushings disease are present recommend endocrine function testing to evaluate for cushings disease.

**BREED**

Terrier X

- Consider fine needle aspirate to rule out round cell neoplasia -if this is a concern.
- If a cause for the ALP elevation is not identified: I recommend recheck general blood work every 6 months, ultrasound once per year, and bile acids test every 1-2 years based on other results. If the ALP continues to climb a biopsy could be considered.

**SEX**

Neutered Male

- Consider long term use of denamarin, and monitoring for the signs of cushings developing.
- A primary vacuolar hepatopathy can be breed related and is seen in Scottish Terriers, Schnauzers, Cocker spaniels etc.

**AGE**

10 Years

There is a moderate amount of material within the gallbladder, but there is no surrounding inflammation. I would recommend continued monitoring of the gallbladder +/- Ursodiol as a preventative measure.

**WEIGHT**

13 Pounds

The sublumbar lymph node appears somewhat prominent and surrounded by hyperechoic mesentery. Recommend continued monitoring. Confirm normal calcium and consider a thorough digital rectal exam to look for any anal gland enlargement, etc.

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**HOSPITAL NAME**

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**REFERRING VET**

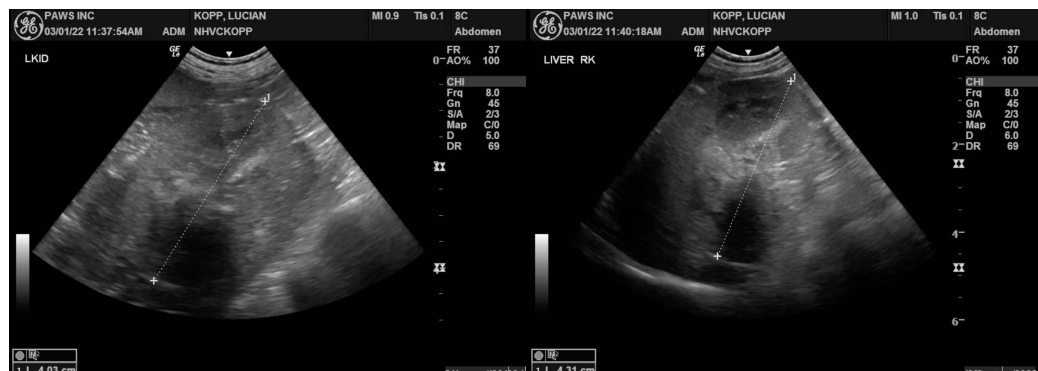
Dr. Baggett

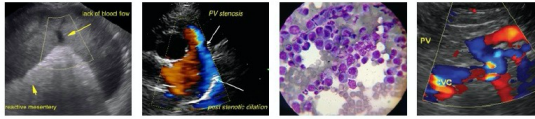
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**SPECIES**

Canine

**BREED**

Terrier X

**SEX**

Neutered Male

**AGE**

10 Years

**WEIGHT**

13 Pounds

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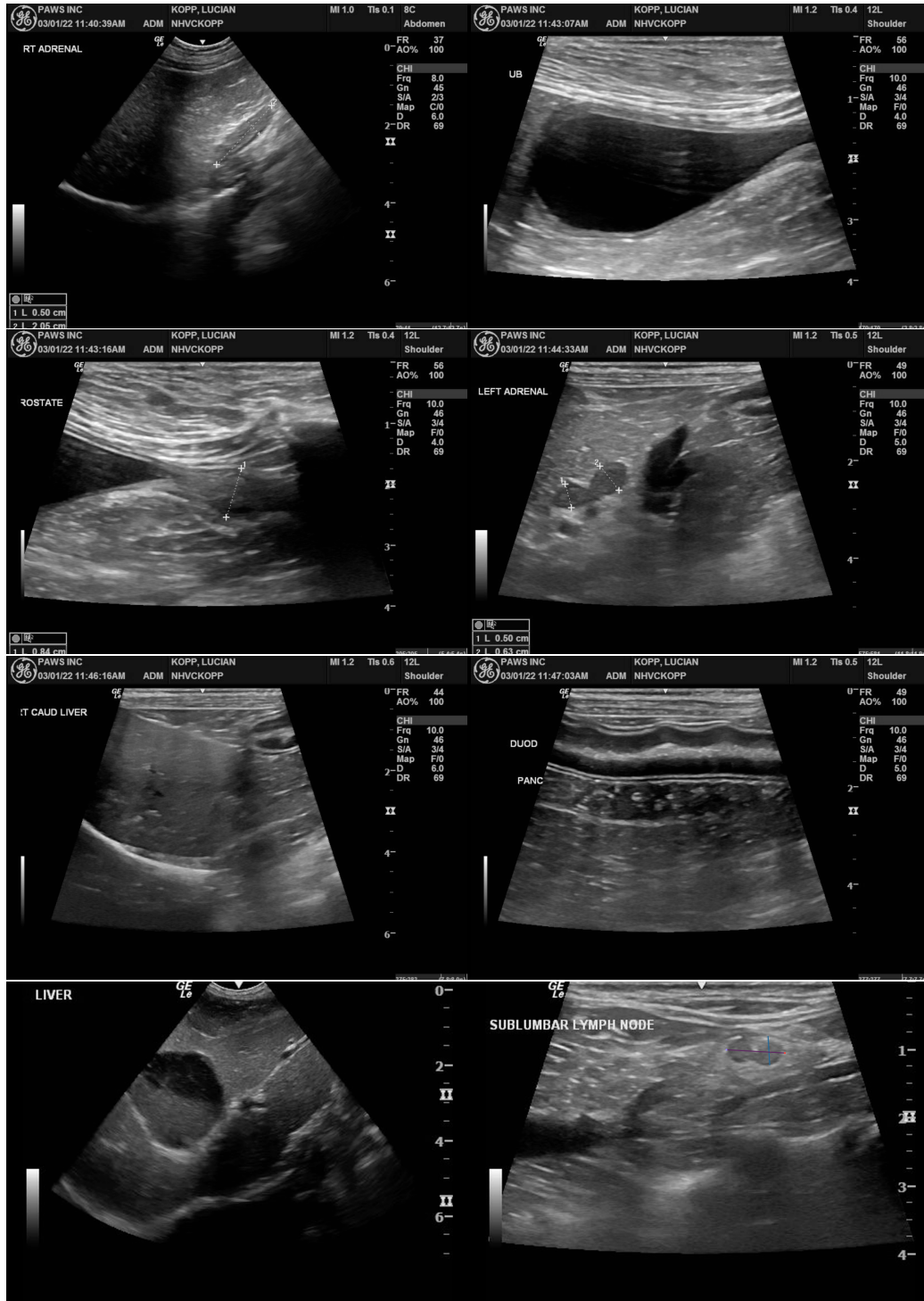
Dr. Baggett

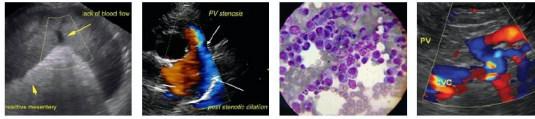
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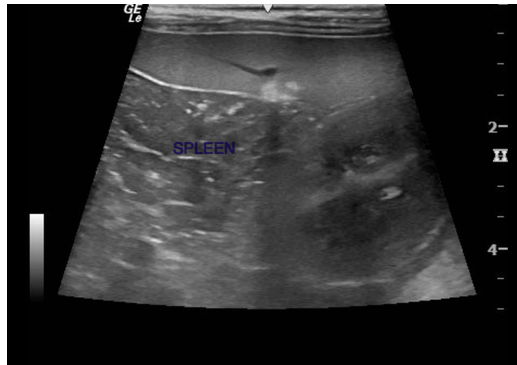
Lucian Kopp

**SPECIES**

Canine

**BREED**

Terrier X



**SEX**

Neutered Male

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.

**AGE**

10 Years

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.

**WEIGHT**

13 Pounds

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