



**PATIENT PRESENTING CLINICAL SIGNS**

Winnie LoBrace

Elevated liver enzymes, PSL and Ca  
Abnormal PE/Chem/CBC/UA Results: AST 86, ALT 692, ALKP 1525, GGT 41, Ca 13.8, PSL 232

**SPECIES**

Canine

**ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN**

**Urinary System**

**BREED**

Mix

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 (7.05 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 hydroureter. Renal vasculature is normal.

**AGE**

10 years

The right kidney has a normal shape and size (7.34 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 hydroureter. Renal vasculature is normal.

**WEIGHT**

74 lbs

**Adrenal Glands**

**INTERPRETED BY**

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

The left adrenal gland is normal/borderline large in size measuring 0.95 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 normal/borderline large in size measuring 1.12 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**

Diane McFadden, RVT

**Spleen**

**HOSPITAL NAME**

Animal Hospital of  
Roxbury

The spleen is subjectively (normal or large) in size The spleen echotexture is heterogenous and mottled, 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.

**INVOICE**

96124

**Liver**

**DATE**

2/17/22

The liver is subjectively large 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. No focal nodules or cystic lesions are observed. The gallbladder lumen is moderately distended. The wall of the gallbladder 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.



**PATIENT** *Gastrointestinal*

Winnie LoBrace

The stomach is moderately dilated with fluid and irregular shadowing material most consistent with normal ingesta and gas. 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 layering is adequate and there is no impression of reduced peristaltic activity. No masses or focal lesions were observed.

**SPECIES**

Canine

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.)

**BREED**

Mix

Visualized peristalsis appears appropriate. There were no focal lesions consistent with obstruction or a mass effect observed.

**SEX**

Spayed Female

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 large and hypoechoic to surrounding mesentery. There is no evidence of nodules or cystic lesions. There is evidence of regional mesenteric inflammation. Consistent with mild pancreatitis.

**WEIGHT**

74 lbs

*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.

**INTERPRETED BY**

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

**ULTRASONOGRAPHIC FINDINGS**

**IMAGING PERFORMED BY**

Diane McFadden, RVT

**PRIMARY FINDINGS:**

**HOSPITAL NAME**

Animal Hospital of  
Roxbury

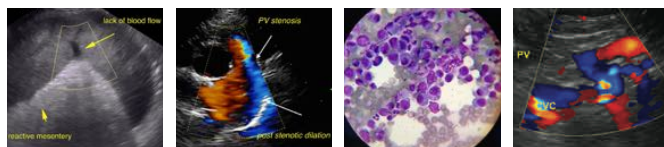
**INVOICE**

96124

**DATE**

2/17/22

- 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.
- Large mottled spleen. The diffuse splenic changes are non-specific and could be consistent with lymphoid hyperplasia, extramedullary hematopoiesis, infiltrative neoplasia, inflammation, other. Cytology or histopathology would be necessary to get a definitive diagnosis.
- Prominent hypoechoic pancreas with surrounding hyperechoic mesentery. The pancreatic changes are most consistent with age-related parenchymal remodeling, potentially secondary to a prior inflammatory episode, early fibrosis or chronic pancreatitis.
- Heterogenous 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.



**PATIENT**

Winnie LoBrace

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

**SPECIES**

Canine

**SECONDARY FINDINGS:**

- Small to moderate volume of fluid/ingesta within the gastric lumen.
- Shadowing material within the gastric lumen.

**BREED**

Mix

**INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS**

**SEX**

Spayed Female

No focal mass effects are visualized in the liver and there is no evidence of a severe lymphadenopathy. The adrenal glands are both on the large side of normal for a dog of this size. Additionally the liver is somewhat heterogenous. This combined with the ALP elevation could be consistent with pituitary dependent Cushing's disease. If signs consistent with Cushing's are present consider adrenal functional testing.

**AGE**

10 years

Additionally there is the possibility of a primary hepatopathy. If Cushing's seems unlikely then:

**WEIGHT**

74 lbs

- Consider close evaluation of history for possible toxic changes examine medications, diet, dietary indiscretion etc...
- Consider PCR on urine/serum for leptospirosis (if not on antibiotics)/serology if recent antibiotic history
- If not already done, consider pre and post prandial bile acids to evaluate liver function
- If the ALP is significantly elevated relative to the ALT and symptoms consistent with Cushing's are present, consider adrenal function testing (ACTH stim)
- Consider Fine needle aspirate if round cell neoplasia is on your differential list (25 g needle, normal coags)
- If no response to medical care (Denamarin, antibiotics,+/- Ursodiol etc...) Consider liver biopsy with samples obtained for histopathology, culture, and copper levels.

**INTERPRETED BY**

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

There is a mild to moderate hypercalcemia present. I recommend confirming this is a true hypercalcemia by running an ionized calcium, PTH and PTHrP level through Michigan State University. Additionally recommend a thorough rectal exam to evaluate the anal glands and an oral exam to look for any evidence of oral neoplasia.

**IMAGING PERFORMED BY**

Diane McFadden, RVT

Consider three view thoracic radiographs to rule out concurrent thoracic disease/involvement.

**HOSPITAL NAME**

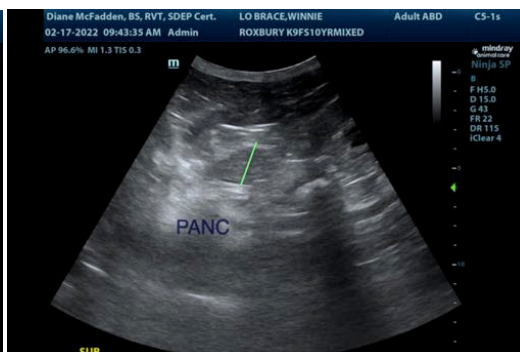
Animal Hospital of  
Roxbury

**INVOICE**

96124

**DATE**

2/17/22





**PATIENT**

Winnie LoBrace

**SPECIES**

Canine

**BREED**

Mix

**SEX**

Spayed Female

**AGE**

10 years

**WEIGHT**

74 lbs

**INTERPRETED BY**

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

**IMAGING  
PERFORMED BY**

Diane McFadden, RVT

**HOSPITAL NAME**

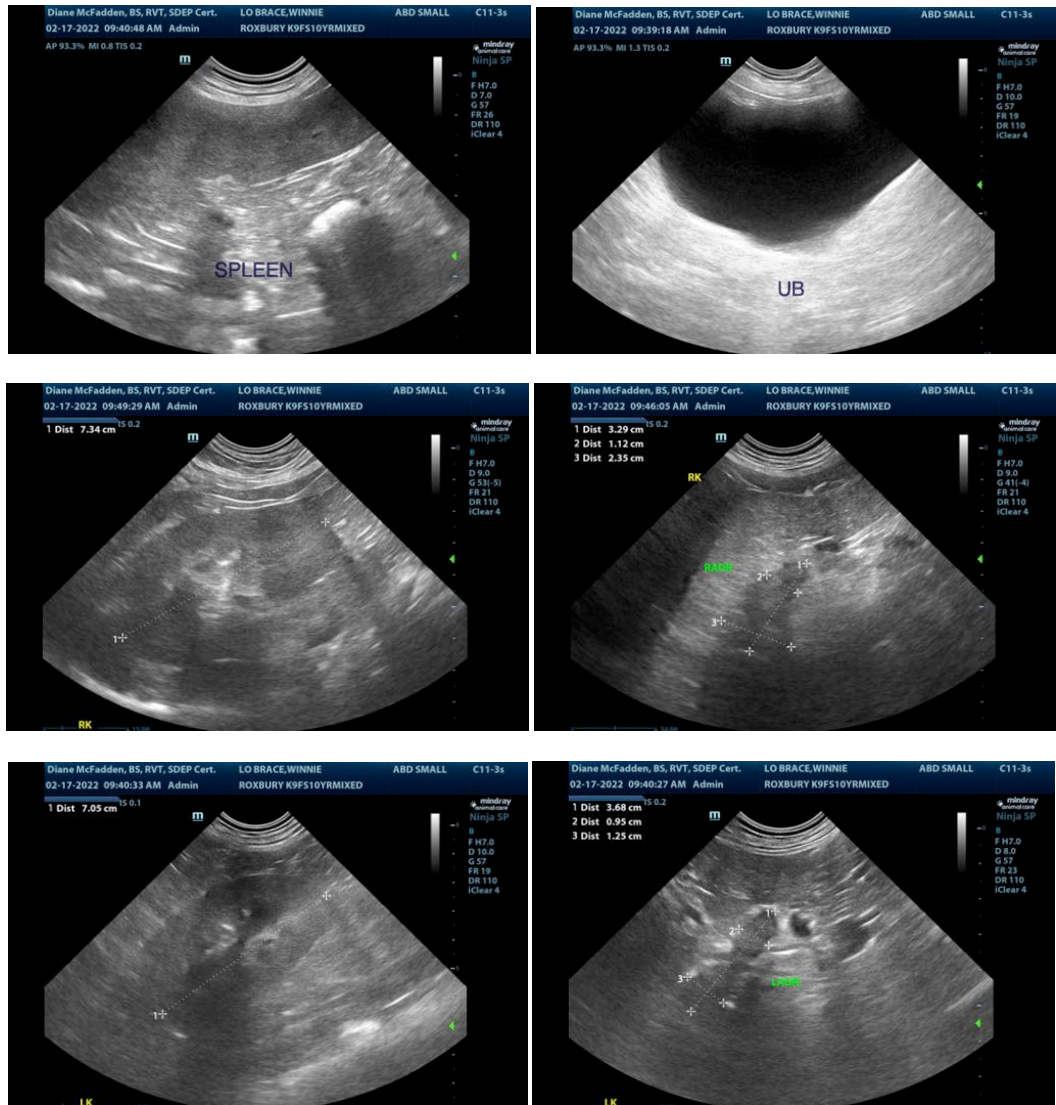
Animal Hospital of  
Roxbury

**INVOICE**

96124

**DATE**

2/17/22



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)

kathleen.sennello@sonopath.com