



<b>PATIENT</b>	<b>PRESENTING CLINICAL SIGNS</b>
Mickey Miller	Patient has small stature in comparison to litter mate (litter mate 10lbs, this patient 5lbs). Patient otherwise unremarkable Current Medications Gabapentin 100 mg, Midazolam 5 mg/ml- 0.09 ml, Butorphanol 10 mg/ml- 0.09 ml given at 10:40 am today
<b>SPECIES</b>	
Canine	Abnormal PE/Chem/CBC/UA Results: ALT elevation 2/25/2022 151 (10-125) 8/17/2022 110 (10-125) 10/19/2022 132 (10-125) Abnormal Post Bile Acid on 10/19/22 48.5 (0-29)
<b>BREED</b>	
Mini Schnauzer	<b>ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN</b>
<b>SEX</b>	<b>Urinary System</b>
MN	The urinary bladder, trigone, cystourethral junction, and visible pelvic urethra to a depth of 2.0 cm exhibited normal thickness and tone. Anechoic urine was present in the lumen with no uroliths, calculi, or sediment. The ureteral papillae were normal. The ureters were not visible which is normal. No evidence of inflammatory or neoplastic changes was noted.
<b>AGE</b>	
2y	The residual prostate was free of pathology.
<b>WEIGHT</b>	
5.4 lbs.	The area of the aortic trifurcation was free of pathology.
<b>INTERPRETED BY</b>	Normal size and margination were present in the kidneys. A normal 1:3 cortex / medulla ratio and normal corticomedullary definition were maintained. The echogenicity of the cortex was similar to or slightly less than normal liver parenchyma while the medulla echogenicity was hypoechoic to the cortex with no evidence of pelvic dilation. No evidence of renal calculi or renomegaly. The left kidney measured 3.0 cm in length. The right kidney measured 3.5 cm in length.
R. McKenzie Daniel, DVM, DABVP (Canine and Feline)	
<b>IMAGING PERFORMED BY</b>	<b>Adrenal Glands</b>
Jenna Walsh, CVT	The left adrenal gland was uniform in size and contour with a uniformly hypoechoic parenchyma. The left adrenal gland measured 0.9 cm length x 0.32 cm width at the caudal pole. The right adrenal gland was uniform in size and contour with a uniformly hypoechoic parenchyma. The right adrenal gland measured 1.2 cm length x 0.33 cm width at the caudal pole.
<b>HOSPITAL NAME</b>	<b>Spleen</b>
Banfield North Eugene	The spleen exhibited a finely textured and homogenous parenchyma which was hyperechoic to the liver and renal cortical parenchyma. The capsule was smooth and regular without apparent expansion. The splenic vasculature at the hilus was normal in volume with no evidence of congestion or thrombosis. Acute to chronic inflammatory, neoplastic, or benign parenchyma changes were not noted.
<b>REFERRING VET</b>	
Dr. Harvey	
<b>INVOICE</b>	<b>Liver/ Gallbladder</b>
15471	The liver exhibited subjective mild subnormal size with normal structure and contour. The liver parenchyma was uniform and hypoechoic to the spleen with a mild coarse echotexture. The hepatic and portal vasculature were normal in appearance without signs of congestion. The visualized portal
<b>DATE</b>	
11/15/22	



**PATIENT**

Mickey Miller

**SPECIES**

Canine

**BREED**

Mini Schnauzer

**SEX**

MN

**AGE**

2y

**WEIGHT**

5.4 lbs.

**INTERPRETED BY**

R. McKenzie Daniel,  
DVM, DABVP  
(Canine and Feline)

**IMAGING PERFORMED BY**

Jenna Walsh, CVT

**HOSPITAL NAME**

Banfield North  
Eugene

**REFERRING VET**

Dr. Harvey

**INVOICE**

15471

**DATE**

11/15/22

vein appeared to exhibit similar volume compared to the adjacent caudal vena cava. The gallbladder was non-distended in size containing primarily anechoic content with mild to moderate, non-dependent, mildly echogenic luminal gallbladder debris. No evidence of gallbladder or peripheral gallbladder inflammatory criteria was noted. The cystic and common bile ducts were normal.

**Gastrointestinal**

The stomach presented intact wall layering with a normal wall layer ratio. The lumen of the stomach contained moderate ingesta exhibiting subtle progressive distal acoustic shadowing, likely consistent with post prandial presentation.

The small intestine presented intact wall layering with 1:3 muscularis/mucosa ratio. Minor segmental nonshadowing ingesta / chyme was noted.

Normal visible colon wall layers were present with apparent formed feces in lumen.

**Pancreas**

The parenchyma of the left limb, body, and right limb of the pancreas presented isoechoic to the adjacent omental fat. A normal curvilinear capsule contour of the pancreas was present. The visible pancreatic duct was normal. No signs of active inflammation or neoplastic disease were evident.

**Free Abdomen**

No overt lymphadenopathy or peritoneal effusion was present.

**ULTRASONOGRAPHIC FINDINGS**

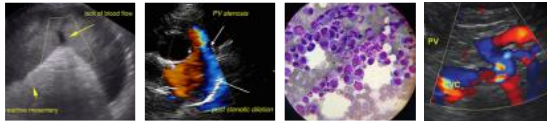
- Low grade hepatopathy exhibiting subjective mild subnormal liver size
- Moderate gallbladder debris (non-mucocele)

**INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS**

No overt evidence of macroscopic intrahepatic or extrahepatic shunting. Potential for low-grade inflammatory hepatopathy or possible portal hypoplasia / microvascular dysplasia is suspected. However, a small macroscopic shunt cannot be definitively excluded yet is considered less likely given post prandial bile acid level well below 80-100. FNA of the liver, assuming normal clotting status could be considered to assess for potential inflammatory cell type. Core surgical hepatic biopsy is likely necessary for further definition as to whether portal hypoplasia / microvascular dysplasia is present. If clinical signs suggestive of non-visualized macroscopic shunt, Gold Standard CT with contrast for definitive diagnosis could be considered.

Some or all of the following protocol may be considered empirically based on patient clinical signs.

**Royal Canin Hepatic Support diet or Hills L/D, Metronidazole** (7.5 mg/kg PO bid) over the next 14 days, **Lactulose** (Oral: 3.1-3.7 g/5 ml lactulose in a syrup base) long term to target 2-3 soft stools/day, with a **high-quality protein supplement** of minor amount of **yogurt** or **cheddar cheese**. Monitor bile acids, with attention paid to dropping albumin, BUN or cholesterol. SAME and nutraceuticals as needed. **Ursodiol** (10-15 mg/kg p.o. q24h) can be considered as hepatoprotectant and to enhance



**PATIENT**

Mickey Miller

**SPECIES**

Canine

**BREED**

Mini Schnauzer

**SEX**

MN

**AGE**

2y

**WEIGHT**

5.4 lbs.

**INTERPRETED BY**

R. McKenzie Daniel,  
DVM, DABVP  
(Canine and Feline)

**IMAGING PERFORMED BY**

Jenna Walsh, CVT

**HOSPITAL NAME**

Banfield North  
Eugene

**REFERRING VET**

Dr. Harvey

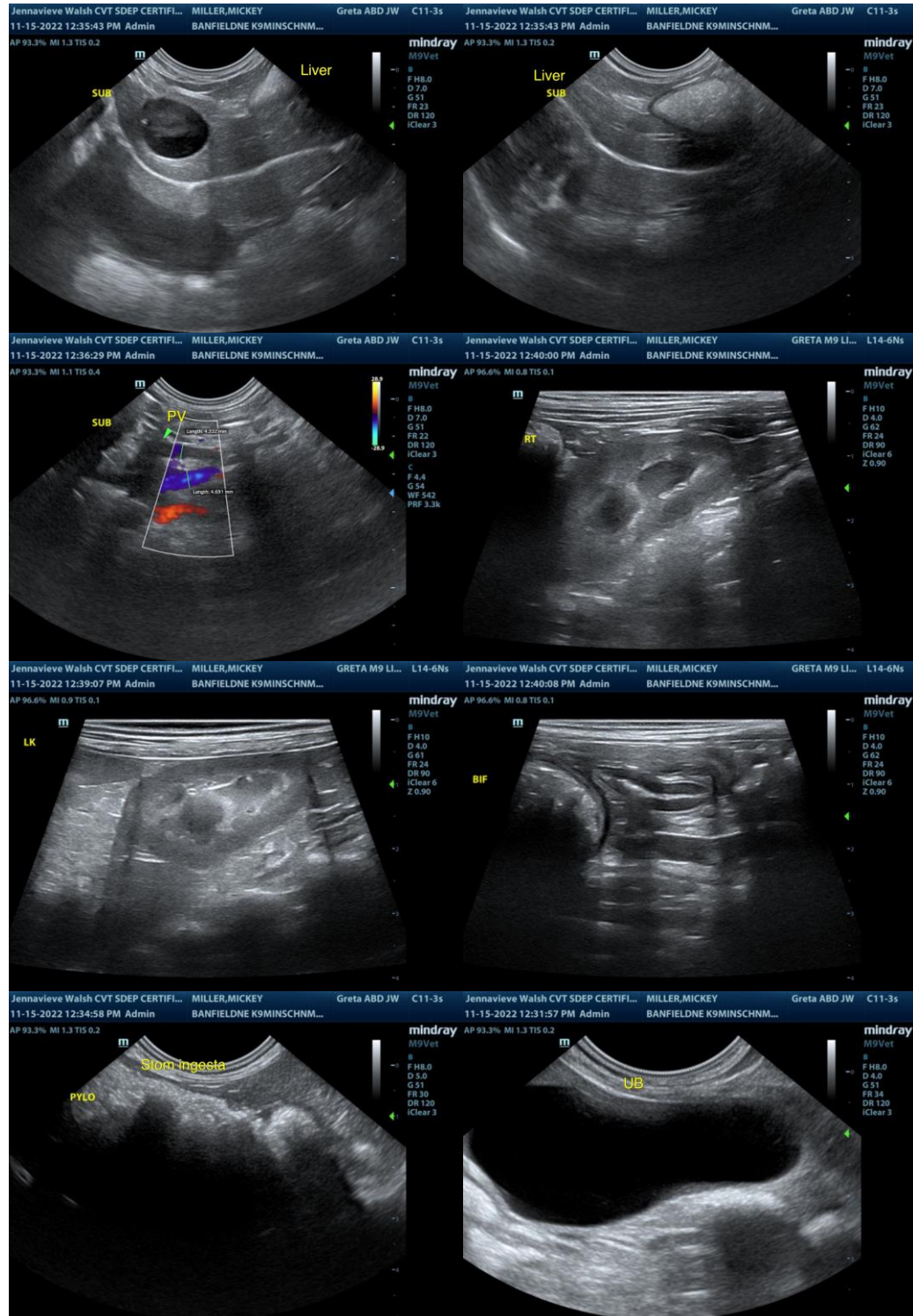
**INVOICE**

15471

**DATE**

11/15/22

bile flow. **Zinc** serum level keep between 200—500 ug/dl. If deficient then Tx zinc acetate 1-3 mg/kg/day. Gastrointestinal protectants are recommended if the patient is anorexic.





**PATIENT**

Mickey Miller

**SPECIES**

Canine

**BREED**

Mini Schnauzer

**SEX**

MN

**AGE**

2y

**WEIGHT**

5.4 lbs.

**INTERPRETED BY**

R. McKenzie Daniel,  
DVM, DABVP  
(Canine and Feline)

**IMAGING PERFORMED BY**

Jenna Walsh, CVT

**HOSPITAL NAME**

Banfield North  
Eugene

**REFERRING VET**

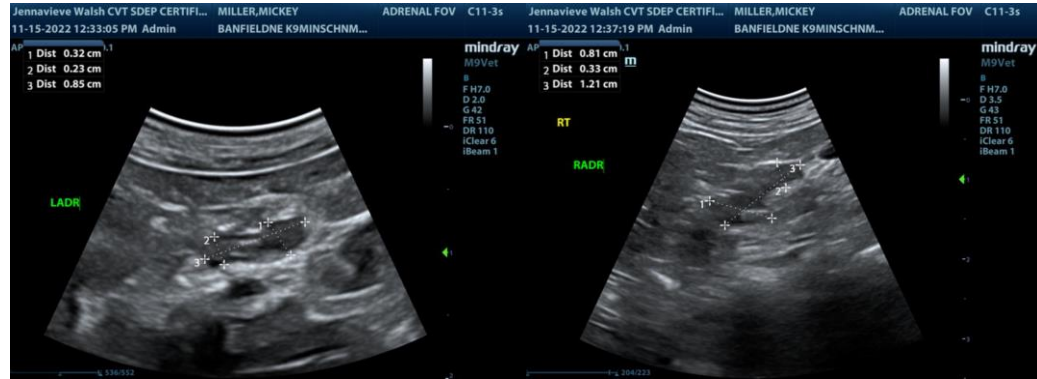
Dr. Harvey

**INVOICE**

15471

**DATE**

11/15/22



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.

**R. McKenzie Daniel, DVM, DABVP (Canine / Feline Practice)**  
info@SonoPath.com