



**PATIENT PRESENTING CLINICAL SIGNS**

Phoebe Pipe History: no physical symptoms, concern for possible shunt currently on hepatosupport  
Elevated bile acids (repeatable)

**SPECIES**

Canine

**ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN**

**Urinary System**

**BREED**

Maltese

The **urinary bladder**, trigone, and pelvic urethra presented normal thicknesses and normal tone. The ureters were not visible which is normal. No uroliths or sediment were visualized and anechoic urine was present. No evidence of inflammatory or neoplastic changes was noted. Ureteral papillae were normal.

**SEX**

Intact female

The **kidneys** revealed normal size and structure, corticomedullary definition and ratio for this age. The cortices presented largely uniform texture with normal echogenic relationship to liver and spleen. Medullary structure differed distinctly from the cortex and no evidence of pelvic dilation was present. The capsules were acceptably uniform without significant irregularities. The left kidney measured 2.79 cm. The right kidney measured 3.25 cm.

**AGE**

5 years

**WEIGHT**

2.2 kg

**Adrenal Glands**

Both **adrenal glands** were visualized and recognized as having normal shape, size, position and echogenicity for this breed. The phrenic vasculature, glandular echogenicity and detail were unremarkable. Capsule, cortex, and medullary definition were normal for this age patient. The right adrenal gland measured 1.3 x 0.6 cm at the caudal pole and 0.76 cm at the cranial pole. The left adrenal gland measured 1.27 x 0.4 cm at the caudal pole and 0.36 cm at the cranial pole.

**INTERPRETED BY**

Eric Lindquist, DMV  
DABVP, Cert. IVUSS

**Spleen**

The **spleen** presented a smooth homogeneous parenchyma hyperechoic to liver and renal cortical parenchyma. The capsule was smooth without noticeable expansion or deviation from within the spleen or adjacent pathology. The splenic vasculature demonstrated normal volume without signs of congestion or thrombosis. No sonographic evidence of acute or chronic inflammatory, neoplastic, or infarctual changes was noted.

**IMAGING PERFORMED BY**

Kelly Reschny

**HOSPITAL NAME**

Glanbrook VS

**REFERRING VET**

Dr. McGowan

**Liver**

The **liver** was slightly subnormal in size with mildly increased portal markings. Intrahepatic vascular volume appeared normal. The portal vein to vena cava ratio was 1:1 and both measured approximately 0.4 cm. The portal vein was followed through its branching. The gallbladder and common bile duct were unremarkable.

**INVOICE**

91872

**DATE**

9/21/21



**PATIENT**

**Gastrointestinal**

Phoebe Pipe

Examination of the **gastrointestinal tract** revealed a stomach and intestine free of stasis, of normal wall thickness, acceptable curvilinear mural detail, and peristaltic activity. Small and large intestine demonstrated normal luminal chyme and stool consistency respectively. No obstructive or overt infiltrative disease was noted. No associated abnormal lymphatic activity was noted.

**SPECIES**

Canine

**BREED**

Maltese

**Pancreas**

The base and limbs of the **pancreas** were observed to be largely isoechoic to surrounding omental fat. Pancreatic duct and capsular contour were acceptably normal and parenchyma respected normal curvilinear patterns. No overt evidence of active inflammatory or neoplastic disease was noted.

**SEX**

Intact female

**ULTRASONOGRAPHIC FINDINGS**

Mild microhepatica, mild remodeling.

**AGE**

5 years

**INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS**

**WEIGHT**

2.2 kg

There was no evidence of intrahepatic or extrahepatic shunting. Given the elevated the bile acids, portal hypoplasia with concurrent remodeling is likely; however, surgical biopsies would be necessary for further definition.

**Hepatic Support for Bile Acid Elevation +/- Hepatic Encephalopathy**

**INTERPRETED BY**

Eric Lindquist, DMV  
DABVP, Cert. IVUSS

**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 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.

**IMAGING PERFORMED BY**

Kelly Reschny

**HOSPITAL NAME**

Glanbrook VS

**REFERRING VET**

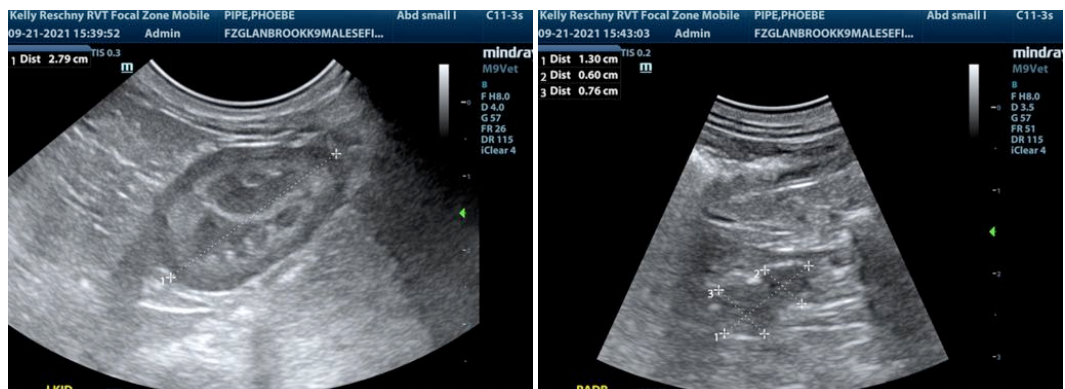
Dr. McGowan

**INVOICE**

91872

**DATE**

9/21/21





**PATIENT**

Phoebe Pipe

**SPECIES**

Canine

**BREED**

Maltese

**SEX**

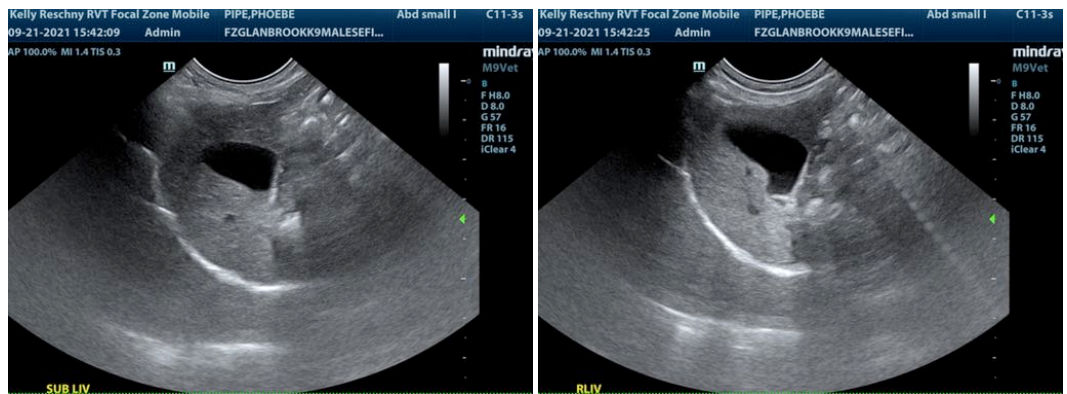
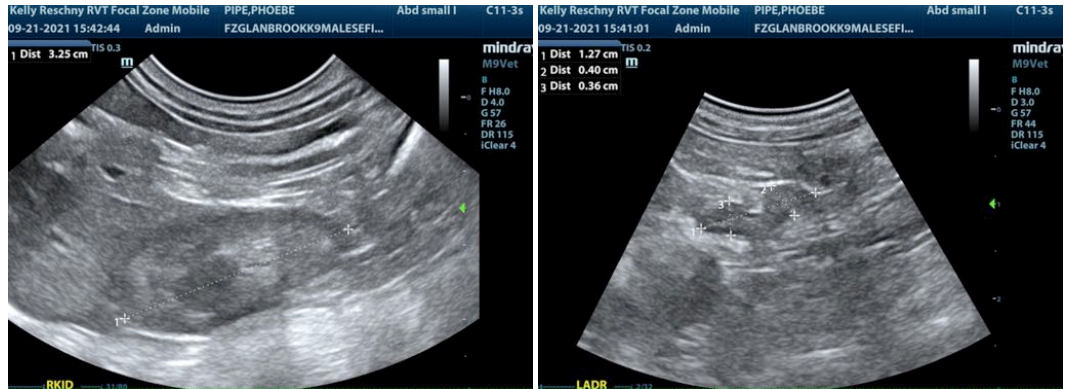
Intact female

**AGE**

5 years

**WEIGHT**

2.2 kg



**INTERPRETED BY**

Eric Lindquist, DMV  
DABVP, Cert. IVUSS

**IMAGING  
PERFORMED BY**

Kelly Reschny

**HOSPITAL NAME**

Glanbrook VS

**REFERRING VET**

Dr. McGowan

**INVOICE**

91872

**DATE**

9/21/21

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.

**Eric Lindquist**, DMV, DABVP, Cert. IVUSS, CEO of SonoPath.com  
Eric.Lindquist@SonoPath.com