



**PATIENT**

Winnie DePorre

**SPECIES**

Canine

**BREED**

Havanese

**SEX**

Intact female

**AGE**

8 months

**WEIGHT**

9 lbs

**INTERPRETED BY**

Eric Lindquist, DMV  
DABVP, Cert. IVUSS

**IMAGING PERFORMED BY**

Carri Underwood

**HOSPITAL NAME**

SVS Imaging MI-2

**REFERRING VET**

DePorre VH

**INVOICE**

45051

**DATE**

6/29/23

**PRESENTING CLINICAL SIGNS**

History: Labwork day of spay procedure  
Abnormal PE/Chem/CBC/UA Results: Mild elevation of ALT (196) and ALK (230). Bile acids test performed. Pre sample 26.7, post sample 27.7 Elevated ALT/ALP r/o congenital (MVD vs Hepatic Shunt) vs inflammatory vs infectious vs other

**ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN**

**Urinary System**

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.

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. Slight pinpoint mineralization was noted. The right kidney measured 4.06 cm. The left kidney measured 4.11 cm.

**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 0.35 cm at the cranial pole and 0.34 cm at the caudal pole.

**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.

**Liver**

The **liver** revealed uniform parenchyma, yet was slightly subnormal in size. Intrahepatic and extrahepatic vascularity was normal. There was no evidence of intrahepatic or extrahepatic portosystemic shunts. The portal vein measured 0.6 cm prior to the branching. The gallbladder presented acceptably thin walls with primarily anechoic content. The cystic and common bile ducts were normal.



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**Gastrointestinal**

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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. The mesenteric lymph nodes were reactive and juvenile measuring 1.37 x 0.67 cm.

**SPECIES**

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**Pancreas**

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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, structurally normal vascularity.

**AGE**

8 months

**INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS**

**WEIGHT**

9 lbs

There was no evidence of reproductive pathology noted. Given the minor microhepatica and only mildly elevated bile acids portal hypoplasia/microvascular dysplasia or spurious elevation is likely. Medical management is warranted. Liver biopsy can be performed at the time of ovariohysterectomy for long term management. However, no macroscopic shunting is present.

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

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**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.

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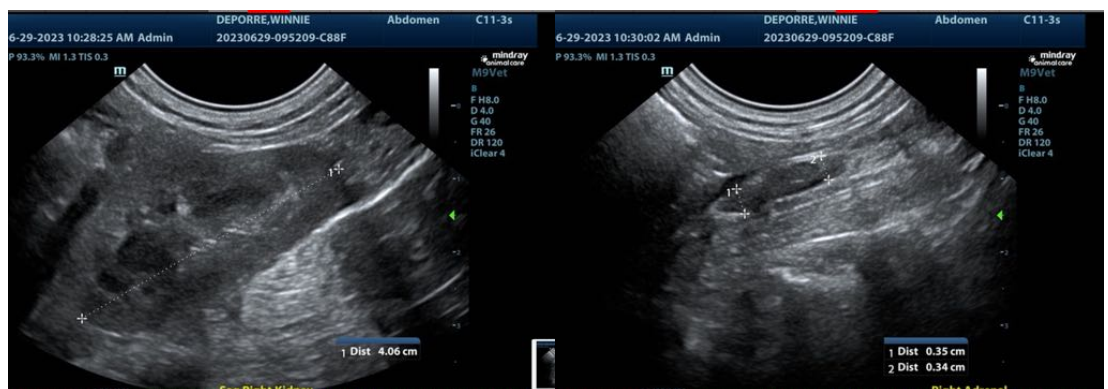
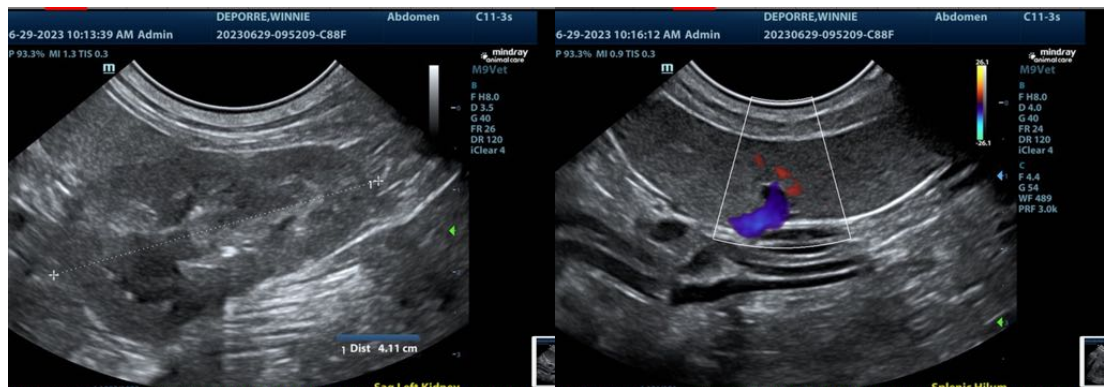
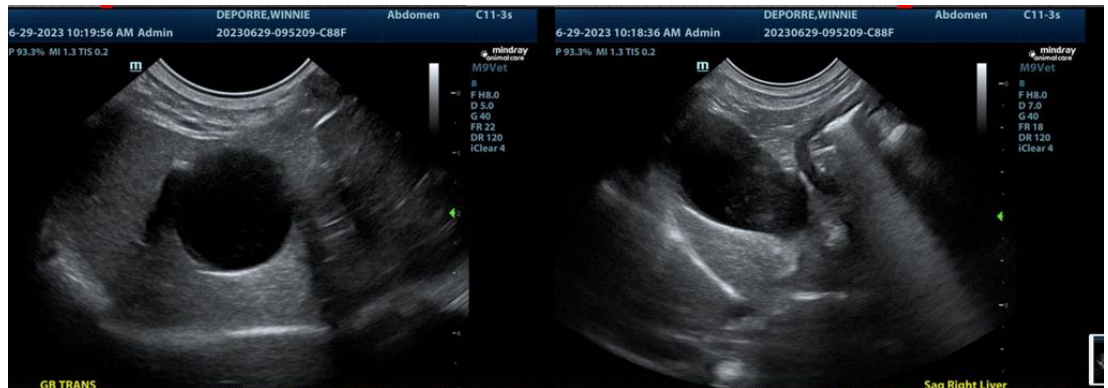
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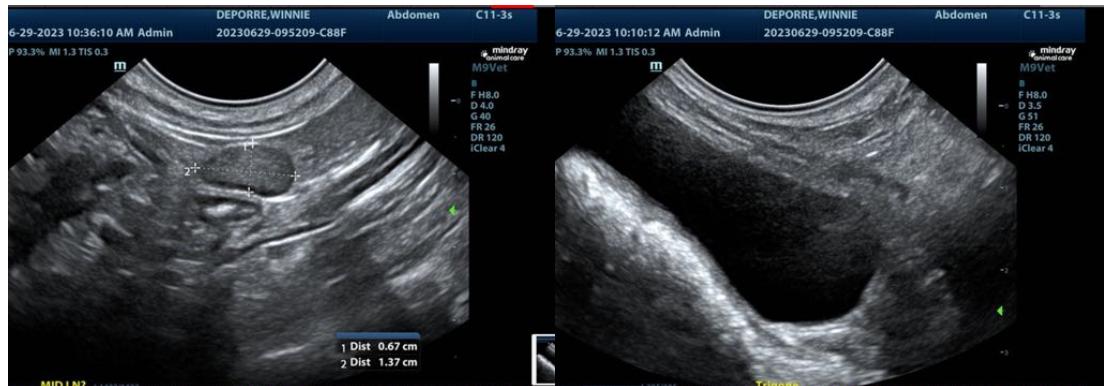
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The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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.

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