



## PATIENT

Bentley Logue

## SPECIES

Canine

## BREED

Havanese

## SEX

Neutered Male

## AGE

7 Months

## WEIGHT

8.1 lbs

## INTERPRETED BY

Eric Lindquist, DMV,  
DABVP (CFM), Cert.  
IVUSS

## IMAGING PERFORMED BY

Brandon

## HOSPITAL NAME

Dillsburg Veterinary  
Center

## REFERRING VET

Dr. Amber

## INVOICE

75320

## DATE

5/20/26

## PRESENTING CLINICAL SIGNS

Bentley's pre-op labwork for his neuter showed elevated ALT and ALKP. Bile acids were mildly elevated. >100 would support a shunt. His were 36 post-prandial and high normal pre-sample. This is most consistent (with normal BUN glucose and Alb) of Microvascular dysplasia/Portal Vein hypoplasia. owner elected abdominal ultrasound during neuter surgery to assess for shunt.

Abnormal PE/Chem/CBC/UA Results: BILE ACIDS Pre: 12.5, Post: 36.2. ALT 217, ALKP 188.

## 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 were noted. Ureteral papillae were normal.

The prostate was uniform at 1.24 cm.

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. Right kidney measured 3.6 cm. Left kidney measured 3.9 cm.

### Adrenal Glands

The **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. Left measured 0.40 cm. Right measured 1.0 cm x 0.40 cm.

### Spleen

The **spleen** was folded upon itself cranially. It 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 were noted.

### Liver

The **liver** was mildly subnormal in size. Normal intrahepatic vascular volume. The gallbladder was unremarkable. No evidence of intrahepatic or extrahepatic shunting. Portal vein was normal in size with normal branching, measuring 0.49 cm. Vena cava measured 0.43 cm at the level of the portal hilus.

### Gastrointestinal

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.



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**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.

**ULTRASONOGRAPHIC FINDINGS**

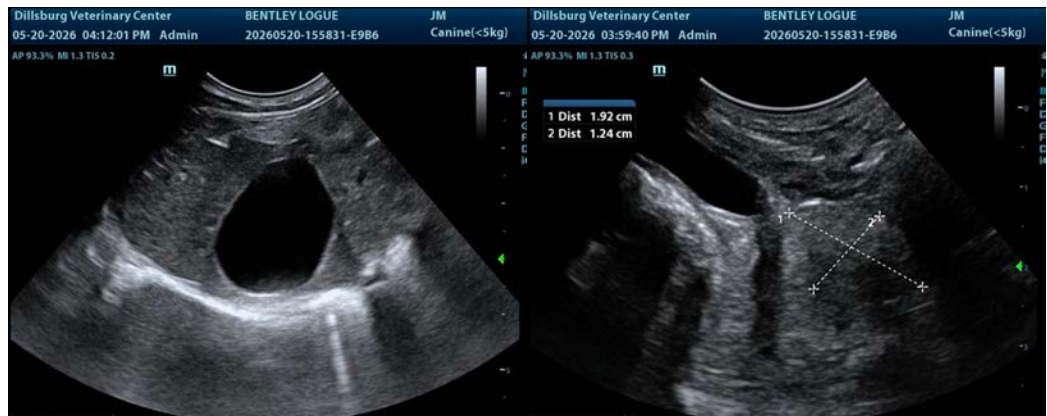
- Microhepatica, low-grade inflammatory hepatopathy.
- Folded spleen.

**INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS**

No evidence of macroscopic shunting. Portal hypoplasia or spurious elevation of bile acids are likely in this patient. Liver biopsy would be necessary for further definition, yet no evidence of macroscopic shunting. Normal vein to vena cava ratio and normal vascular volume to the liver. Surgical biopsies or ultrasound guided laparoscopic biopsies indicated.

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

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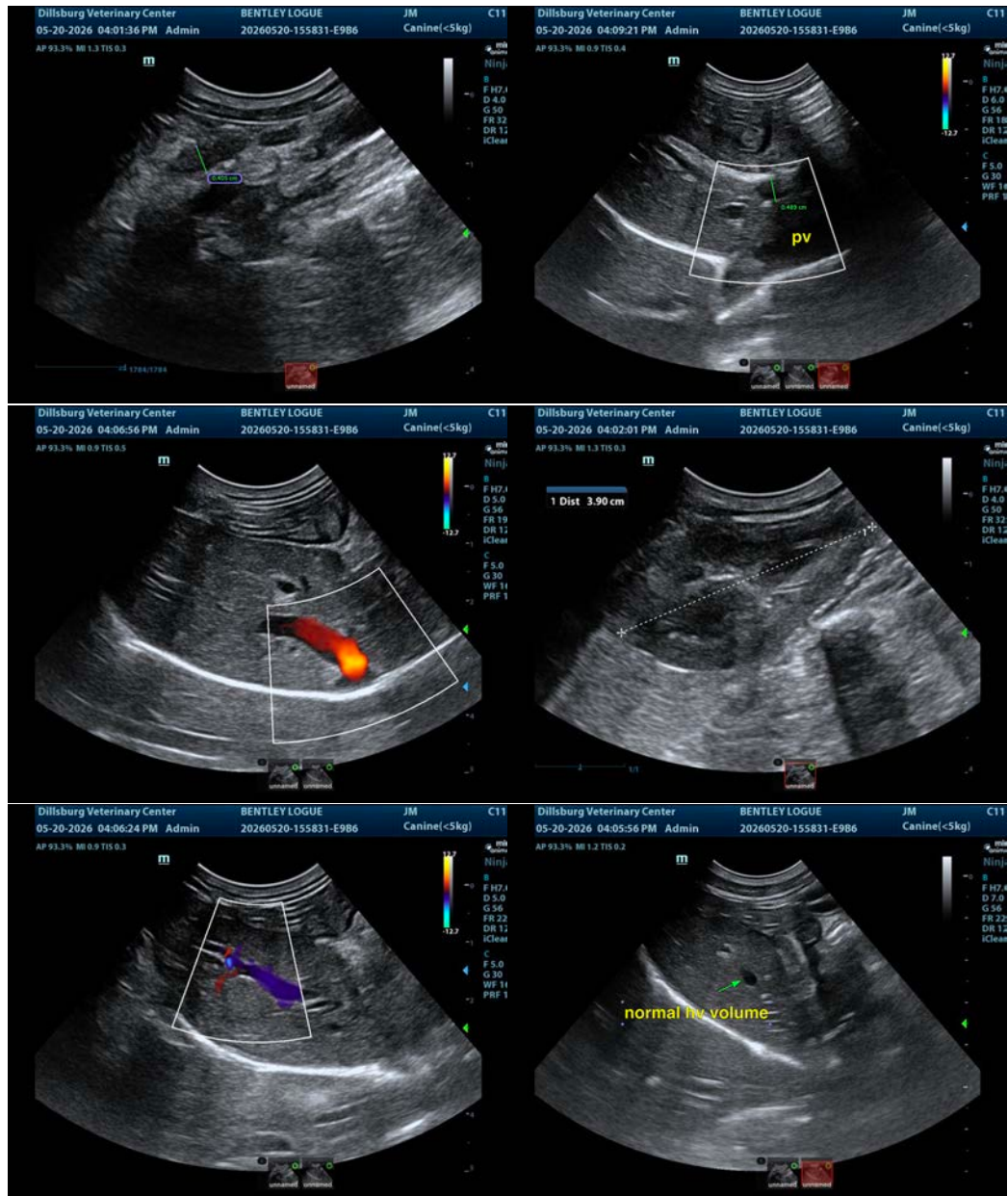
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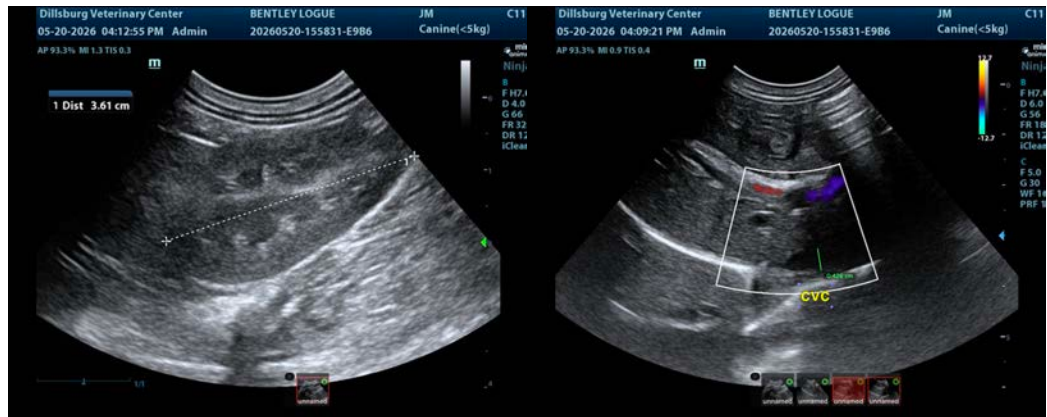
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The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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(CFM), Cert. IVUSS,  
CEO, Owner, Founder -- SonoPath.com  
[info@SonoPath.com](mailto:info@SonoPath.com)