

**PATIENT PRESENTING CLINICAL SIGNS**

Daisy Taylor Lethargic, anorexia for a few days. Losing weight. Ribs, spine, pelvis all prominent. Has DMVD Stage B2 and DTVD. Is on pimobendan 1.25 mg x 1/2 chew BID.

**SPECIES**

Canine

**BREED**

Chihuahua

**SEX**

Spayed Female

**AGE**

12 years

**WEIGHT**

1.96

Abnormal PE/Chem/CBC/UA Results: CBC WNL, except: MCV 59.2 (61.6 - 73.5) LOW Retic 8.3 (N 10 - 110) LOW Neu 13.33 (N 2.95 - 11.64) HIGH Eos 0.05 (N 0.06 - 1.23) LOW nRBC suspected Plt 626 (N 148 - 484) HIGH PCT 0.72 (N 0.14 - 0.46) HIGH Chemistry WNL, except: SDMA 16 (N 0 - 14) HIGH Ca 1.73 (N 1.98 - 3) LOW TP 34 (N 52 - 82) LOW ALB 12 (N 22 - 39) LOW Glob 22 (N 25 - 45) LOW GGT 13 (N 0 - 11) HIGH Amyl 338 (N 500 - 1500) LOW TT4 7 (N 13 - 51) LOW Snap cPL  
Normal Xrays: 1. Suspect enteritis due to nonspecific etiologies. Systemic disease such as pancreatitis or inflammatory bowel disease/lymphangiectasia can cause bowel atony resulting in a similar radiographic change. 2. Microhepatia likely due to age-related cirrhosis/fibrosis. This could be the cause of the severe hypoproteinemias. 3. Mild cardiomegaly likely due to valvular degenerative disease. There is no evidence of heart failure. 4. Hypovolemia. 5. Severe tracheal and mainstem bronchial collapse.

**ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN**

**Urinary System**

The urinary bladder is moderately distended with anechoic contents. No masses, inflammatory changes, echogenic sediment or cystoliths are observed. The urinary bladder, trigone and visible pelvic urethra are normal in thickness with a smooth mucosal surface.

**INTERPRETED BY**

Beth Johnson, DVM  
DACVIM

The right kidney is normal in size (2.85 cm), shape and echogenicity. It has smooth peripheral margination. There is a normal 1:3 cortex to medulla ratio with appropriate corticomedullary distinction. There is no evidence of pyelectasia, mineral or infarcts observed.

The left kidney is normal in size (2.51 cm), shape and echogenicity. It has smooth peripheral margination. There is a normal 1:3 cortex to medulla ratio with appropriate corticomedullary distinction. There is no evidence of pyelectasia, mineral or infarcts observed.

**IMAGING PERFORMED BY**

Dr. Brian J Barnes

**Adrenal Glands**

The right adrenal gland is normal in size (cranial 0.35 cm, caudal 0.24 cm), shape and contour. Corticomedullary structure is unremarkable. Visible surrounding vasculature appears normal.

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The left adrenal gland is normal in size (cranial 0.32 cm, caudal 0.49 cm), shape and contour. Corticomedullary structure is unremarkable. Visible surrounding vasculature appears normal.

**REFERRING VET**

Dr. Brian J Barnes

**Spleen**

The spleen is subjectively normal in size with a normal smooth capsular contour. Parenchyma is appropriately finely textured and homogenous with normal echogenicity relative to surrounding tissue (hyperechoic to liver). No focal nodules or masses are observed. Splenic vasculature appears normal.

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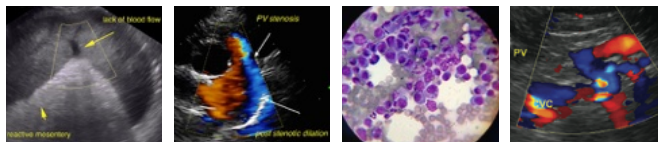
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**Liver**

The liver is subjectively small in size with normal smooth curvilinear peripheral contour. Parenchyma is appropriately hypoechoic to the spleen in echogenicity and appropriately mildly coarse and homogenous in echotexture. No focal lesions are observed. Visible vasculature and biliary tree appear normal without distension or congestion.

The gallbladder is non-distended in size. The wall is smooth without visible thickening. Luminal contents are primarily anechoic. There is no evidence of cystic or common bile duct dilation.

**Gastrointestinal**



**PATIENT**

Daisy Taylor

The stomach wall is normal in thickness (canine < 0.5 cm and feline < 0.4 cm) and layering. The lumen of the stomach is empty with no evidence of obstruction or foreign material. Pyloric outflow tract appears patent.

**SPECIES**

Canine

The visible small intestines are normal in wall thickness and layering (canine duodenum < 0.5 cm and feline duodenum < 0.4 cm; other < 0.3 cm). Small intestinal motility appears adequate (1-3 contractions per min). The lumen of the small intestine is empty with no evidence of obstruction or foreign material.

**BREED**

Chihuahua

The visible colon is normal in wall thickness (< 0.2 cm) and layering. Contents are consistent with normal formed feces and gas.

**SEX**

Spayed Female

**Pancreas**

The pancreatic parenchyma is appropriately isoechoic to surrounding tissue. Visible capsule is smooth and normal in contour. There is no visible pancreatic duct dilation. There is no evidence of active peripancreatic inflammation.

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**Free Abdomen**

There is no evidence of free peritoneal effusion noted in these images.

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There is no apparent lymphadenopathy noted in these images.

**ULTRASONOGRAPHIC FINDINGS**

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- Subjective micro hepatica. Rule out chronic end stage liver disease vs. vascular anomaly vs. normal patient variant.

**INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS**

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Next diagnostic considerations to work up this patient hyperalbuminemia, given the concurrent micro hepatica include bile acids, if the total bilirubin is normal. To rule out concurrent proteinuria as a contributing factor urinalysis and, if indicated based on urinalysis results, urine culture is recommended. If protein is present in an otherwise quiet sediment, protein quantification with a urine protein to creatinine ration is recommended. A baseline cortisol is recommended. If baseline cortisol is less than 2, a full ACTH stimulation test is recommended to rule out hypoadrenocorticism.

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Pending results of above further investigation of gastrointestinal contribution could be considered beginning with a gastrointestinal malabsorption panel (including cobalamin, folate, TLI and PLI) to Texas A&M GI Laboratory is recommended for further evaluation of GI and pancreatic function.

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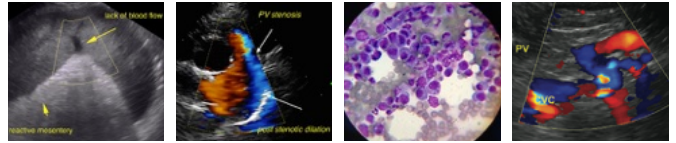
In the meantime, empirical deworming with a 5-day course of Panacur is recommended as is supportive/symptomatic medical management including an appetite stimulant or other nutritional support while awaiting diagnostic results.

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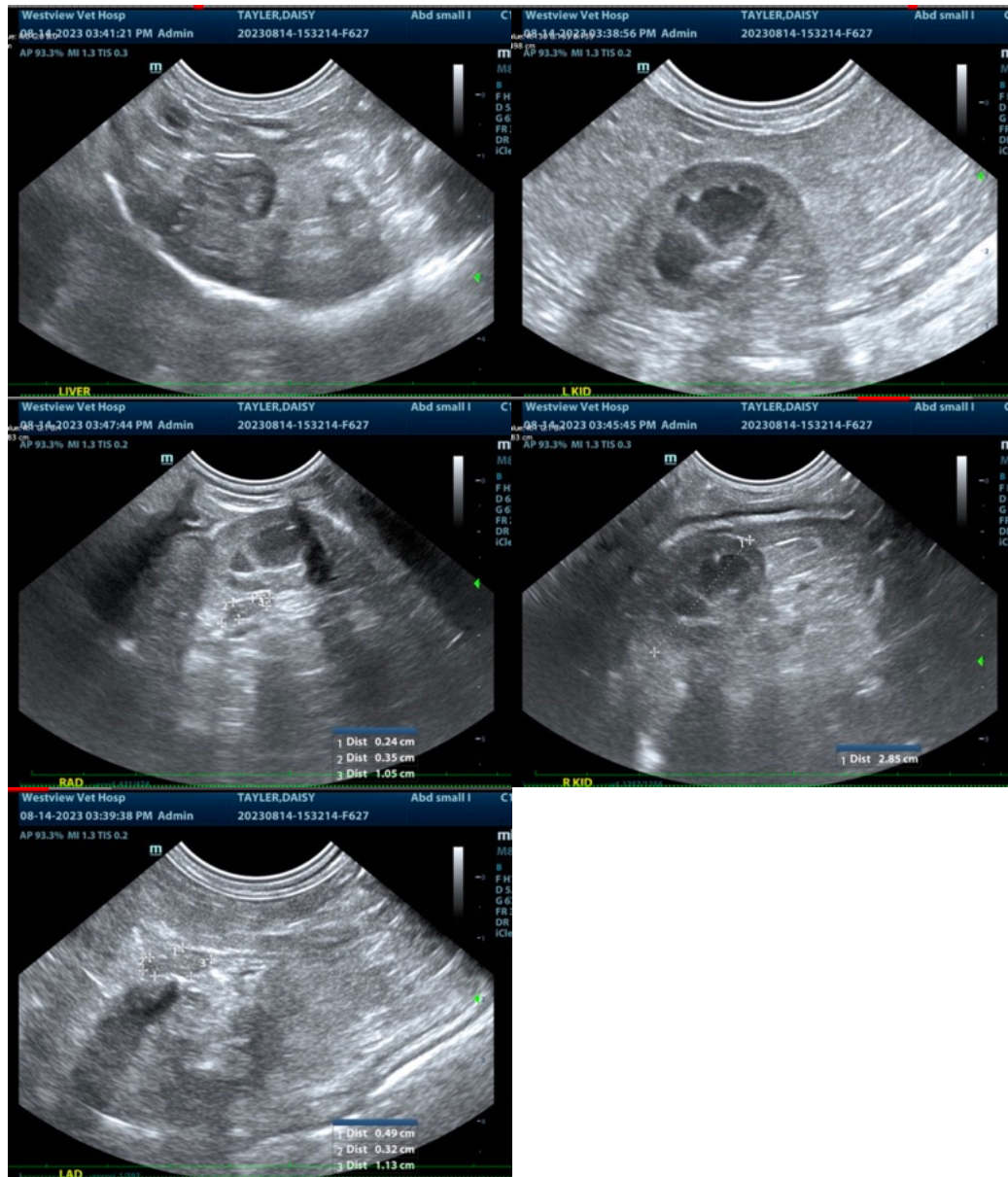
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The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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.

Beth Johnson, DVM, DACVIM  
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