

**PATIENT**

Abby Gordiouk

**SPECIES**

Canine

**BREED**

Yorkshire Terrier

**SEX**

Spayed female

**AGE**

2 years

**WEIGHT**

3.1 kg

**INTERPRETED BY**

Eric Lindquist, DMV  
DABVP, Cert. IVUSS

**IMAGING PERFORMED BY**

Crystal Hill, RVT

**HOSPITAL NAME**

Chippawa AH

**REFERRING VET**

Dr. Dowell

**INVOICE**

43259

**DATE**

3/10/23

**PRESENTING CLINICAL SIGNS**

History: At spay surgery pre anesthetic bloodwork in July 2021 noted M1 elevation in Urea, ALT elevated 156(10-125). Proceeded with spay and baby teeth extraction at that time. Recheck bloodwork 1/3/22 Urea further elevated at 14.8(2.5-9.6) and ALT higher at 285. Started Denosyl and Hepatosyl snap tabs. 6/17/22 Alanine transaminase high 147(18-121) Recheck bloodwork 9/7/22 Urea 11.2, Bile acids high, CBC normal. Concerns for microvascular dysplasia. Started Ursodiol. Bloodwork 3/3/23 Bile acids post high, Bile acids pre high, Urea high, CBC normal and 4dx negative. Recommend ultrasound.

**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. The right kidney measured 3.28 cm. The left kidney measured 3.03 cm.

**Adrenal Glands**

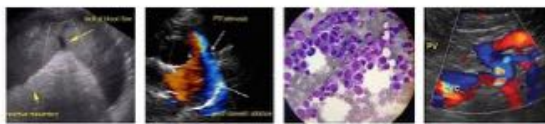
Both **adrenal glands** were visualized and recognized as having normal shape, size, position and echogenicity for this breed. The phrenic vasculature, glandular echogenicity and detail were unremarkable. Capsule, cortex, and medullary definition were normal for this age patient. The left adrenal gland measured 1.18 x 0.37 cm at the caudal pole and 0.31 cm at the cranial pole. The right adrenal gland measured 1.08 x 0.33 cm at the caudal pole and 0.57 cm at the cranial 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** was subnormal in size. The portal vein to vena cava ratio was 1:1. The portal vein, vena cava and aorta all measured 0.5 cm. There was no evidence of portosystemic shunting. The gallbladder and common bile duct were unremarkable.



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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. 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.

**SEX**

Spayed female

**ULTRASONOGRAPHIC FINDINGS**

Microhepatica without macroscopic shunting.

**AGE**

2 years

Portal hypoplasia/microvascular dysplasia is likely with concurrent inflammatory hepatopathy, yet no evidence of macroscopic shunting.

**WEIGHT**

3.1 kg

**INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS**

Liver biopsy is necessary for further definition.

**INTERPRETED BY**

Eric Lindquist, DMV  
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**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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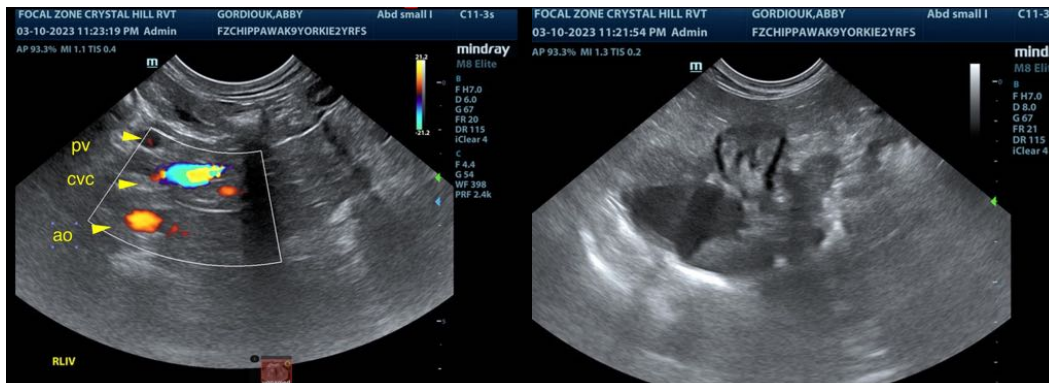
Dr. Dowell

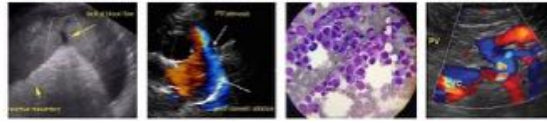
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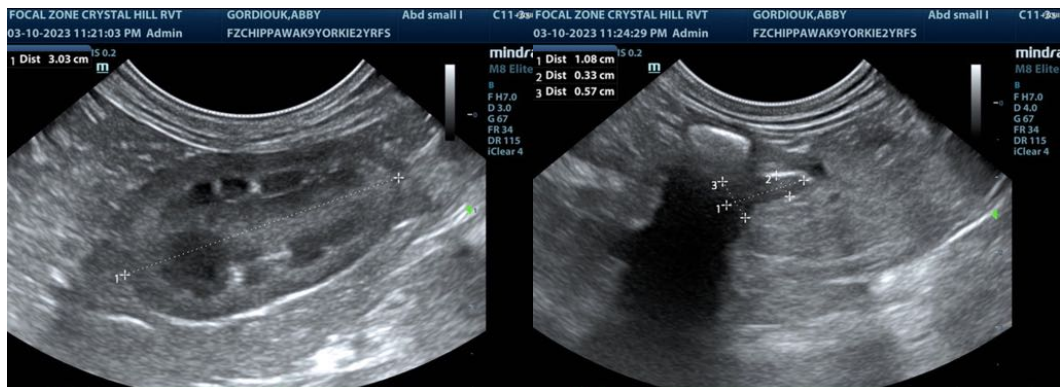
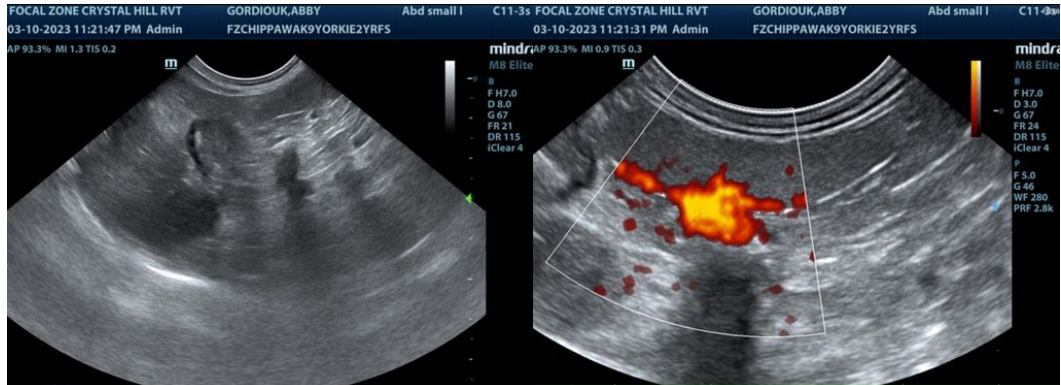
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The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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  
Eric.Lindquist@SonoPath.com