



**PATIENT**

Penny Rollins

**SPECIES**

Canine

**BREED**

Yorkshire Terrier

**SEX**

Female

**AGE**

5 Months

**WEIGHT**

5.3 Pounds

**INTERPRETED BY**

Eric Lindquist, DMV  
DABVP, Cert. IVUSS

**IMAGING PERFORMED BY**

Dr. Ebersole

**HOSPITAL NAME**

Scanvet

**REFERRING VET**

Dr. Chadbourne

**INVOICE**

17331

**DATE**

9/16/22

**PRESENTING CLINICAL SIGNS**

History: Concern for possible PSS. Episodes of lethargy, ataxia and dribbling urine. Sedated with Butorphanol and microdose DexDom. Reversed DexDom and repeated liver views.

Abnormal PE/Chem/CBC/UA Results: GGT 11, Lipase 2,000, Plt 25k BA: pre <1, post 61.

**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 **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 3.45 cm. The left kidney measured 3.27 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 1.32 cm x 0.87 cm at the cranial pole and 0.45 cm at the caudal pole. The left adrenal gland measured 0.28 cm at the cranial pole and 0.28 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 were noted.

**Liver**

The **liver** presented normal intrahepatic and extrahepatic vascularity with normal volume. The liver was slightly subnormal in size. The parenchyma was uniform. The gallbladder and common bile duct were unremarkable. No evidence of intrahepatic or extrahepatic shunting. The vena cava was slightly dilated owing to dexdomitor sedation yet portal vein to aortic ratio was 1:1, at 0.4 cm each. The vena cava measured 0.6 cm.

**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.

**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.

## SPECIES

Canine

## ULTRASONOGRAPHIC FINDINGS

- The hepatic veins were slightly dilated owing to Dexdomitor sedation. Minor sedation induced passive congestion noted. No evidence of intrahepatic or extrahepatic shunting.

## BREED

Yorkshire Terrier

## INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

Given the breed predisposition and the bile acid elevation, portal hypoplasia/microvascular dysplasia is likely. Liver biopsy would be necessary for further definition. This could also be done surgically if ovariohysterectomy is to be performed in this patients future. Diet change to liver-oriented diet is recommended. 10 days of metronidazole could be considered and reassessment of the bile acid elevations from an empirical standpoint. Further therapy based on biopsy results recommended.

## SEX

Female

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

## AGE

5 Months

**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.

## WEIGHT

5.3 Pounds

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## HOSPITAL NAME

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## REFERRING VET

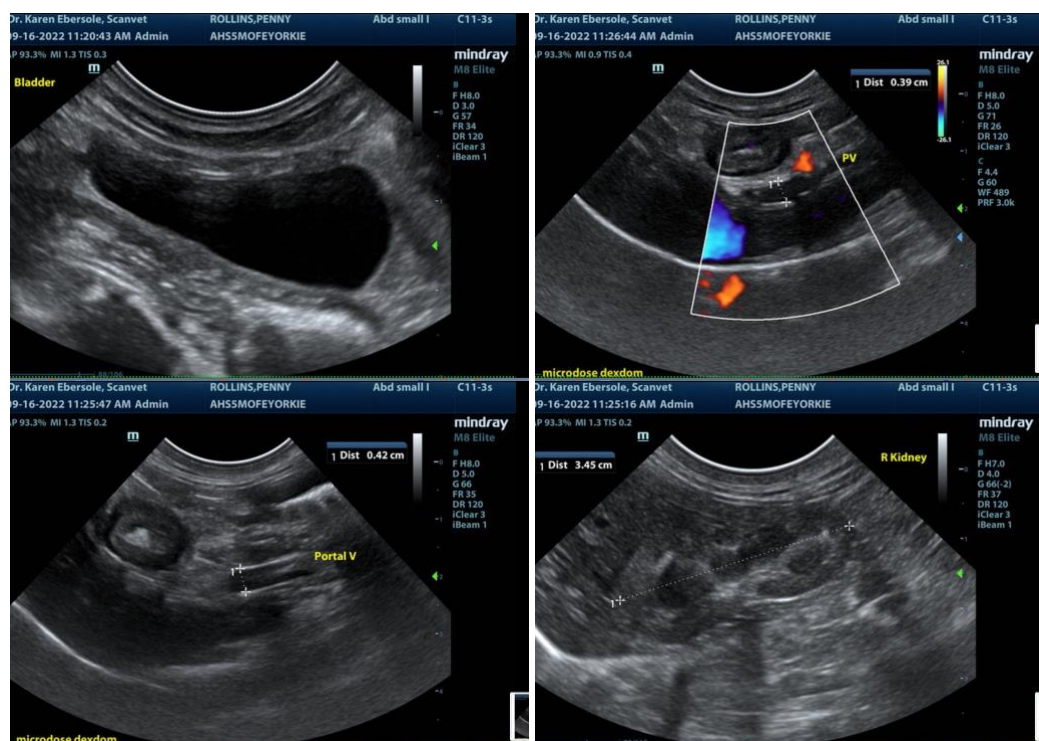
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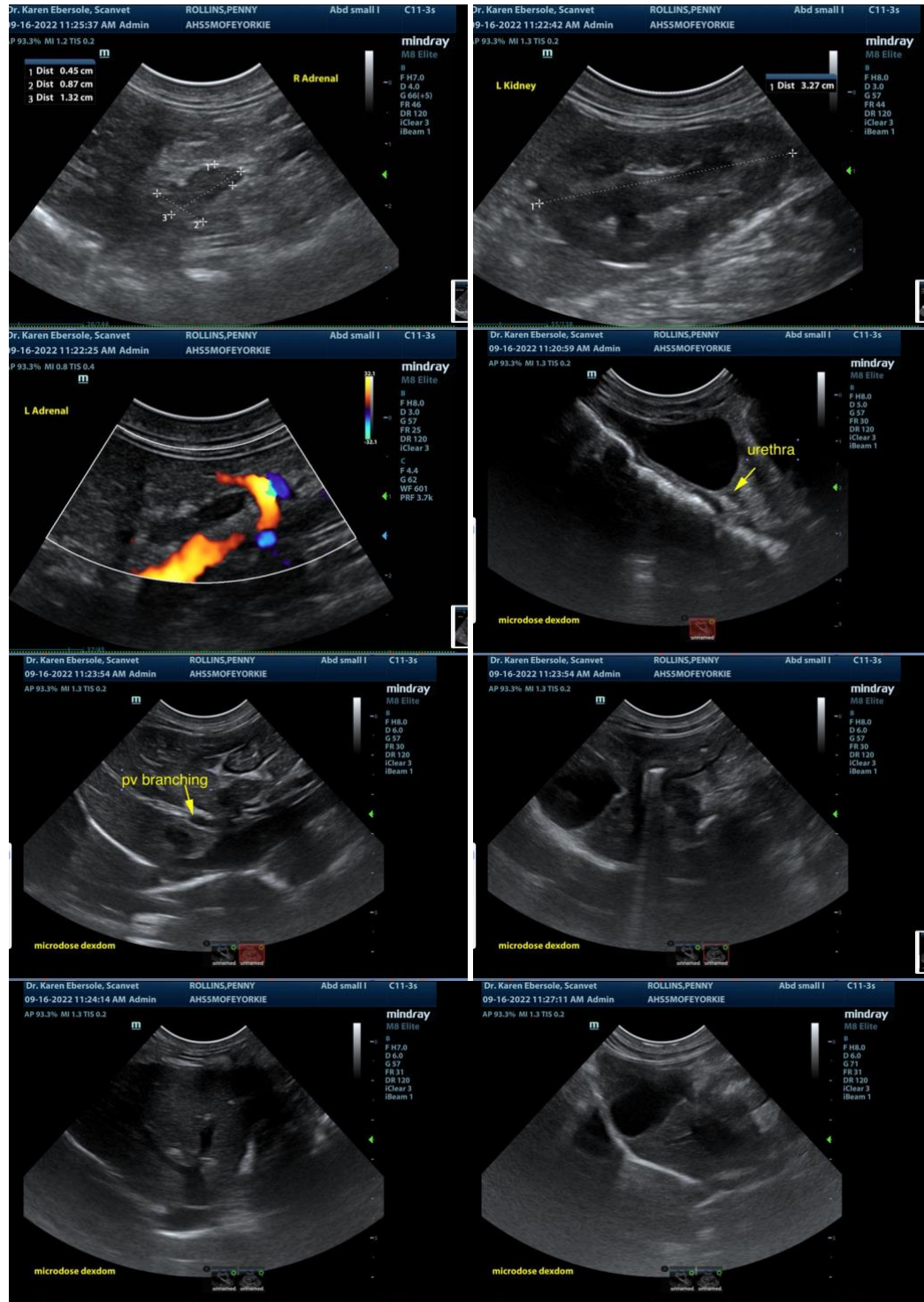
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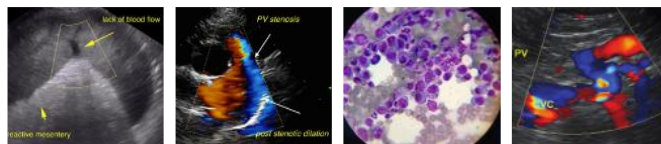
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The information and recommendations provided are based on the images presented by the referring veterinarian. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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