

**PATIENT**

Gilly Tsai

**PRESENTING CLINICAL SIGNS**

Low TP, albumin and globulin, bile acid 95.3, ALP 487, low RBC, hematocrit 30

**SPECIES**

Canine

**ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN**

**Urinary System**

**BREED**

Irish Wolfhound

The **urinary bladder**, trigone, and pelvic urethra presented normal thicknesses and normal tone. The pelvic urethra was imaged 3.0 cm beyond the cystourethral junction. The ureters were not visible which is normal. A minor amount of debris was noted. No evidence of inflammatory or neoplastic changes was noted. Ureteral papillae were normal.

**SEX**

The **kidneys** were bilaterally enlarged with thickened cortices and hyperechoic medullary rim sign. The kidneys were hypervascular as well. The left kidney measured 7.8 cm. The

**AGE**

3 months

**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 1.84 x 0.68 cm. The right adrenal gland measured 3.07 x 0.69 cm at the cranial pole and 0.34 cm at the caudal pole.

**INTERPRETED BY**

Eric Lindquist, DMV  
DABVP, Cert. IVUSS

**IMAGING PERFORMED BY**

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**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.

**HOSPITAL NAME**

Companion AH

**REFERRING VET**

Dr. Tsai

**Liver**

The **liver** was subnormal in size with slightly coarse architecture. The portal vein to vena cava ratio was normal. The portal vein measured 1.1, vena cava 1.1, aorta 1.1. The intrahepatic vessels were abnormal and large. Large intrahepatic shunt was noted in this patient and appeared to be most consistent with central divisional or right divisional intrahepatic shunt. The intrahepatic vascular volume was subnormal. The intrahepatic shunt measured 1.23 cm-1.3 cm in width. The gallbladder presented acceptably thin walls with primarily anechoic content. The cystic and common bile ducts were normal. No pathological hepatic lymphadenopathy was evident. No overt structural evidence of inflammatory, infiltrative or regenerative pathology was evident.

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**DATE**

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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**

**ULTRASONOGRAPHIC FINDINGS**

**AGE**

3 months

Intrahepatic shunt. Central or right divisional is suspected.

Microhepatica.

Swollen kidneys with medullary rim sign. Typical of abnormal urate metabolism.

**INTERPRETED BY**

Eric Lindquist, DMV  
DABVP, Cert. IVUSS

**INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS**

Referral for interventional surgery for potential vascular plug is recommended with Dr. Weiss at Animal Medical Center. In the meantime, clinical management of the following would be recommended.

**IMAGING PERFORMED BY**

Eric Lindquist, DMV  
DABVP, Cert. IVUSS

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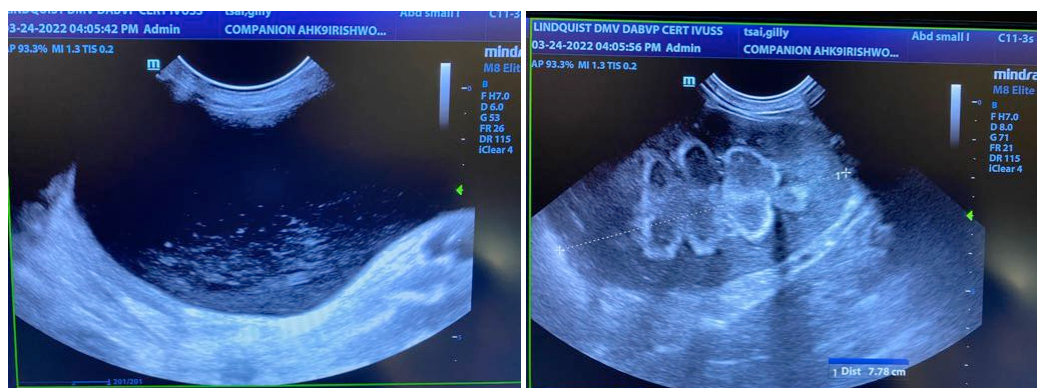
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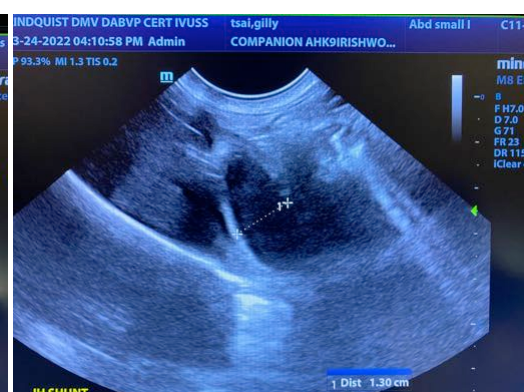
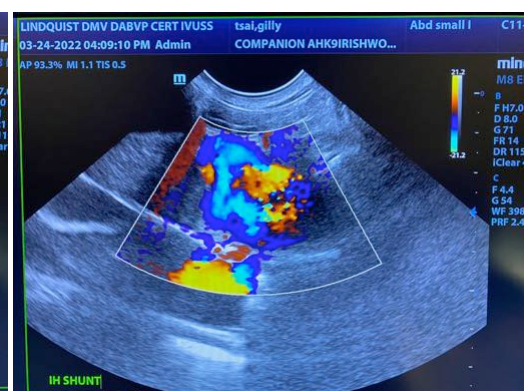
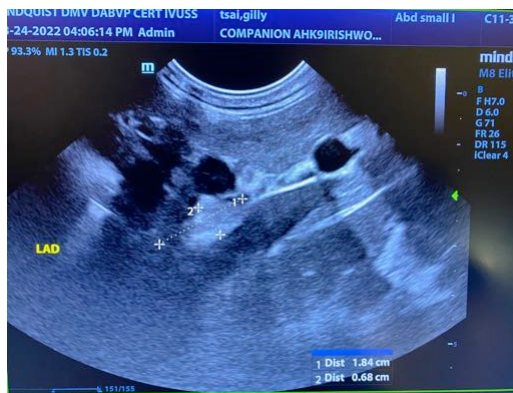
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The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

**SPECIES**

Canine

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.

**BREED**

Irish Wolfhound

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

**SEX**

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