

**DATE PRESENTING CLINICAL SIGNS**

6/3/22 Vomiting and bloody stool- started day of exam (6/1). History of gastroenteritis episodes every few months.

**PATIENT**

Willie Browne

Current Medications: 6/1: Cerenia 9mg sid, pantoprazole 8.6mg sid, buprenex 0.13mg IV sid in hospital, ondansetron 2.16mg sid in hospital, metronidazole 86mg IV bid in hospital.

Lab Results: CPL 1372, Amylase >2500, Lipase 5861, Cortisol 15.55, Mild neutrohilia 13570.

Date of Previous IntraPet Ultrasound: No previous.

Sedation: Not required to complete full diagnostic ultrasound.

Stat Report: Not requested.

**SPECIES**

Canine

**ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN****BREED**

Mini Goldendoodle

**Urinary System**

The urinary bladder is adequately distended with anechoic contents. The wall is smooth and regular. No abnormalities are noted with the trigone or proximal urethra, and there is no evidence of sediment, cystoliths, polyps or a mass.

**SEX**

Neutered Male

**Kidneys**

The **left** kidney measures 4.10 cm. The capsule is smooth. Its overall architecture, including the definition of the cortico-medullary junction, is preserved. There are no signs of nephroliths or pyelectasia. The surrounding mesentery is not hyperechoic.

**AGE**

7/15/19

The **right** kidney measures 4.14 cm. Its overall architecture, including the definition of the cortico-medullary junction, is preserved. There are no signs of nephroliths or pyelectasia. The surrounding mesentery is not hyperechoic.

**WEIGHT**

19.1 Pounds

**INTERPRETED BY**

Lisa Carioto, DVM,  
DVSc, Diplomate  
ACVIM

**Aortic bifurcation/trifurcation**

No abnormalities observed.

**Adrenal Glands**

The **left** adrenal gland measures 0.51 cm at the cranial pole, 0.48 cm at the caudal pole and 1.61 cm in length. No abnormalities are noted with the gland's overall architecture, echogenicity or echotexture. The phrenico-abdominal vein and surrounding vasculature and mesentery are unremarkable.

**IMAGING PERFORMED BY**

Andi Parkinson RDMS

The **right** adrenal gland measures 0.45 cm at the cranial pole, 0.46 cm at the caudal pole and 1.64 cm in length. No abnormalities are noted with the gland's overall architecture, echogenicity or echotexture. The phrenico-abdominal vein and surrounding vasculature and mesentery are unremarkable.

**HOSPITAL NAME**

Timonium AH

**Spleen**

The spleen is within normal limits in size, architecture, echotexture, and echogenicity. The capsule is smooth. No abnormalities are observed with its vasculature, i.e. congestion and thrombi are not identified.

**REFERRING VET**

Dr. Kauder

**Liver**

There are no obvious signs of hepatomegaly and its borders are smooth and sharp. The liver's echotexture is homogeneous and it is within normal limits in echogenicity; i.e. it is hypoechoic to the spleen. Focal lesions are not observed and no abnormalities are observed with the hepatic vessels.

**INVOICE**

38369

The gallbladder wall is within normal limits in thickness and echogenicity. A small to moderate amount of echogenic material is present within the GB. The portions of the cystic and/or common bile ducts observed are not dilated or tortuous, i.e. there are no signs of an obstruction.

### **Gastrointestinal**

A significant amount of gas is present within the lumen of the stomach. The gastric wall is within normal limits in thickness and the wall layers are well defined. However, the submucosa is mildly more prominent than usual. No obvious abnormalities are observed with its peristalsis.

Duodenum: Fluid, gas and ingesta are present within its lumen.

The small intestinal wall thickness is within normal limits and the definition of the wall layers is preserved. Gas and ingesta are present within the small intestines. Abnormally dilated loops of bowel are not observed. Ingesta and gas are present in the transverse colon.

The colonic wall is not thickened and mural detail is considered normal. Soft stools and gas are present within the colon.

### **Pancreas**

No abnormalities are observed with the architecture, contours, echogenicity or echotexture. There is no evidence of hyperechogenicity of the surrounding mesentery, i.e., signs of active pancreatitis are not present.

### **Other**

#### **Lymph nodes**

A mesenteric lymph node, measuring 0.66 cm in diameter x 2.08 cm in length, is noted. It is mildly enlarged and prominent, and has slightly irregular contours. It is within normal limits in echogenicity and echotexture. This is often a normal finding in young dogs. Very mild reactive hyperplasia may be contributing to its appearance.

**Abdominal effusion** is not visualized.

## **ULTRASONOGRAPHIC FINDINGS**

- **Gastrointestinal (GI) tract:** The submucosa is mildly prominent, which may be due to Willie's vomiting episodes. Severe abnormalities are not observed with the GI tract other than the prominent submucosa, gas and ingesta. The absence of sonographic signs does not rule out a diagnosis of a chronic enteropathy, for example, inflammatory bowel disease, dysbiosis, food or fat intolerance, inadequate amounts of dietary fibre, maldigestive disease, etc.
- **Gallbladder:** Gallbladder sludge is often clinically insignificant, however, some dogs may show clinical signs of gastroesophageal reflux disease (GERD), including vomiting, pica, etc. Therefore, obtaining a history regarding signs of GERD from the client is suggested. Treatment with an anti-acid, proton pump inhibitor or ursodeoxycholic acid may be required depending on the patient's history.
- **Pancreas:** A smoldering pancreatitis is suspected based on clinical signs and blood work results. It cannot be excluded despite the absence of sonographic abnormalities.

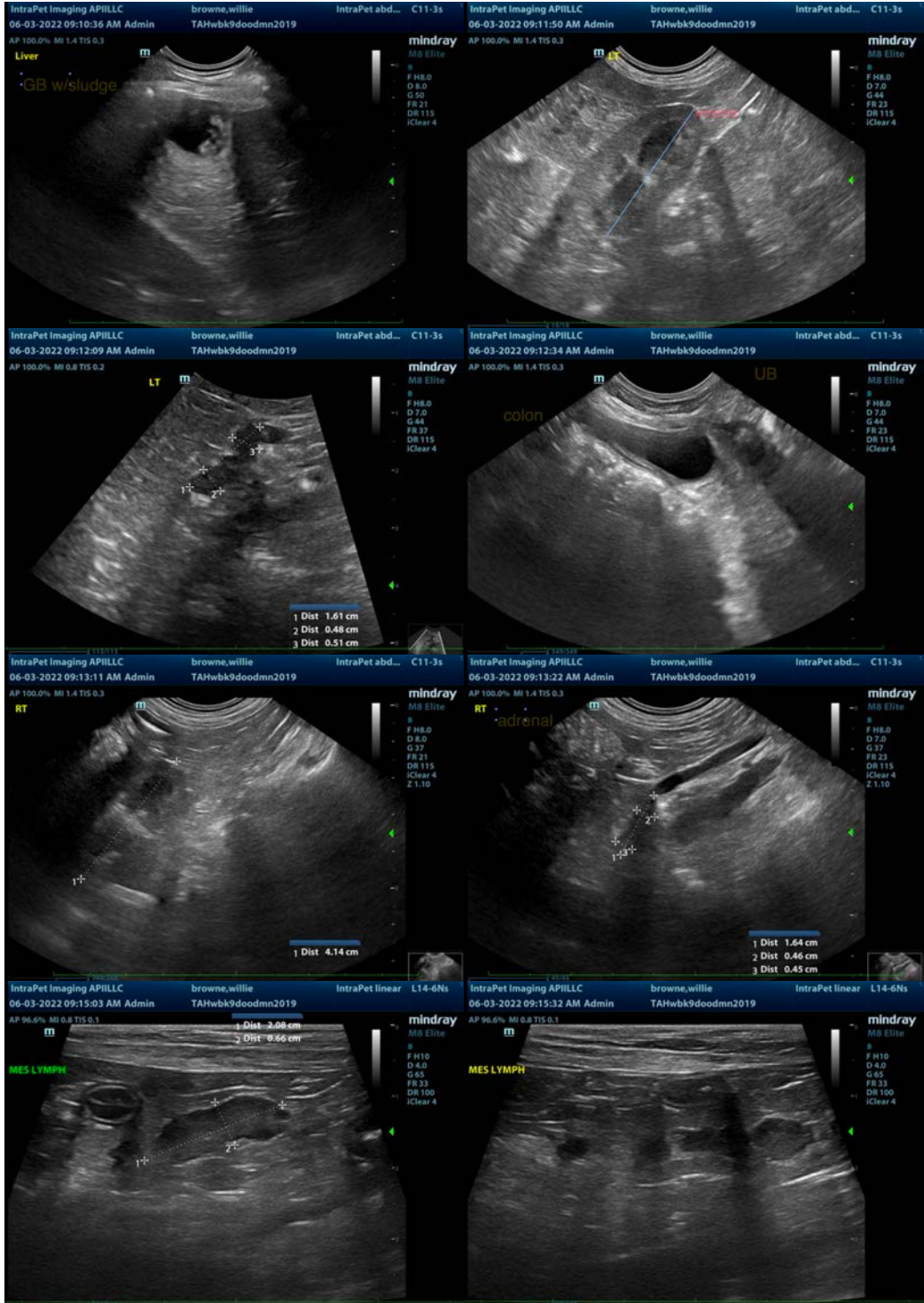
## **INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS**

Review of current diet (raw diet), i.e. *Campylobacter* spp, *Clostridium* spp., etc.

The following is suggested for the treatment of gastrointestinal and pancreatic diseases

- Evaluation of fasting triglycerides to exclude hyperlipidemia as cause of gallbladder sludge

- Intermittent episodes of cholecystitis with a secondary infection due to ascending bacteria from the GI tract
- Deworm, (e.g., fenbendazole), even if receiving monthly heartworm prevention.
- Diet trial (veterinary prescription *low fat*, hypoallergenic, hydrolyzed or novel protein) due to history of pancreatitis, for example, Purina HA. Royal Canin Hypo HP possible, but is higher in fat. Low fat, hypoallergenic diets also available through Rayne. If necessary, prioritize low fat diet rather than hypoallergenic.
- Small, frequent meals
- Supplementation with psyllium (soluble fibre) may be required, particularly if hydrolyzed hypoallergenic diet is fed
- Obtain a history regarding signs of GERD and pica
- If signs of GERD, 10-14 day trial with famotidine or omeprazole (0.7-1 mg/kg PO **q12h**)
- serum cobalamin, folate, TLI to exclude underlying EPI.
- A clay based paste, containing montmorillonite and a synbiotic, may be administered during episodes of acute diarrhea.
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- Prior to endoscopy, consider treatment with ursodeoxycholic acid for 3-6 months with sonographic re-evaluation of the gallbladder.
- Endoscopy and biopsies of the upper and lower GI tract may be eventually be required, if no response to deworming, diet trials and other suggestions, above





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.

Lisa Carioto, DVM, DVSc, Diplomate AVIM

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