

**PATIENT PRESENTING CLINICAL SIGNS**

Shep Ruminski Clinical Exam Findings: PE: -Mentation: qar -Hydration: Adequately hydrated -Eyes, Ears, Nose: No ocular discharge OU; no nasal discharge and airflow present bilaterally; mild debris AU; no significant abnormalities noted -Oral Cavity: Grade 1/4 periodontal disease; mucous membranes are pink and moist; CRT 2 sec; no evidence of petechiation or ulceration; no foreign object or mass appreciated - Cardiovascular: No murmur or arrhythmia noted, pulses were strong and synchronous. -Respiratory: Eupnea, normal bronchovesicular sounds on all lung fields, no cough elicited on tracheal palpation - Neurologic: PLR (direct & consensual) positive OU, no pain elicited on manipulation and palpation of neck and spine; no obvious neurologic deficits noted (complete neurologic exam not performed). - Gastrointestinal/Urogenital: Soft and non-painful abdomen with no evidence of mass or organomegaly on palpation -Rectal: liquid to soft stool -Peripheral Lymph Nodes: Small, soft, smooth, and symmetrical - Integument: Hair coat in good condition for age and breed, no ectoparasites or dermatitis noted, mild dorsal scale -Musculoskeletal: BCS 4/9, adequate musculature, no evidence of weakness or lameness during ambulation; no obvious orthopedic abnormalities noted (complete orthopedic exam not performed).

**SPECIES**

Canine

**BREED**

German Shepherd

**SEX**

Intact Male

**AGE**

4/16/22

**WEIGHT**

26 kg

**INTERPRETED BY**

Andrea Nicastro, DVM,  
Diplomate ACVIM (*Small Animal Internal Medicine*)

**IMAGING PERFORMED BY**

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**HOSPITAL NAME**

Blue Pearl MP ER

**REFERRING VET**

Caroline Andrews  
Johnson

Abnormal lab-work values: ALT >10,000 U/L (1706 U/L yesterday 4/16/23) ALKP- N but doubled since yesterday 70 U/L on 4/16, today 160 U/L PT >100s PTT >300s

Current Medications: Cerenia 1mg/kg pt is on 2.5% Dextrose IVF @60mL/hr

Radiographic Findings/Response Findings: 3 orthogonal views of the abdomen are available for interpretation performed April 17, 2023. The current study is compared to the most recent abdominal radiographs performed April 16, 2023.

FINDINGS: The stomach is similar to perhaps very mildly progressively distended with ill-defined soft tissue opacity and minimal gas. Gas distributes as expected throughout the pylorus on the left lateral view. The gastric wall at the level of the pylorus on the left lateral view is equivocally thickened with prominent rugae. The small intestines remain minimally gassy, nondistended and uniform in diameter. The feces throughout the colon has emptied. The colon is minimally gassy and nondistended. The cecum is mildly gas dilated. The serosal margin detail within the cranial abdomen is reduced. The liver and spleen appear normal in size. The kidneys are ill-defined, likely due to superimposition with the bowel. The urinary bladder is mildly distended. The remaining soft tissue and skeletal structures appear normal.

CONCLUSION: There is increased soft tissue opacity throughout the gastric lumen, potentially fluid, however poorly defined gastric foreign material could still be possible. Critical evaluation of the gastric lumen is inhibited on the current study given the minimal luminal gas to provide contrast. The gastric wall at the level of the pylorus is equivocally thickened and the rugae appear prominent, potentially due to nonspecific gastritis/gastroenterocolitis. There is no evidence of progressive distention of the small intestinal tract to support small intestinal mechanical obstruction on this exam. -Equivocal loss of detail within the cranial abdomen could be artifactual from visceral crowding however underlying pancreatitis, scant effusion or regional peritonitis is not excluded.

RECOMMENDATIONS: Further evaluation of the gastrointestinal tract should be considered if the patient's clinical signs have persisted or progressed despite supportive care and empiric medical management, ideally with an abdominal ultrasound, to more thoroughly evaluate the gastrointestinal tract, further evaluate the gastric lumen for evidence of luminal material or distal acoustic shadowing artifact, further evaluate the pancreas and peritoneum. Erin Griebie, DVM, DACVR

**ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN**

**INVOICE**

12763

**DATE**

4.17.23

**Urinary System**

The urinary bladder wall is normal in thickness and the mucosal surface is smooth. The bladder is distended. Luminal contents are mostly anechoic. No cystic calculi are observed. The region of the trigone and the proximal urethra, visible to a depth of 2 cm, are normal.

The prostate is normal in size (1.82 cm in width) with smooth peripheral contours. Parenchyma is mildly hyperechoic relative to surrounding omental fat. No focal lesions are observed. The prostatic urethra is not overtly dilated.

The left kidney is normal in size (7.37 cm in length) with a normal shape, architecture and smooth peripheral margins. There is a normal 1:3 cortex to medulla ratio with normal corticomedullary distinction. There is no evidence of pyelectasia, nephroliths, infarcts or hydroureter. Renal vasculature is normal.

The right kidney is normal in size (7.22 cm in length) with a normal shape, architecture and smooth peripheral margins. There is a normal 1:3 cortex to medulla ratio with normal corticomedullary distinction. There is no evidence of pyelectasia, nephroliths, infarcts or hydroureter. Renal vasculature is normal.

#### ***Adrenal Glands***

The left adrenal gland is normal in size (0.58 cm at cranial pole) (0.53 cm at caudal pole) with a normal shape and homogenous parenchyma. The glandular echogenicity and detail are unremarkable. Capsule, cortex, and medullary definition are normal. The phrenicoabdominal vein and surrounding vasculature are normal.

The right adrenal gland is in normal size (1.50 cm at cranial pole) (0.60 cm at caudal pole) with a normal shape and homogenous parenchyma. The glandular echogenicity and detail are unremarkable. Capsule, cortex, and medullary definition are normal. The phrenicoabdominal vein and surrounding vasculature are normal.

#### ***Spleen***

The spleen is subjectively normal in size with a normal capsular contour. There is appropriate echogenicity and echotexture. No focal lesions are observed. Splenic vasculature is normal.

#### ***Liver***

The liver is normal to slightly prominent in size with normal curvilinear peripheral contours. The parenchyma is isoechoic relative to the spleen and homogenous in appearance. No focal lesions are observed. Hepatic vasculature and intrahepatic biliary tracts are of normal volume with no evidence of congestion. The portal vein to caudal vena cava ratio is approximately 1: 1.

The gall bladder is mildly to moderately distended. The wall is diffusely thickened (up to 0.62 cm), irregular and hypoechoic ("halo" sign). Luminal contents are anechoic. The cystic and common bile ducts are normal/not seen.

#### ***Gastrointestinal***

The gastric lumen is moderately fluid-distended. The gastric wall and pylorus are normal in thickness with a normal layering pattern. The pyloric outflow tract is patent. The small intestinal lumen is not dilated. The small intestinal wall is normal in thickness with a normal layering pattern and appropriate mural detail. Discreet masses are not identified. The colonic wall is normal. There is no obvious evidence of an obstructive pattern.

#### ***Pancreas***

The region of the pancreas is isoechoic relative to surrounding omental fat. No obvious parenchymal abnormalities are observed. There is no evidence of regional inflammation or effusion.

#### ***Free Abdomen***

Trace free fluid is observed. Several prominent mesenteric lymph nodes are visualized (the largest measuring 2.82 cm in length). A 3.48 cm portal lymph node is also visualized. The nodes are relatively normal in shape and echogenicity.

### **Other**

A brief echocardiogram reveals no evidence of pericardial effusion or obvious right atrial/auricular mass.

## **ULTRASONOGRAPHIC FINDINGS**

### **Primary Findings**

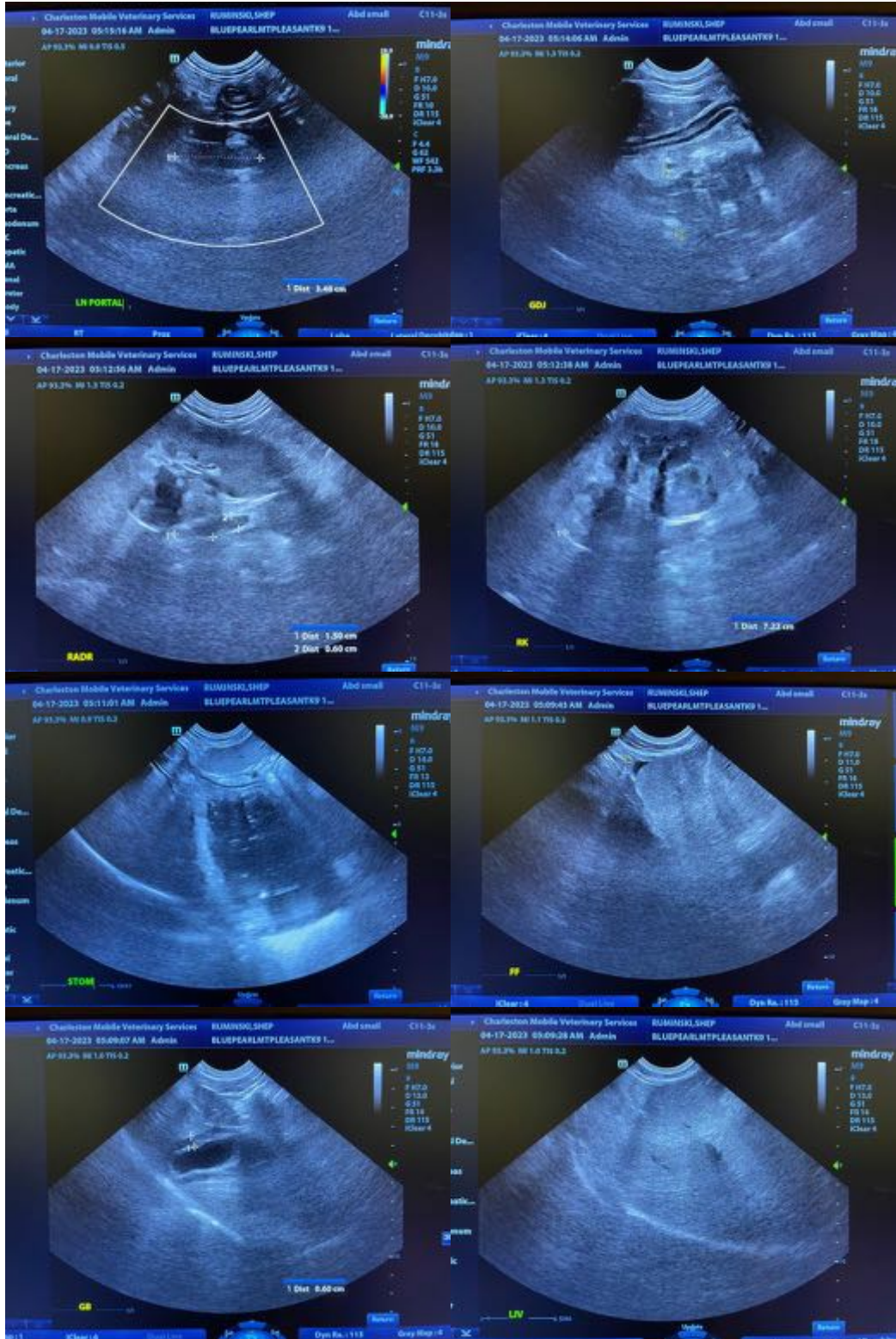
- Nonspecific diffuse hepatopathy. Given the patient's age and the acute nature of the patient's illness, infection (i.e., Leptospirosis, bacterial cholangiohepatitis) or hepatotoxicity (i.e., sago palm) are the top differentials. Infiltrative neoplasia (i.e., lymphoma) is also a differential but considered less likely. Other hepatopathies should also be considered.
- The gall bladder changes could be consistent with cholecystitis, hypoalbuminemia, anaphylaxis, right-sided congestive heart failure (unlikely), immune-mediated hemolytic anemia, other. Correlation with the patient's clinical history is recommended.
- Trace ascites

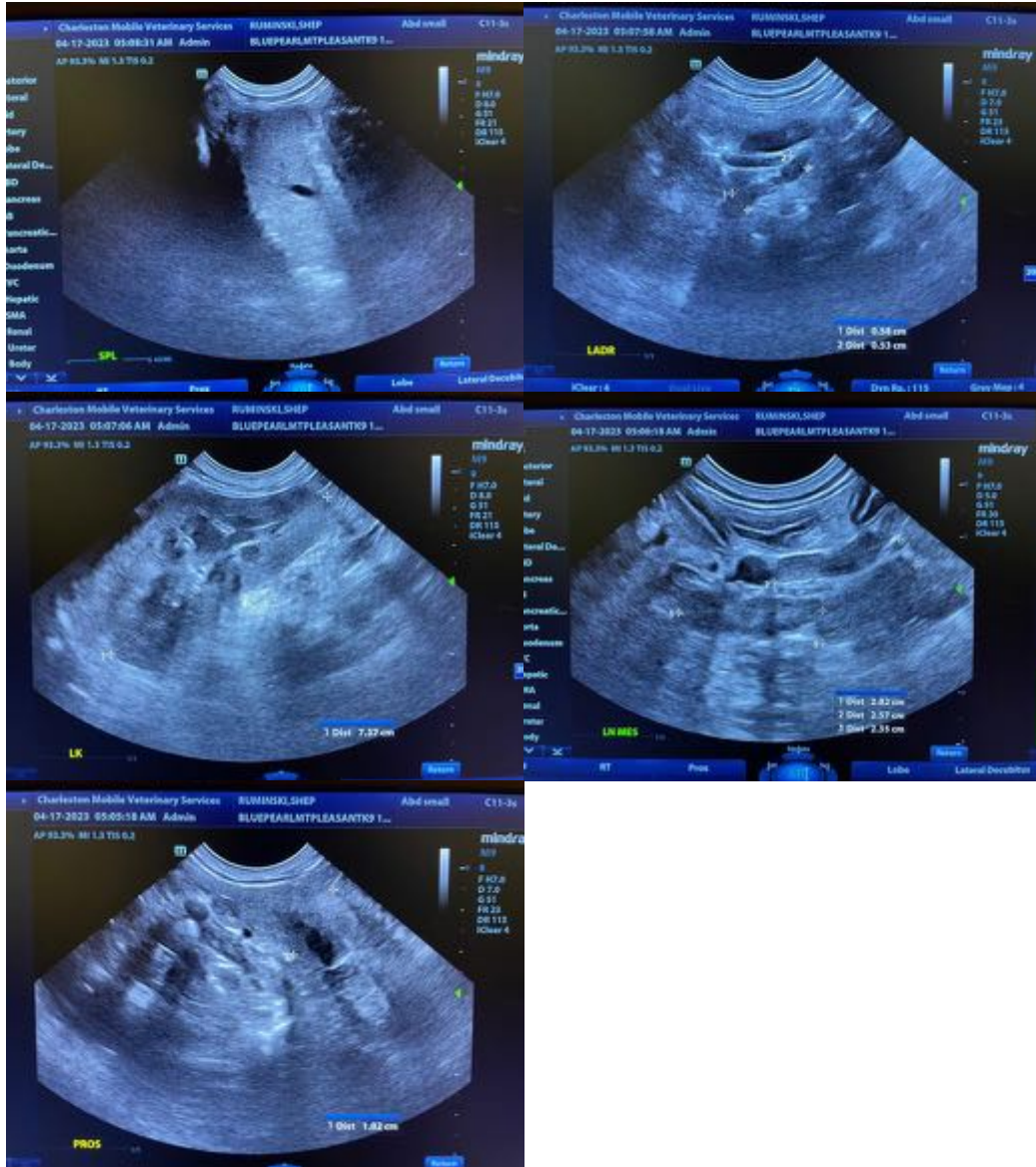
### **Secondary Findings**

- The prominent abdominal lymph nodes are most consistent with reactive lymphadenitis or lymphoid hyperplasia. Neoplastic infiltration is considered less likely.
- The prostate changes are as expected for a young, intact male.

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

- Leptospirosis testing (i.e., blood and urine PCR, serology) is recommended.
- Given that the patient's clotting times are significantly prolonged, hepatic tissue sampling is not an option at this time. Therefore, consider empirical treatment for bacterial cholangiohepatitis/Leptospirosis/Hepatotoxicity/cholecystitis (i.e., amoxicillin-clavulanic acid, hepatic antioxidants and supportive care). Also consider the initiation of fresh frozen plasma.
- If the clotting status can be stabilized, fine-needle aspirate or surgical biopsies of the liver can be considered.
- Consider three-view thoracic radiographs to assess cardiopulmonary status.





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.

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