



## PATIENT

Macree Kraper

## SPECIES

Canine

## BREED

Goldendoodle

## SEX

Spayed Female

## AGE

12/17/2010

## WEIGHT

55.5 lbs

## INTERPRETED BY

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

## IMAGING PERFORMED BY

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

## HOSPITAL NAME

Park West Vet

## REFERRING VET

Dr. Jen Brogie

## INVOICE

11941

## DATE

11.2.22

## PRESENTING CLINICAL SIGNS

Clinical Exam Findings: PE overall unremarkable. Stage 1 periodontal disease. Few dermal growths consistent with sebaceous adenoma. Hx urinary tract infection. Clinically doing well at home. Some PU/PD reported but appropriate USG (1.036). No routine medications other than prevention (HG/NG). Had recommended 1 month course of Denamarin but O never initiated.

Abnormal lab-work values: Monitoring trends in ALT:

10/28/22 - 206

9/13/22 - 158

6/22/22 - 172

7/13/2021 - 111

Current Medications: None

Radiographic Findings: None performed

## ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN

### Urinary System

The urinary bladder is mildly to moderately distended with anechoic urine. The wall in the region of the apex is mildly thickened (up to 0.41 cm) with an irregular mucosal surface. The wall tapers to a normal thickness as it extends toward the urinary bladder neck. No cystic calculi are observed. The region of the trigone and the proximal urethra, visible to a depth of 3-4 cm, are normal.

The left kidney is normal in size (7.32 cm in length); normal shape and architecture with smooth peripheral margins. There is a normal 1:3 cortex to medulla ratio with minimal loss of corticomedullary distinction. There is no evidence of pyelectasia, nephroliths, infarcts or hydroureter. Renal vasculature is normal.

The right kidney is normal in size (6.97 cm in length); normal shape and architecture with smooth peripheral margins. There is a normal 1:3 cortex to medulla ratio with minimal loss of corticomedullary distinction. There is no evidence of pyelectasia, nephroliths, infarcts or hydroureter. Renal vasculature is normal.

### Adrenal Glands

The left adrenal gland is normal size (0.76 cm at cranial pole) (0.56 cm at caudal pole) (2.05 cm in length); normal shape; 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 normal size (1.00 cm at cranial pole) (0.66 cm at caudal pole); normal shape; 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 normal in size (1.77 cm in width at the level of the hilus) with a normal capsular contour. The parenchyma is subtly mottled in appearance. A 1.60 cm multi-septated cystic nodule is observed at the medial aspect Splenic vasculature is normal.

### Liver

The liver is subjectively prominent in size with swollen to slightly irregular peripheral contours. The parenchyma is isoechoic relative to the spleen and diffusely mottled/heterogenous, with several, small ill-defined hypoechoic nodules. The caudate process is isoechoic relative to the remainder of the organ and is swollen with rounding of the peripheral margins. Hepatic vasculature and intrahepatic biliary



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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 lumen is moderately distended. The wall is thin and smooth. A scant amount of echogenic debris is adhered to the luminal surface. The cystic and common bile ducts are normal/not seen.

**Gastrointestinal**

The stomach and intestine are free of stasis and exhibit normal peristaltic activity. The gastric lumen is not 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 thickness is normal with a normal layering pattern and appropriate mural detail. Discreet masses are not identified. The colonic wall is normal. No obstructive disease is noted.

**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**

The peritoneal cavity is normal. There is no evidence of inflammation or effusion. The abdominal lymph nodes are normal/not visible.

**Other**

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

**ULTRASONOGRAPHIC FINDINGS**

**Primary Findings**

- Suspected diffuse hepatopathy. Top differentials include chronic hepatitis, hepatotoxicosis (i.e., copper), bacterial cholangiohepatitis, fibrosis, infiltrative neoplasia (less likely), +/- concurrent benign age-related change (i.e., regenerative nodular hyperplasia and/or vacuolar hepatopathy).
- The cystic splenic nodule could be consistent with a benign cyst or an early vascular tumor.

**Secondary Findings**

- The pancreatic changes are most consistent with age-related parenchymal remodeling, potentially secondary to a prior inflammatory episode, early fibrosis or chronic pancreatitis.
- The urinary bladder wall changes are suggestive of cystitis. Correlation with clinical history is recommended.

**INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS**

Consider pre-and postprandial serum bile acids to assess hepatic function. Ultimately, hepatic tissue sampling (i.e., surgical biopsy with aerobic and anaerobic bile cultures and acquisition of additional hepatic tissue samples for potential copper quantitation), with particular attention to the caudate process, may be necessary to get a definitive diagnosis. Prior to tissue sampling, three-view thoracic radiographs are recommended along with clotting times (PT/PTT).

If a conservative approach is desired, consider empirical treatment for bacterial cholangiohepatitis (amoxicillin-clavulanic acid, +/-metronidazole, Denamarin). If no



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improvement in the liver values is seen within 7-10 days of initiating therapy, antibiotics should be discontinued, and hepatic tissue sampling reconsidered. If liver values improve, continue therapy for at least 4-6 weeks and 1 week beyond normalization of the liver values.

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Regarding the splenic nodule, consider a recheck ultrasound in 4-6 weeks to assess for progression.

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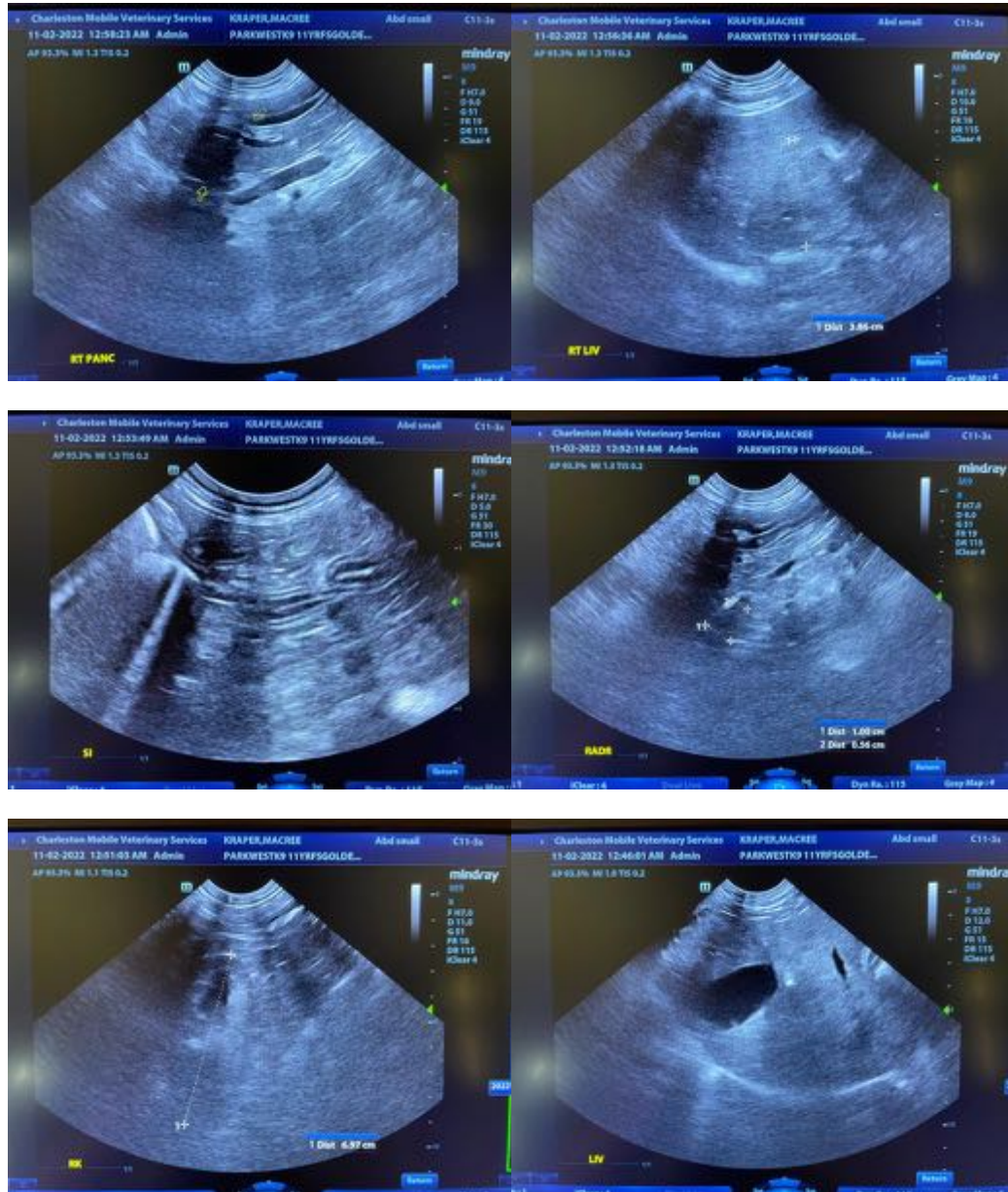
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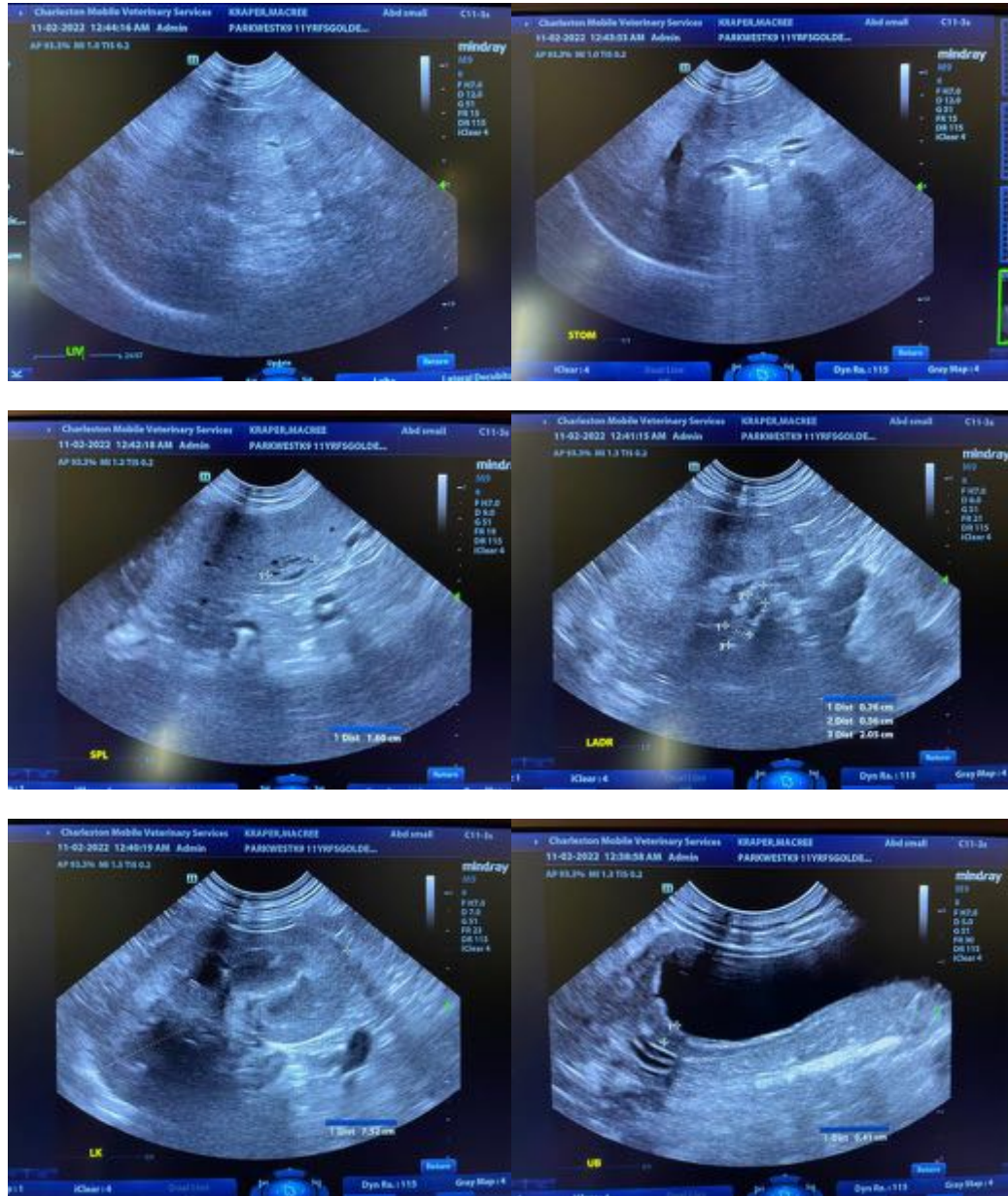
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The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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.

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