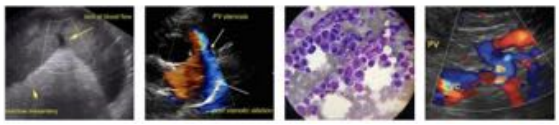




**PATIENT**

Gunnar Turner

**SPECIES**

Canine

**BREED**

Golden Retriever

**SEX**

Male, neutered

**AGE**

13 Yrs.

**WEIGHT**

100 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**

West Ashley VC

**REFERRING VET**

Dr. Tierney

**INVOICE**

14866

**DATE**

5/2/23

## PRESENTING CLINICAL SIGNS

Presented last week with right rear lameness sent home on Previcox blood work was done alk phos was mildly elevated ALT was normal lymphocytes were mildly elevated and thyroid was low. After owner started giving Previcox she started vomiting. Repeat blood work today ALT 3154. The patient is vomiting.

## ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN

### *Urinary System*

The urinary bladder wall is normal in thickness and the mucosal surface is smooth. The bladder is moderately distended. Luminal contents are anechoic. No cystic calculi are observed. The region of the trigone and the visible portion of the proximal urethra are normal.

The prostate is not definitively visualized due to its pelvic location.

The left kidney is normal in size (7.29 cm in length) with a normal shape, smooth peripheral margins and normal internal architecture. There is mild loss of corticomedullary distinction. Several hyperechoic shadowing diverticular foci are observed. There is no evidence of pyelectasia, infarcts or hydronephrosis. Renal vasculature is normal.

The right kidney is normal size (8.51 cm in length) with a normal shape, smooth peripheral margins and normal internal architecture. There is mild loss of corticomedullary distinction. Several hyperechoic shadowing diverticular foci are observed. There is no evidence of pyelectasia, infarcts or hydronephrosis. Renal vasculature is normal.

### *Adrenal Glands*

The left adrenal gland is normal size (0.83 cm at cranial pole) (0.71 cm at caudal pole) with a normal shape and smooth peripheral contours. The parenchyma is subtly heterogeneous with slight loss of glandular detail. The phrenicoabdominal vein and surrounding vasculature are normal.

The right adrenal gland is enlarged (3.74 cm x 2.87 cm) and rounded with a mass effect. The parenchyma is hyperechoic to heterogeneous in appearance with loss of glandular detail. There is no obvious evidence of vascular invasion.

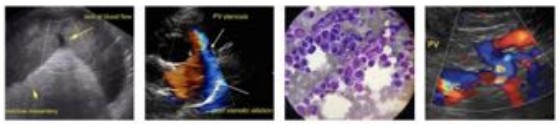
### *Spleen*

The spleen is normal in size (2.07 cm in width at the level of the hilus) with a normal capsular contour. There is appropriate echogenicity and echotexture. No focal lesions are observed. Splenic vasculature is normal.

### *Liver*

The liver is subjectively normal in size with normal curvilinear peripheral contours. The parenchyma is hypoechoic relative to the spleen and heterogeneous in appearance with numerous ill-defined hyperechoic nodules/masses throughout the organ. One of the larger nodules measures 3 cm in diameter. Vascular and biliary tracts are of normal volume with no evidence of congestion. The gallbladder is of normal contours and contains some dependent echogenic debris. The wall is normal in thickness. No choleliths are observed. The cystic and common bile ducts are normal.

### *Gastrointestinal*





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The stomach and intestine are free of stasis and exhibit normal peristaltic activity. The gastric lumen is mildly 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 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:**

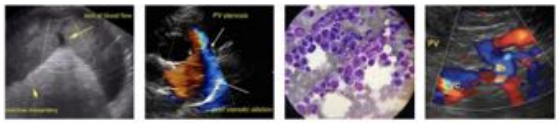
- The hyperechoic hepatic nodules/masses trend toward the benign (i.e., regenerative nodular hyperplasia or myelolipomas) with a lower possibility of emerging neoplasia. An obvious cause for the acute elevation in ALT is not definitively identified in this study. Considerations include hepatotoxicity (i.e., drug induced, sago palm, other), infection (i.e., Leptospirosis, bacterial cholangiohepatitis), other.
- Right adrenal mass. Differentials include neoplasia (i.e., adenoma, adenocarcinoma, pheochromocytoma) vs a non-neoplastic process (i.e., macronodular hyperplasia). This is an incidental finding and unlikely to be related to the patient's current issues.

**Secondary Findings:**

- Mild bilateral, chronic, age-related renal changes with subtle dystrophic mineralization.

## INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

- Leptospirosis testing (i.e., blood and urine PCR, serology) is recommended.
- Cytologic evaluation of the liver should be considered in this patient if clotting status is appropriate. A fine needle aspirate using a 25-gauge needle is recommended. If cytologic evaluation is inconclusive, consider a surgical liver biopsy with aerobic and anaerobic bile cultures and acquisition of additional hepatic tissue samples for copper quantitation.
- If a more conservative approach is desired, consider empirical treatment for cholangiohepatitis/Leptospirosis/hepatotoxicity with amoxicillin-clavulanic acid along with hepatic antioxidants. If liver values do not begin to improve within 7-10 days of initiating





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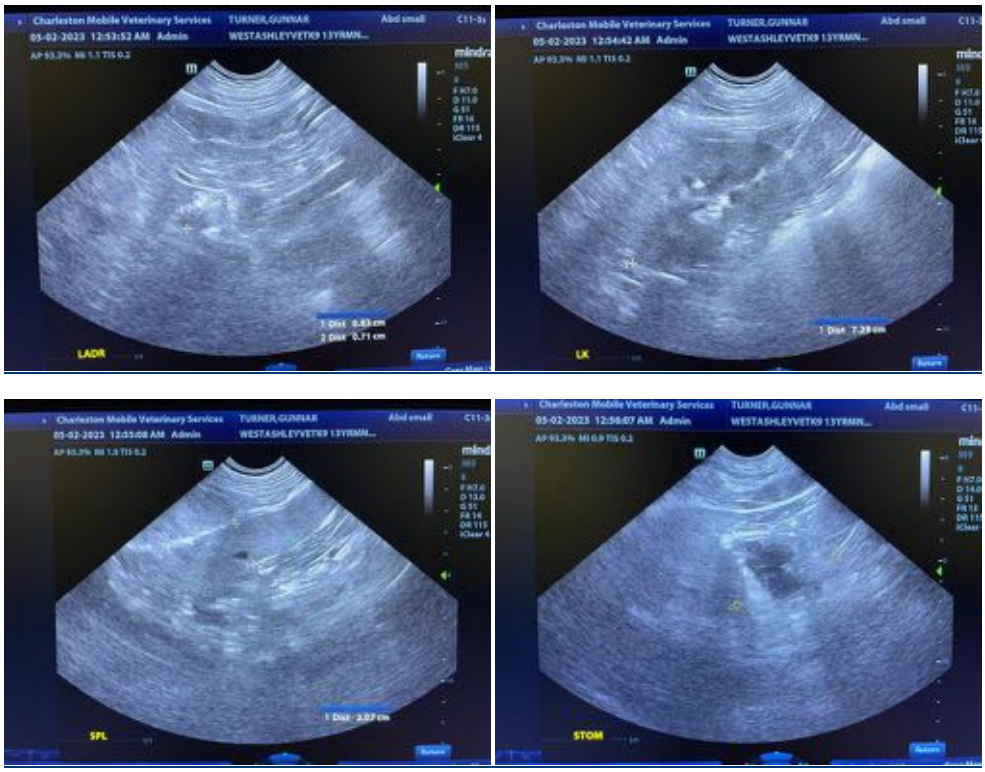
therapy, antibiotics should be discontinued and hepatic tissue sampling reconsidered. If values do improve, a 4–6-week course of treatment is recommended.

- NSAIDs should be avoided for the foreseeable future due to the potential for drug toxicity associated with Previcox.
- Serial liver enzyme monitoring is recommended to assess for progression of disease.
- Regarding the right adrenal mass, consider the following diagnostics when the patient's hepatopathy has stabilized:
    1. Three-view thoracic radiographs to assess for pulmonary metastatic disease.
    2. Baseline blood pressure measurement to evaluate for systemic hypertension.
    3. Further testing for a functional tumor (i.e., low-dose dexamethasone suppression test, urine/blood catecholamines levels).
    4. +/- abdominal CT scan, particularly if the client is contemplating a right adrenalectomy.



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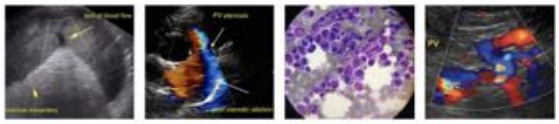

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CharlestonMobile.Net 800.403.5408

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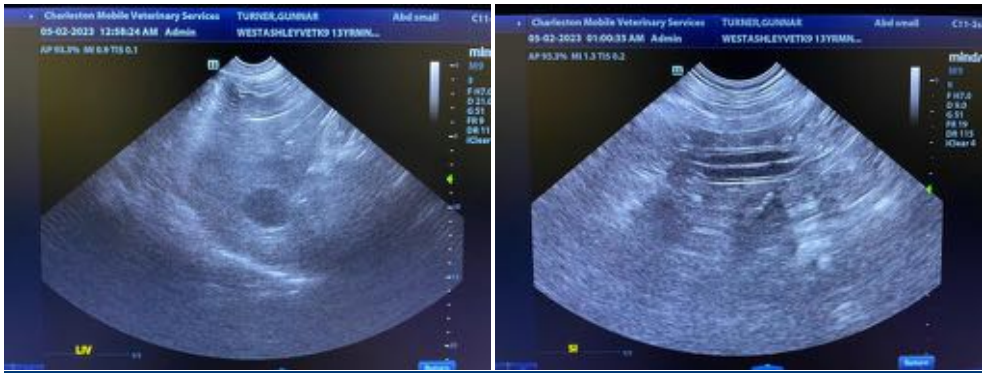

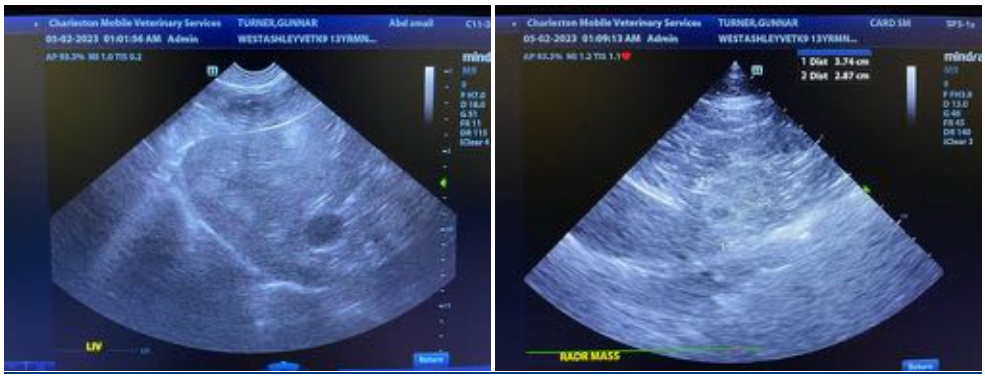


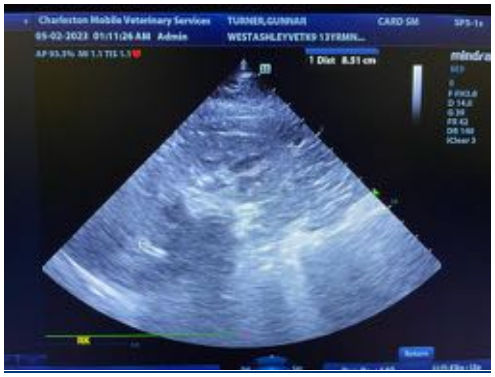

**The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.**

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)
info@SonoPath.com