

PATIENT PRESENTING CLINICAL SIGNS

Duncan Ross Chronic liver enzyme elevations with recent severe increase (ALP, ALT too high to read). PU/PD, panting.

SPECIES

Canine

ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN

BREED

Yorkie

Urinary System

The urinary bladder wall is normal in thickness and the mucosal surface is smooth. The bladder lumen is moderately distended with anechoic urine. No masses, inflammatory changes or calculi are observed. Ureteral papillae and visualized portion of the proximal urethra, visible to a depth of 2 cm, are normal.

SEX

Male, neutered

The prostate is normal in size (1.20 cm in width) and shape. Parenchyma is homogenous. The prostatic urethra appears normal without evidence of dilation or obstruction.

AGE

14 Yrs.

The left kidney is normal size (5.78 cm in length); normal shape and architecture with smooth peripheral margins. The cortex is mildly thickened and there is mild to moderate loss of corticomedullary distinction. Hyperechoic shadowing diverticular foci are visualized. There is no evidence of pyelectasia, infarcts or hydroureter. Renal vasculature is normal.

WEIGHT

23.5 lbs.

The right kidney is normal size (5.23); normal shape and architecture with smooth peripheral margins. The cortex is mildly thickened and there is mild to moderate loss of corticomedullary distinction. A 1.03 cm cortical cyst is visualized. Hyperechoic shadowing diverticular foci are visualized. There is no evidence of pyelectasia, infarcts or hydroureter. Renal vasculature is normal.

INTERPRETED BY

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

Adrenal Glands

The left adrenal gland is enlarged (0.82 cm at cranial pole) (0.79 cm at caudal pole) with a slightly irregular shape. The parenchyma exhibits mild heterogeneity with some loss of glandular detail. The phrenicoabdominal vein and surrounding vasculature are normal.

IMAGING PERFORMED BY

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Medicine)

The right adrenal gland is enlarged (0.95 cm at cranial pole) (0.77 cm at caudal pole) with a slightly irregular shape. The parenchyma exhibits mild heterogeneity with some loss of glandular detail. The phrenicoabdominal vein and surrounding vasculature are normal.

HOSPITAL NAME

Flowertown

Spleen

The spleen is subjectively normal in size (1.01 cm in width) with normal peripheral margins. The parenchyma is subjectively hypoechoic and homogeneous. No focal lesions are observed. Splenic vasculature is normal with no evidence of thrombosis.

REFERRING VET

Dr. Guffey

Liver

The liver is subjectively enlarged with swollen peripheral contours. The parenchyma is hyperechoic relative to the spleen and diffusely mottled with numerous varying sized hypoechoic nodules throughout the organ. Vascular and biliary tracts are of normal volume with no evidence of congestion. The gall bladder lumen is distended. The wall is normal in thickness. A moderate amount of aggregated echogenic, partially dependent debris/sludge is observed within the lumen along with a scant amount of suspended echogenic debris. The cystic and common bile ducts are normal/not seen.

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PATIENT

Gastrointestinal

Duncan Ross

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.

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Pancreas

The right limb of the pancreas is visible with normal curvilinear peripheral contours. The parenchyma is largely isoechoic relative to surrounding omental fat and slightly mottled in appearance. The pancreatic duct is visible but not overtly dilated. There is no evidence of peripancreatic inflammation or effusion.

SEX

Male, neutered

Free Abdomen

There is no evidence of free fluid. The abdominal lymph nodes are normal/not visible.

AGE

14 Yrs.

Other

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

WEIGHT

23.5 lbs.

ULTRASONOGRAPHIC FINDINGS

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(*Small Animal Internal Medicine*)

Primary Findings:

- Given the patient's clinical history and sonographic liver changes, infiltrative neoplasia (i.e., lymphoma) is the top differential. A diffuse inflammatory process, however, cannot be completely excluded. Concurrent vacuolar hepatopathy and/or regenerative nodular hyperplasia is also possible.
- Gallbladder sludge, non-mucocele.
- Mild bilateral adrenomegaly. This finding is most consistent with hyperplastic change.

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Secondary Findings:

- The bilateral renal changes are most consistent with chronic interstitial nephrosis/nephritis with left dystrophic mineralization and a right cortical cyst.
- The hypoechoic splenic parenchyma may be a normal variant for this patient or may be secondary to extramedullary hematopoiesis, lymphoid hyperplasia, infiltrative neoplasia, other.
- The pancreatic changes are most consistent with age-related parenchymal remodeling, potentially secondary to a prior inflammatory episode, early fibrosis or chronic pancreatitis.

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INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

- Three-view thoracic radiographs are recommended to assess for pulmonary metastases.



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- A fine needle aspirate of the liver is recommended (if clotting status is appropriate). A 25-gauge needle should be used.
- Also consider pre and post prandial serum bile acids to assess hepatic function +/- Leptospirosis testing (i.e., blood and urine PCR, serology), particularly if the clinical index of suspicion for infection is high.
- Depending on the results of the above diagnostics, surgical hepatic biopsies may be warranted. If pursued, aerobic and anaerobic bile cultures are also recommended along with hepatic copper quantitation.

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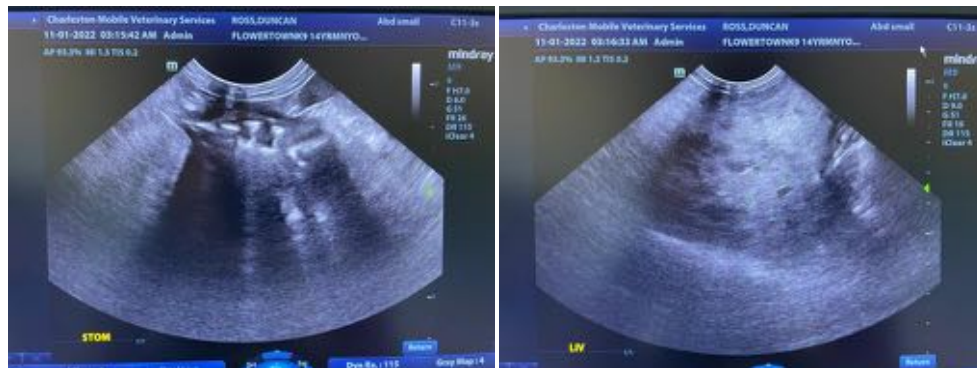
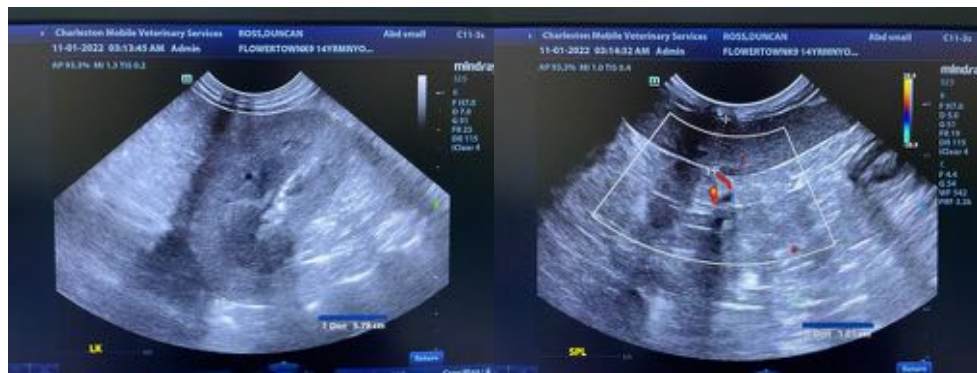
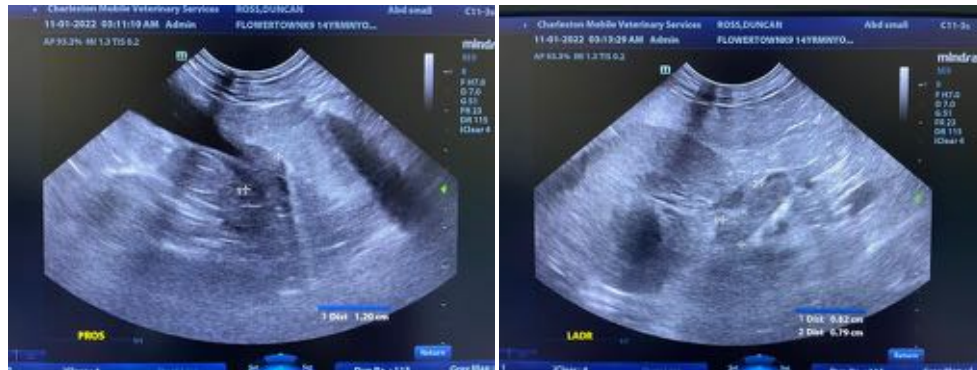
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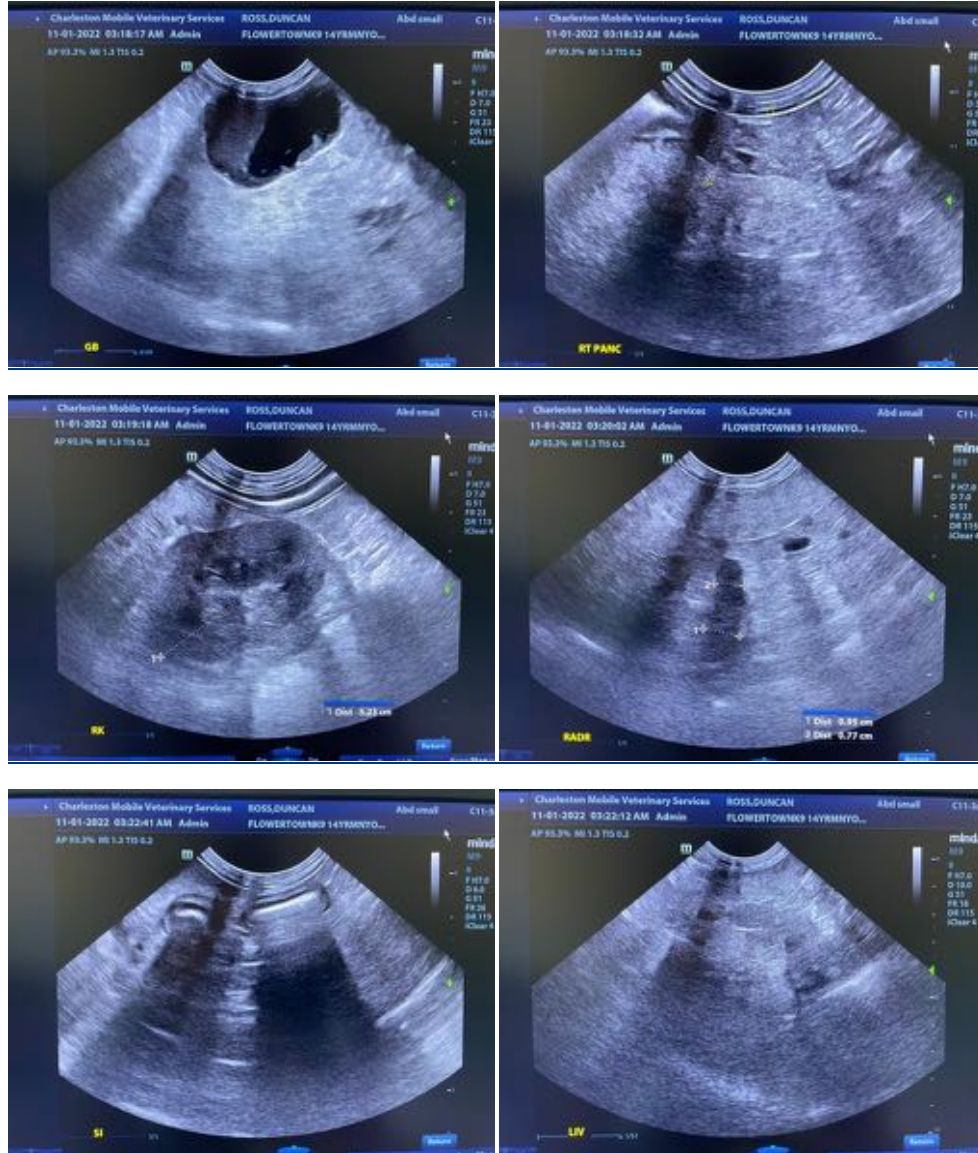
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The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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.

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