



PATIENT PRESENTING CLINICAL SIGNS

Tofu Ruchika
SPECIES History: Patient presented for anorexia and weight loss. On presentation patient was slightly icteric. CBC shows inflammatory leukogram and chem17 shows marked cholestatic hepatopathy with GGT 137, ALT and ALP unreadable. Brief abdominal ultrasound showed markedly distended gallbladder with concern for obstruction. Patient was hospitalized on IV fluids antibiotics, maropitant, buprenorphine, and oral Denamarin Advanced.
Canine

BREED ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN

Maltese *Urinary System*

The urinary bladder wall is normal in thickness. The mucosal surface is smooth. The bladder is moderately distended. A scant amount of suspended echogenic debris is observed within the lumen. No cystic calculi are observed. The region of the trigone is normal.

SEX

Neutered Male The region of the prostate is not visualized due to its pelvic location.

AGE

16

The left kidney is subjectively normal-in-size with a slightly irregular shape. There is a normal 1:3 cortex to medulla ratio with moderate loss of corticomedullary distinction. Trace pyelectasia is present (0.15 cm) in the longitudinal plane. At least one, small, nonobstructive mineralized focus is visualized. In addition, at least one small cortical cyst is seen. There is no evidence of hydronephrosis. Renal vasculature is normal.

WEIGHT

8 lbs

The right kidney is normal in size (3.72 cm in length) with a normal shape, architecture and smooth peripheral margins. There is a normal 1:3 cortex to medulla ratio with mild loss of corticomedullary distinction. Trace pyelectasia is present (0.15 cm in the longitudinal plane). Several, small, nonobstructive mineralized foci are visualized. There is no obvious evidence of hydronephrosis. Renal vasculature is normal.

INTERPRETED BY

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

Adrenal Glands

The left adrenal gland is mildly enlarged (0.63 cm at cranial pole) (0.56 cm at caudal pole) with slightly swollen peripheral contours. Glandular echogenicity and detail are normal. The phrenicoabdominal vein and surrounding vasculature are normal.

IMAGING PERFORMED BY

Julia Bakker, DVM

The right adrenal gland is normal in size (0.94 cm at cranial pole) (0.51 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.

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Orange Blossom
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Spleen

The spleen is normal in size (0.84 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.

REFERRING VET

Harrison Pearl, DVM

Liver

The liver is subjectively enlarged, with irregular peripheral contours. The parenchyma is isoechoic relative to the spleen. On the left side, a 1.6 x 1.5 cm expansile nodule is visualized. The parenchyma is isoechoic relative to the spleen and mildly heterogenous in appearance. On the right side, a 1.6 x 1.5 cm expansile nodule is visualized. Hepatic vasculature and intrahepatic biliary tracts are of normal volume with no evidence of congestion. (See also "**Pancreas**").

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DATE

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The gallbladder is distended. The wall is normal- to mildly-thickened (up to 0.32 cm) and hyperechoic-to-mineralized. Some echogenic-to-mineralized, mobile debris is observed within the lumen. The cystic and common bile ducts are not definitively visualized.



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Gastrointestinal

The lumen is not distended. The gastric wall is normal in thickness with a normal layering pattern. 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. There is no evidence of an obstructive pattern.

Pancreas

The right limb is enlarged, with irregular peripheral contours. A mass effect (measuring >5.0 cm) is observed within this region. The parenchyma is hypoechoic-to-heterogenous. Surrounding mesentery is hyperechoic.

Lymph Nodes

(See "Other" category).

Free Abdomen

The mesentery in the cranial abdomen is hyperechoic. Trace free fluid is suspected.

Other

In the left- mid-abdomen, a 2.4 x 1.6 cm irregular, hypoechoic structure is visualized. The mesentery surrounding the structure is hyperechoic.

ULTRASONOGRAPHIC FINDINGS

Primary Findings

- Mass effect in the right cranial quadrant, suspected to be arising from the pancreas, although other origins (i.e., liver, mesentery) cannot be excluded. Considerations include severe pancreatitis and/or pancreatic neoplasia. Adjacent peritonitis/saponification of fat is present. The pathology in the right cranial quadrant is likely resulting in an extra-hepatic biliary obstruction, with subsequent gallbladder dilation and concurrent peritonitis adjacent to the gallbladder. Impending or early rupture are possible.
- The origin of the hypoechoic lesion in the left mid-abdomen is unclear. It may be arising from lymph node, mesentery, pancreas, other. Considerations include neoplasia, inflammatory focus, other. Adjacent peritonitis is present.
- The hepatic changes are nonspecific and could be secondary to inflammatory disease (i.e., cholangiohepatitis, chronic hepatitis), Leptospirosis, hepatotoxicosis, infiltrative neoplasia (i.e., lymphoma), vacuolar hepatopathy, regenerative nodular hyperplasia, other hepatopathy, or some combination thereof. The left hepatic nodule could be consistent with focal neoplasia or a benign process (i.e., regenerative nodule, inflammatory focus, other).

Secondary Findings

- Bilateral nonspecific age-related renal changes with trace pyelectasia and nonobstructive nephrocalcinosis
- Mild left adrenomegaly

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

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



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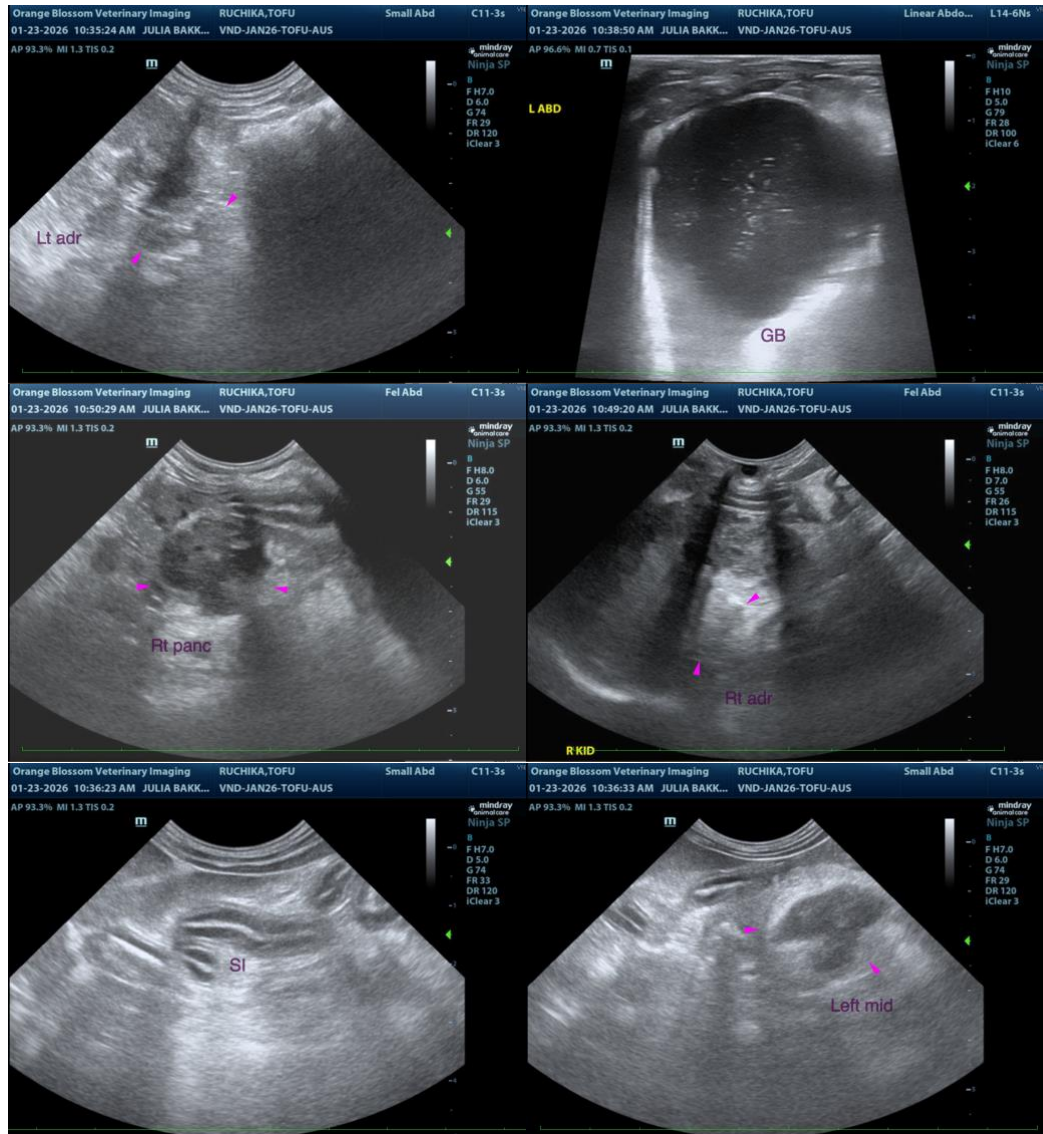
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- Consider fine-needle aspiration of the mass effect in the right cranial quadrant (if accessible and if clotting status is appropriate). Twenty-five gauge-needles should be used. An abdominal CT scan would also be useful in further evaluation of abdominal pathology. An abdominal exploratory should be considered, particularly due to the concern of impending or early gallbladder rupture. If surgery is pursued, referral to a board-certified surgeon is recommended due to the possible need for bile duct rerouting, feeding tube placement, post-operative complications, etc.



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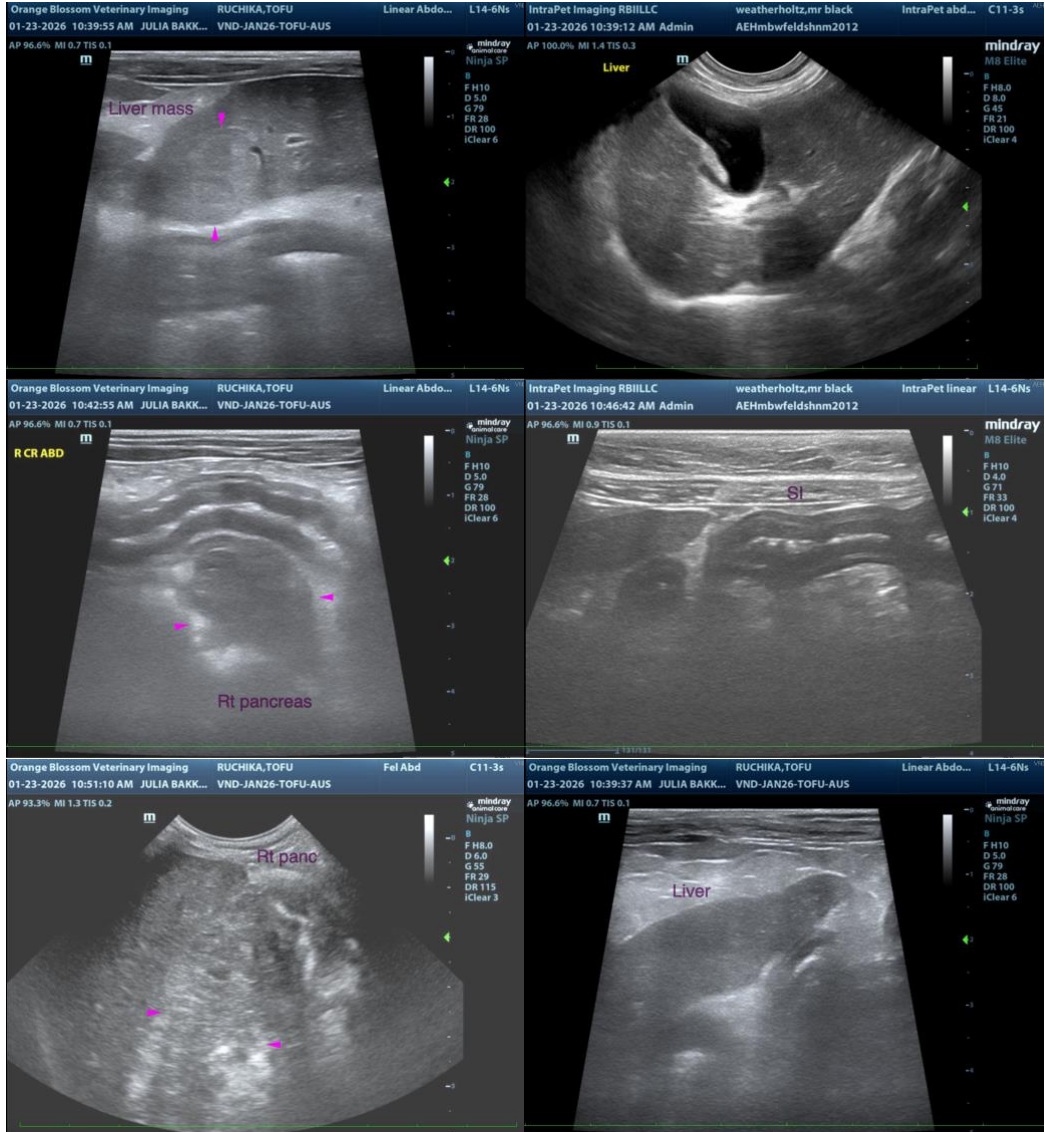
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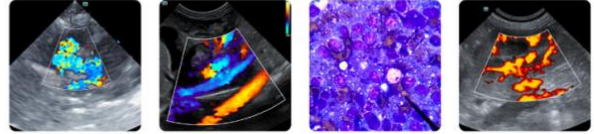
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The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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)
info@SonoPath.com



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