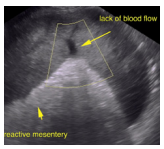

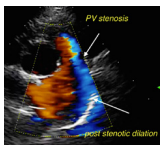

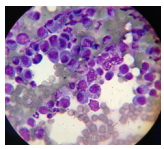
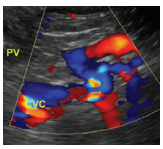

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PATIENT
Sis Robertson

SPECIES
Feline

BREED
DSH

SEX
Neutered Male

AGE
11 Years

WEIGHT
18.25 Pounds

INTERPRETED BY
Lisa Carioto, DVM, DVSc, Diplomate ACVIM

IMAGING PERFORMED BY
Dr. Becky Meier-Gast

HOSPITAL NAME
Meier Vet Clinic PC

REFERRING VET
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36923

DATE
4/14/22

PRESENTING CLINICAL SIGNS

Sis started vomiting last night at midnight and proceeded to vomit multiple times until the morning. He would not eat today. He has been hiding and not acting right. Sis has a history of constipation. SIs has not been defecating in litterbox but goes all over the house.
Abnormal PE/Chem/CBC/UA Results: Abdominal radiographs- cholelith in gallbladder. Moderately enlarged colon and multiple fecal balls. Blood work- mildly elevated GGT at 5 U/L (1-4 U/L). Eosinophils decreased - suspected stress response.

ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN

Urinary System

The urinary bladder is not well distended, but its contents are anechoic. The wall is smooth and regular. No abnormalities are noted with the trigone or proximal urethra, and there is no evidence of sediment, cystoliths, polyps or a mass.

The **left** kidney measures 4.57 cm (3.80-4.40 cm). Its overall architecture is well preserved for a cat of Sis' age. A very mild loss of the normal definition of the cortico-medullary junction is present, which is not uncommon at this age. Mild mineralizations of the diverticulae are observed, without signs of nephroliths or pyelectasia. The surrounding mesentery is mildly hyperechoic.

The **right** kidney measures 4.75 cm (3.80-4.40 cm). The cortex is very mildly hyperechoic and a very mild loss of the normal definition of the cortico-medullary junction is present. Mild mineralizations of the diverticulae are present, without evidence of nephroliths or pyelectasia. The surrounding mesentery is not hyperechoic.

Aortic bifurcation/trifurcation: No abnormalities observed.

Adrenal Glands

The **left** adrenal gland was not visualized, however, the surrounding area did not reveal any abnormalities.

The **right** adrenal gland measures 0.48 cm in diameter and 0.98 cm in length. No abnormalities are noted with the gland's overall architecture, echogenicity or echotexture, other than a focal hyperechoic area ("nodule"), which is suggestive of mineralization or possibly fat or nodular regeneration. Neoplasia is considered unlikely. The phrenico-abdominal vein and surrounding vasculature and mesentery are unremarkable.

Spleen

Not visualized, however, the surrounding area did not reveal any abnormalities.

Liver

There are no obvious signs of hepatomegaly and its borders are smooth and sharp. The liver is homogeneous, but mildly to moderately hyperechoic, i.e., it is isoechoic to the falciform fat. No focal nodules or cystic lesions are observed. There is no evidence of hepatic congestion.

The gallbladder wall is within normal limits in size, thickness and echogenicity. It is not abnormally distended. Its contents are anechoic except for two strongly hyperechoic structures that cast shadows. The larger of the two measures 6.8 mm and the second 5.5 mm. In certain angles, it appears as a single cholelith, measuring 1.14 cm. The second cholelith is present at the neck of the cystic duct. The cystic duct is not dilated. The common bile duct is not dilated, measuring 0.32 cm. An obstruction is not evident based on the appearance of the biliary tree.

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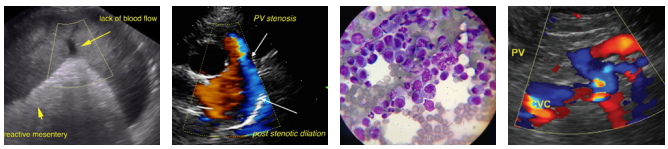

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Gastrointestinal

The gastric wall is within normal limits in thickness and the wall layers are well defined. No obvious abnormalities are observed with its peristalsis.

The small intestinal wall thickness, including the duodenum, is within normal limits and the definition of the wall layers is preserved. Dilated loops of bowel are not observed. Depending on the sonographer's location, one cannot exclude the duodenal papilla, or a possible polyp. The angle of the intestine is not a concern.

The colonic wall is not thickened and mural detail is considered normal.

Pancreas

Not visualized due to the gas in the surrounding GI tract, however, no obvious abnormalities are noted.

Other

Lymph nodes No abnormalities are observed

Abdominal effusion is not visualized

ULTRASONOGRAPHIC FINDINGS

- Cholelithiasis; two choleliths are observed. An obstruction is not evident based on the appearance of the biliary tree. However, the smaller cholelith is at the neck of the gall bladder, i.e. its position may have moved, thereby causing irritation and vomiting.
- Suppurative cholangitis/cholangiohepatitis may be responsible for the hepatic changes observed.
- A focal hyperechoic area is observed in the right adrenal gland. Its appearance is suggestive of mineralization. Other differential diagnoses include, fat or nodular regeneration. Neoplasia is considered unlikely.
- Very mild degenerative changes of both kidneys, which are suggestive of age related degeneration. Although Sis is not demonstrating sonographic signs of pyelonephritis, the surrounding perinephric mesentery is mildly hyperechoic, therefore, pyelonephritis cannot be excluded.

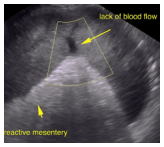
INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

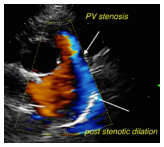
A urinalysis and urine culture and sensitivity are suggested to exclude possible pyelonephritis.

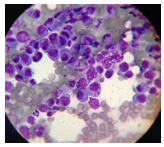
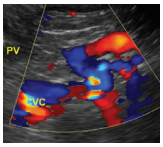
Sis should remain hydrated and anti-emetics are suggested. The latter may not help if the cholelith is causing a physical irritation.

Cholestasis and suppurative cholangitis/cholangiohepatitis cannot be excluded. Although indiscriminate use of antibiotics is not normally recommended, one could start treatment with a broad-spectrum antibiotic and reassess liver enzyme activities, including a GGT, in a few weeks. If an improvement is not observed, a decision to pursue further diagnostics, for example, a FNA of the liver, may be pursued.

Ursodeoxycholic acid (Ursodiol) will not dissolve the choleliths already present. If initiated, it should be used judiciously at a very low dose and slowly up-titrated to prevent the risk of an obstruction.





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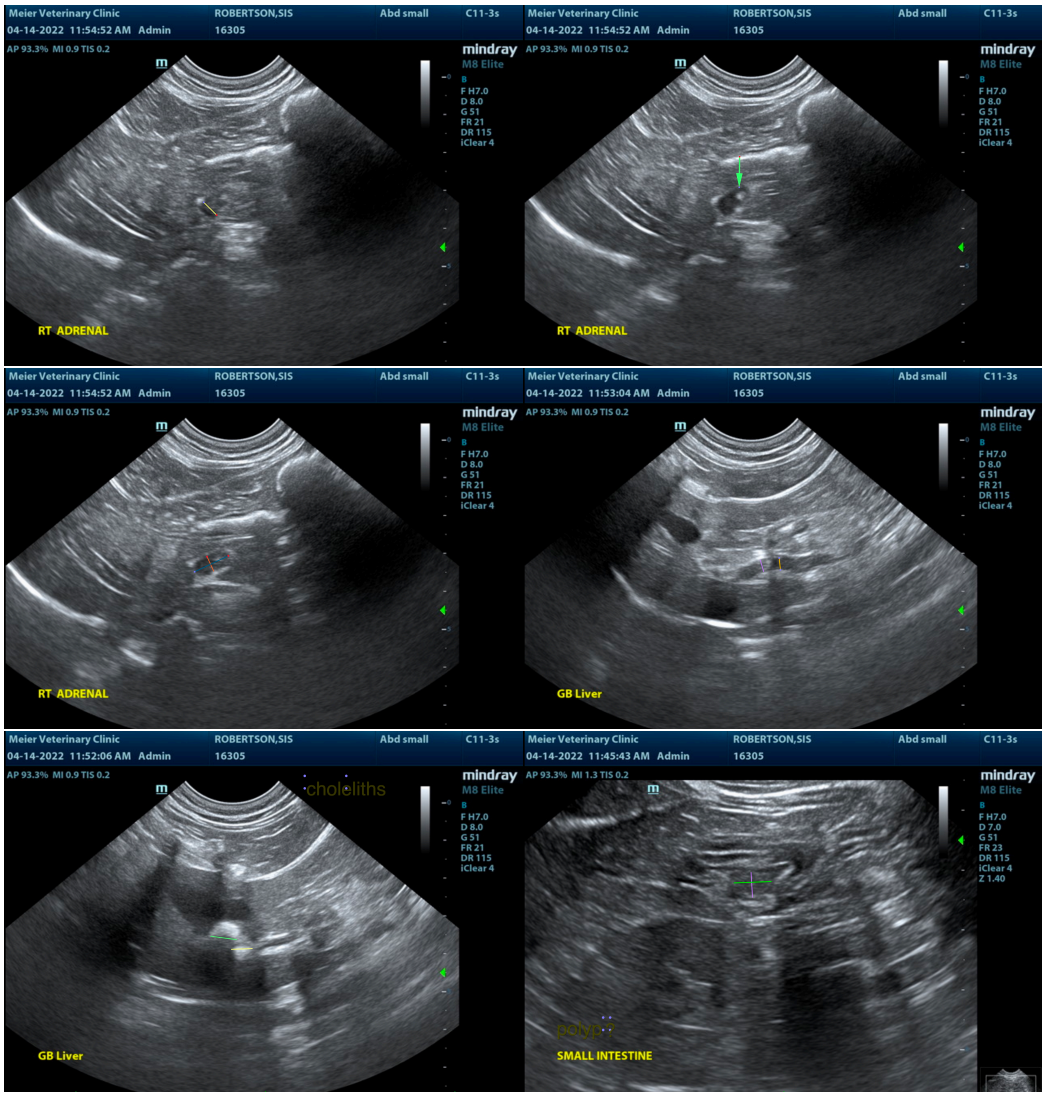
Another, more proactive option, is to consider cholecystectomy with culture of the choleliths, however, certain risks are associated with this procedure.

Sis' biliary tract is not obstructed, however, there is a risk that this may occur again or that smaller choleliths develop and cause an obstruction.



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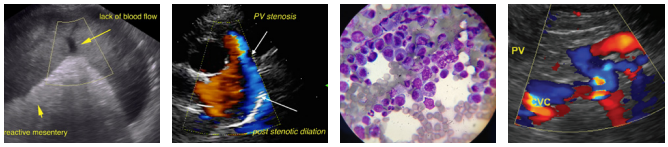

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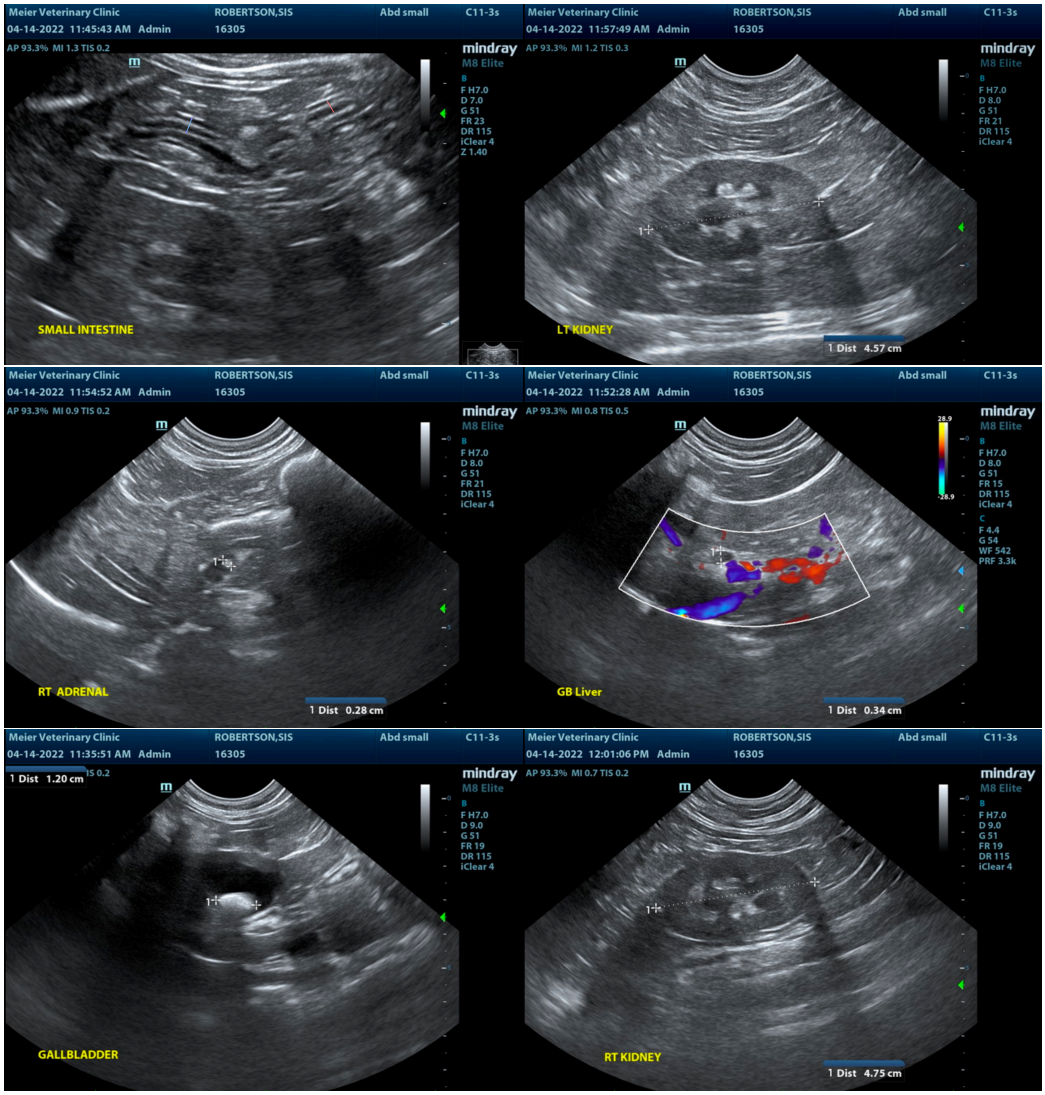

The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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.

Lisa Carioto, DVM, DVSc, Diplomate ACVIM
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