**PATIENT**

Lily Kirsch 267054

SPECIES

Feline

BREED

Ragdoll

SEX

Spayed Female

AGE

13 Years

WEIGHT

4 kg

INTERPRETED BYLisa Carioto, DVM,
DVSc, Diplomate
ACVIM**IMAGING PERFORMED BY**

Tom McNeill

HOSPITAL NAME

SVS Imaging CT

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INVOICE

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PRESENTING CLINICAL SIGNS

Azotemia worsening slowly since September. Uncontrolled UTI since about September as well that PDVM has been treating with multiple different antibiotics. Lily has never been symptomatic for UTI or azotemia. Recently been on clavamox for UTI for a bout 7 days then vomited tuesday. D/C Clavamox and gave SCF and cerenia. Past 24 hours hyporexic
Abnormal PE/Chem/CBC/UA Results: No bacteria on UA (urine culture pending). Azotemia mildly worse from last BW in January. Kidney stones and possibly asymmetric kidneys seen on right lateral AXR

ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN**Urinary System**

The urinary bladder is adequately filled. The wall is smooth and regular. No abnormalities are present with the trigone or proximal urethra, and there is no evidence of cystoliths, polyps or a mass. Trivial sediment is noted.

The left kidney is decreased in size (2.16 cm). The capsule is smooth. The cortex is moderately to severely hyperechoic. A moderate to marked loss of the normal architecture is present. Diffuse mineralizations of the diverticulae are present without evidence of nephroliths or pyelectasia. Obvious hydroureter is not observed. The surrounding mesentery is mildly to moderately hyperechoic.

The right kidney is decreased in size (3.53 cm). The capsule is deformed by a significant depression. The appearance of the kidney is suggestive of an ischemic infarct and/or insult with fibrosis. The cortex is severely hyperechoic (more so than the left) and a marked loss of normal architecture is observed. Multiple punctate mineralizations are noted along the cortico-medullary junction, in addition to mineralization of the diverticulae and pelvis. Some of the mineralizations cast a shadow, i.e. small nephroliths are present. No obvious evidence of pyelectasia is observed, however, it is difficult to follow the entire pelvis due to the acoustic shadowing caused by the nephroliths. The surrounding mesentery is hyperechoic.

Adrenal Glands

The left adrenal gland measures 0.35 cm x 0.71 cm. No abnormalities are noted with the gland's shape, overall architecture, echogenicity or echotexture. The phrenico-abdominal vein and surrounding vasculature and mesentery are unremarkable.

The right adrenal gland measures 0.38 cm. No abnormalities are noted with the gland's shape, overall architecture, echogenicity or echotexture. The phrenico-abdominal vein and surrounding vasculature and mesentery are unremarkable.

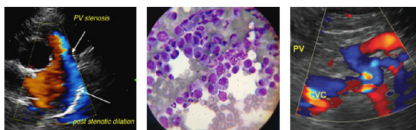
Spleen

The spleen is within normal limits in architecture, echotexture, and echogenicity, and the capsule is smooth. However, it appears smaller than normal, measuring 6.5 mm, i.e., hypovolemia is suspected.

Liver

There are no obvious signs of hepatomegaly and its borders are smooth and sharp. The liver's echotexture is mildly coarse and granular. It is within normal limits in echogenicity.

In the right transverse view of the liver, an intrahepatic mass is observed, measuring 2.7 cm in diameter x 3.30 cm in length. Multiple cavitory lesions filled with anechoic fluid and surrounded by a thin hyperechoic capsule are observed. The lesions are highly suggestive of cysts. No abnormalities are observed with the hepatic vessels.

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The gall bladder wall is within normal limits in thickness and echogenicity. Trivial sludge is present. The cystic and common bile ducts are not dilated or tortuous.

Gastrointestinal**SPECIES**

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The gastric wall and pylorus are within normal limits in thickness. There is no loss of definition of the normal architecture of the wall layers. Food is present within the stomach. No obvious abnormalities are observed with its peristalsis.

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The small intestinal wall thickness, including the duodenum, is within normal limits and the definition of the wall layers is preserved. Food is present in the stomach. Dilated loops of bowel are not observed.

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The ileocecolic (ICC) junction is within normal reference range. The lymph nodes within the area of the ICC junction are visualized and considered slightly prominent compared to normal. Their appearance is suggestive of lymphoid hyperplasia.

The colonic wall is not thickened and mural detail is considered normal. There are no obvious signs of a mass, foreign body, infiltrative disease or an obstruction.

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Pancreas

The portion of the right pancreas visualized does not show any abnormalities.

The left limb of the pancreas is mildly, but diffusely hypoechoic. The surrounding mesenteric fat is hyperechoic, suggestive of saponification. These findings are suggestive of pancreatitis. There are no overt signs of neoplasia.

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Other

Abdominal effusion is not visualized.

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ACVIM**ULTRASONOGRAPHIC FINDINGS****IMAGING PERFORMED BY**

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- The renal changes may be in part due to age related degeneration. However, pyelonephritis is suspected in addition to mineralization and small nephroliths. An obvious obstruction is not identified, however, these may not be observed on ultrasound. An evaluation of the retroperitoneal space on the lateral abdominal radiograph may be performed to ensure a ureterolith is not present (they can be rather small and difficult to see, particularly if stool is in the colon).
- High index of suspicion of pancreatitis.
- The hepatic changes are suggestive of a mild reactive hepatopathy. Secondary hepatic lipidosis cannot be excluded based on the hyporexia despite the absence of increased echogenicity.
- Hypovolemia appears to be present based on the size of the spleen.
- Differential diagnoses for the hepatic mass include a cystadenoma or cystadenocarcinoma. Cystadenomas are more common and are benign. Fine needle aspirates cannot always differentiate the two, therefore, a biopsy is usually necessary to achieve a definitive diagnosis. The latter is invasive and not recommended in Lily's case. These cystic lesions can, at times, cause discomfort due to distention of the hepatic capsule and drainage of the cysts may be performed. Treatment for pancreatitis and pyelonephritis are the more likely causes of Lily's hyporexia and a fine needle aspirate is *not* considered necessary for the moment. As previously mentioned, a biopsy is required to achieve a definitive diagnosis, however, the appearance of Lily's mass is somewhat "organized" and concentrated in one area, which may be more suggestive of a cystadenoma.

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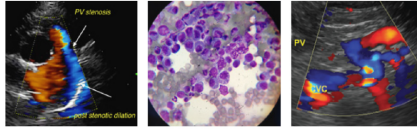
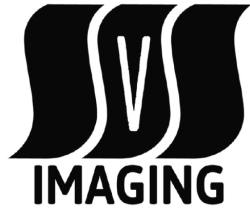
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INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

Some of the following recommendations may change pending the results of the urine culture and sensitivity:

Evaluation of the conformation of Lily's vulva and perivulvar region is recommended. Basic hygiene should be pursued on a daily basis with 0.025-0.05% chlorhexidine, ensuring the area is kept dry to decrease risk of infection. Any fur in the surrounding area should also be trimmed to decrease risk of bacterial wicking.

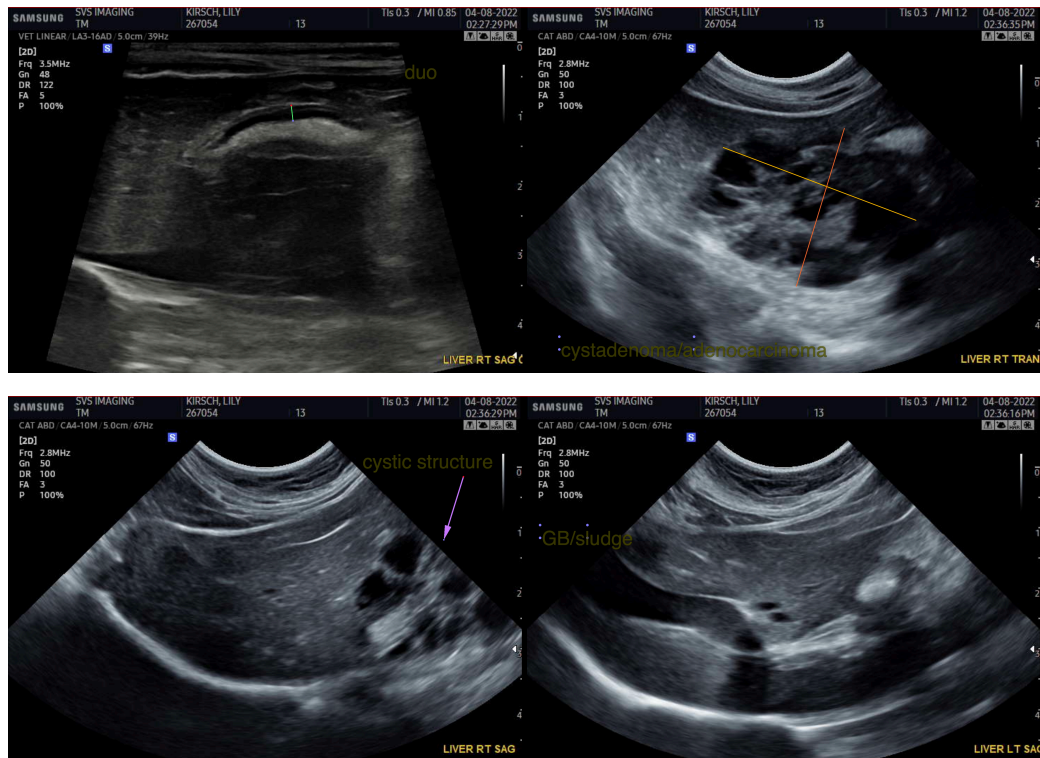
A fundic exam is recommended. An evaluation of the blood pressure, ideally in the presence of the client to minimize the effects of stress, is suggested.

Treatment for pancreatitis is suggested, including analgesia for visceral pain, such as buprenorphine, is suggested, as well as supportive care, including intravenous fluids. Analgesia will also help treat pain associated with pyelonephritis.

As previously mentioned, a FNA of the hepatic mass for diagnostic purposes is not suggested at the moment, but may eventually be considered if there is a concern that it may be causing discomfort due to stretching of the hepatic capsule.

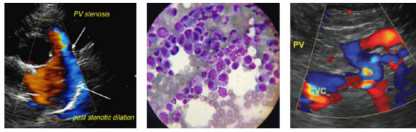
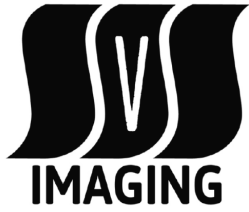
A re-evaluation of the hepatic mass in 4-6 weeks may be performed, at which time the kidneys and pancreas may also be re-assessed.

Lily is a complicated patient, and although some treatment recommendations have been described, an internal medicine consult is suggested in order to describe all possible options in further detail, particularly following results of the urine culture. This may be done by telephone or email.



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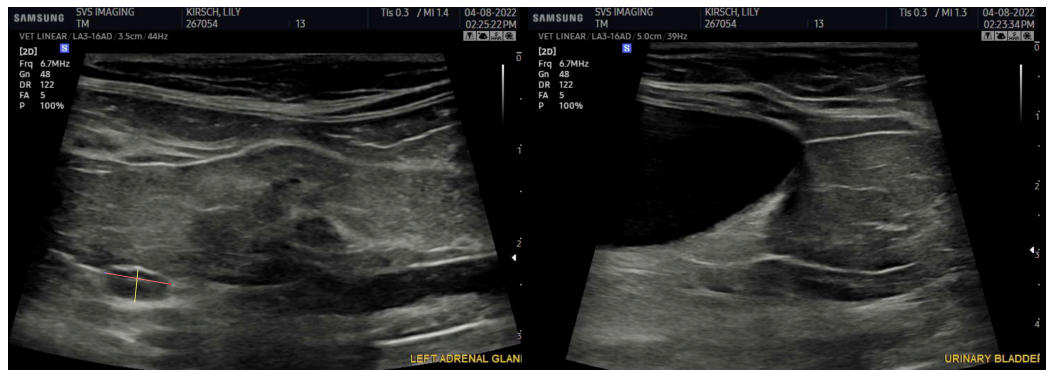
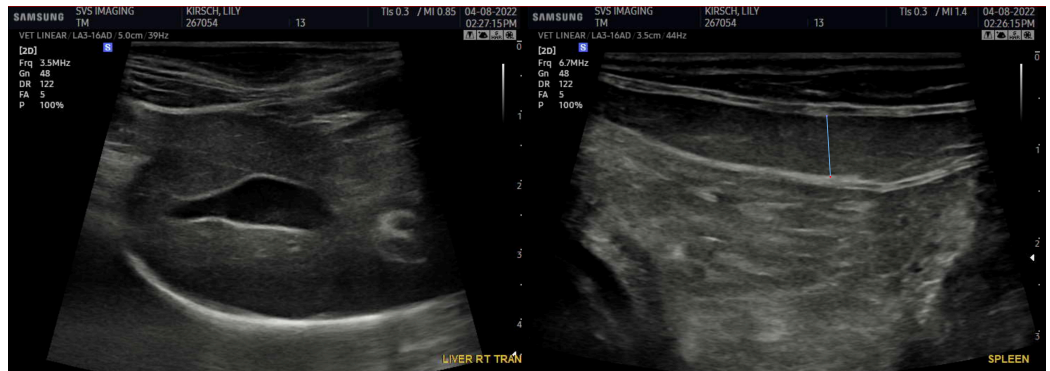
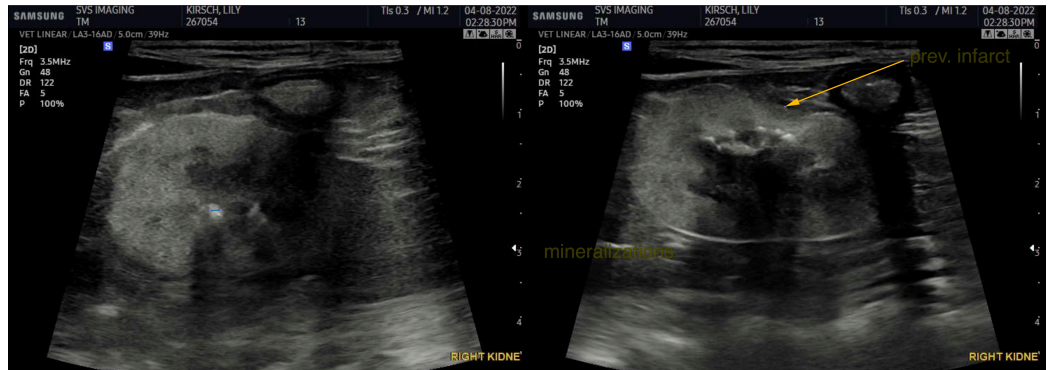
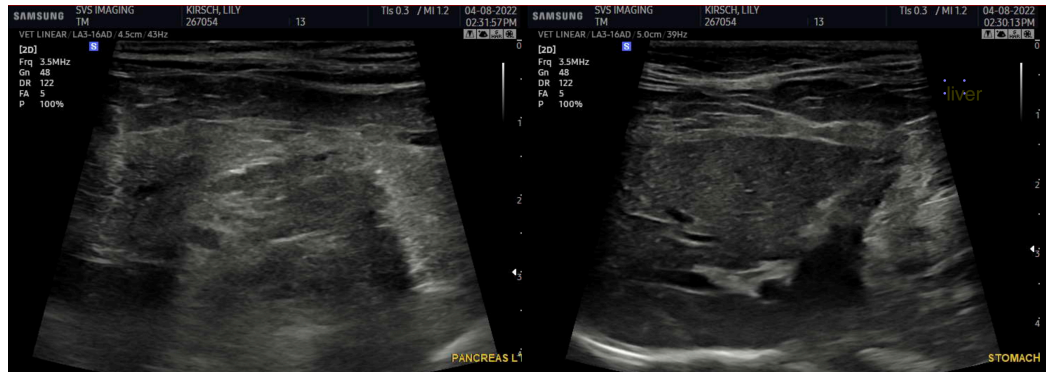
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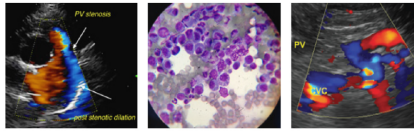
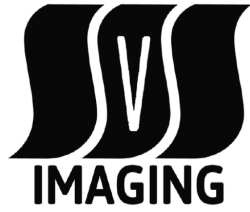
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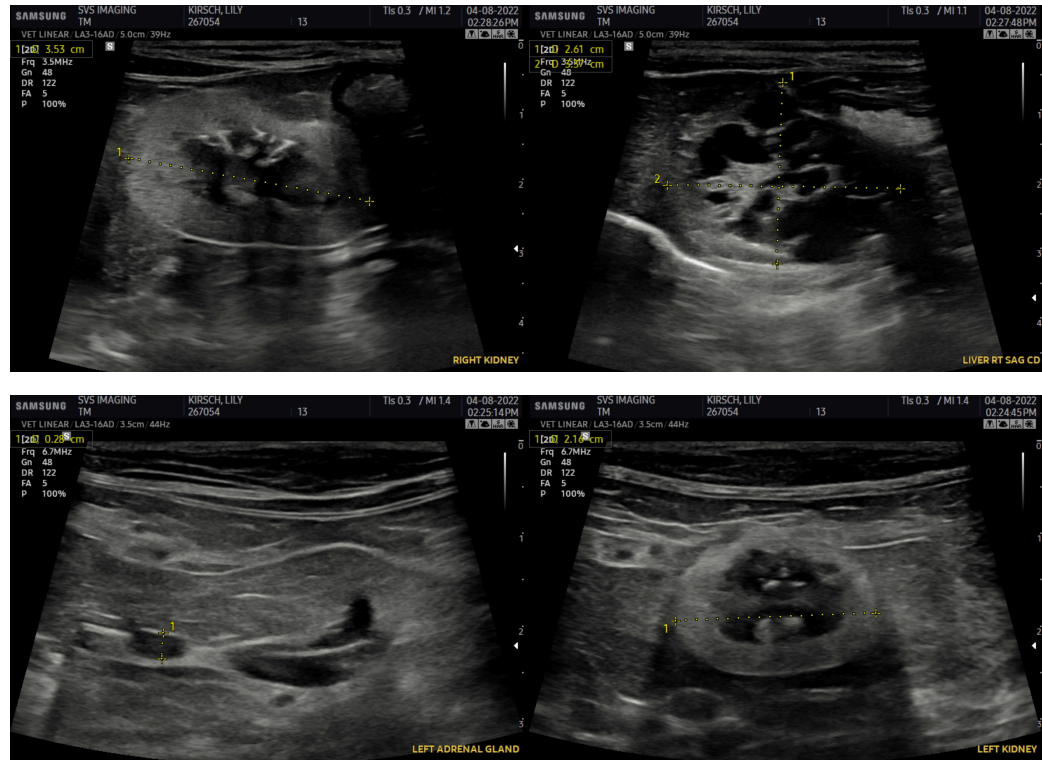
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The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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.

Lisa Carioto, DVM, DVSc, Diplomate ACVIM

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