

**PATIENT**

Arnold Sims

SPECIES

Feline

BREED

Domestic Shorthair

SEX

Neutered male

AGE

Unknown

WEIGHT

12 bs

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

Amy Mayhew LVT

HOSPITAL NAME

SVS Imaging Michigan

REFERRING VETNorth Oakland
Vissiting Vet**INVOICE**

31292

DATE

1/27/20

PRESENTING CLINICAL SIGNS

History: Found as stray one month ago, diabetic (on insulin), pu/pd, polyphagic, vomiting.
 Abnormal PE/Chem/CBC/UA Results: See attached urine. Today's BG was ~500.

ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN**Urinary System**

The **urinary bladder** is well distended with anechoic contents. 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.

Kidneys

The **left kidney** measures 5.82 cm (3.80-4.40 cm), marked renomegaly. The capsule is smooth, however the cortex is severely hyperechoic and thickened (0.85 cm). A loss of the normal definition of the cortico-medullary junction is present. Very mild pyelectasia is present (0.17 cm). The surrounding mesentery is severely hyperechoic.

The **right kidney** measures 6.48 cm (3.80-4.40 cm), very severe renomegaly. The capsule is smooth. The cortex is markedly hyperechoic. A loss of the normal definition of the cortico-medullary junction is present and mild pyelectasia is noted (0.15 cm). The surrounding mesentery is not hyperechoic.

Aortic bifurcation/trifurcation

No abnormalities observed.

Adrenal Glands

The **left adrenal gland** measures 0.53 cm at the cranial pole, 0.46 cm at the caudal pole and 1.45 cm in length. Adrenomegaly with mild hypoechogenicity. The phrenico-abdominal vein and surrounding vasculature and mesentery are unremarkable.

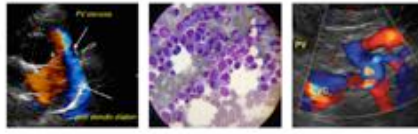
The **right adrenal gland** measures 0.54 cm. Adrenomegaly with mild hypoechogenicity. The phrenico-abdominal vein and surrounding vasculature and mesentery are unremarkable.

Spleen

The spleen is within normal limits in size 7.6 mm (normal = 10 mm), echotexture, and echogenicity. The capsule is smooth. No abnormalities are observed with its vasculature, i.e. congestion and thrombi are not identified.

Liver

Mild hepatomegaly is suspected. The liver's borders are smooth, and mildly rounded. It is diffusely and markedly hyperechoic. Anechoic structures in the shape of lacunae are observed, in the region of a well-

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circumscribed cystic structure. The latter measures 1.29 cm in diameter x 1.53 cm in length. No abnormalities are observed with the hepatic vessels.

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The **gallbladder** (GB) wall is within normal limits in thickness and echogenicity. A small amount of free floating aggregated and inspissated echogenic material is present within the GB. A small amount of anechoic fluid is observed surrounding the GB. The portions of the cystic and/or common bile ducts observed are not dilated or tortuous, i.e. there are no signs of an obstruction. The parenchyma surrounding the GB is hyperechoic.

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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.

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Duodenum: thickened (0.31 cm), with fogging of the mucosa.

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Small intestines: 0.27 cm, 0.28 cm (thickened). The definition of the wall layers is preserved, however, moderate fogging of the mucosa of some segments of the jejunum is present, in addition to mild fogging of the muscularis. Abnormally dilated loops of bowel are not observed. The mesentery surrounding the GI tract is severely hyperechoic.

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The colonic wall is not thickened, but at the high end of the normal reference range. Mural detail is considered normal. Soft stools and gas are present within the colon.

Pancreas**INTERPRETED BY**Lisa Carioto, DVM,
DVSc, Diplomate
ACVIM

Severe hypoechogenicity of the pancreas surrounded by a markedly hyperechoic omentum. Hypoechoic nodules of variable size are observed scattered throughout the pancreas, suggestive of nodular hyperplasia. Abnormalities are consistent with active pancreatitis.

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Other**Lymph nodes**

Mild lymphadenomegaly of a few LNs in the region of the ICCJ (0.72 cm in diameter), with moderate to marked hypoechogenicity surrounded by a markedly hyperechoic mesentery.

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Abdominal effusion

A small amount of anechoic fluid is observed surrounding the GB.

REFERRING VETNorth Oakland
Vissiting Vet**Omentum/mesentery**

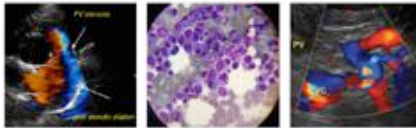
Multiple hypoechoic nodules of variable size are noted scattered throughout the omentum, which is severely hyperechoic.

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ULTRASONOGRAPHIC FINDINGS

- **Pancreas:** Signs of active pancreatitis are evident. However, underlying exocrine pancreatic insufficiency cannot be excluded as a secondary complication of pancreatitis.
- **Gastrointestinal tract and lymph nodes:** High index of suspicion of infiltrative disease, such as lymphoma. However, diffuse inflammation due to an underlying chronic enteropathy, such as inflammatory bowel disease (IBD) cannot be excluded. Lymphadenomegaly is mild; both reactive hyperplasia and neoplastic infiltration are possible differential diagnoses. One cannot differentiate the two without performing a fine needle aspirate.
- **Mesentery:** Diffusely hyperechoic mesentery, which is consistent with a diffuse inflammatory process, including pancreatitis, cholangitis/cholangiohepatitis and IBD or infiltrative disease.
- **Liver and Gallbladder:** Hepatic lipidosis due to diabetes mellitus is suspected. Cholestasis and cholangitis/cholangiohepatitis are also likely present. The cystic structure is highly suggestive of a cystadenoma. A cystadenocarcinoma is considered less likely. The small amount of gallbladder sludge is most likely clinically insignificant. There are no obvious signs of cholecystitis.
- **Kidneys:** Renomegaly and pyelectasia may occur with pyelonephritis, as well as lymphoma. Feline infectious peritonitis is another possible differential diagnosis. Polydipsia and polyuria, alone may cause pyelectasia, however, it should not cause the other abnormalities observed.
- **Adrenal glands:** Lymphoma must be considered as a cause of both the bilateral adrenomegaly and hypoechogenicity of the glands, particularly in a cat.
- **Ascites:** Differential diagnoses include extravasation/increased permeability, vasculitis, etc.

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

Fine needle aspirates of the lymph nodes, liver and kidneys are suggested, pending a coagulation profile.

vitamin K (0.5 mg/kg SQ q8-12h) is recommended, even if the coagulation profile is within normal limits, i.e., cholestasis likely

Urinalysis and urine culture and sensitivity

Thoracic radiographs (three-views) to assess sternal lymph nodes and lungs.

Differential diagnoses include cholecystitis, cholangitis/cholangiohepatitis, and secondary ascending bacterial infections. Although indiscriminate use of antibiotics is not recommended, one could consider broad-spectrum antibiotic.

Although not ideal, cefovecin (Convenia) may be tried, i.e., avoids GI tract. Discussion with the client that this is not necessarily an ideal drug. If improvement observed, at least 2 additional doses 10-12 days apart recommended.

+/- spec fPL, cobalamin, folate

+/- supplementation with cobalamin



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Referral to an oncologist may be required depending on the cytology results.

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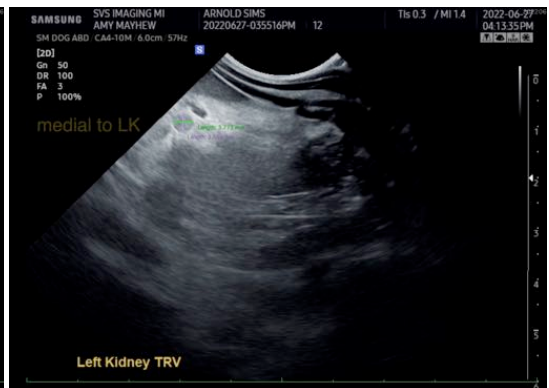
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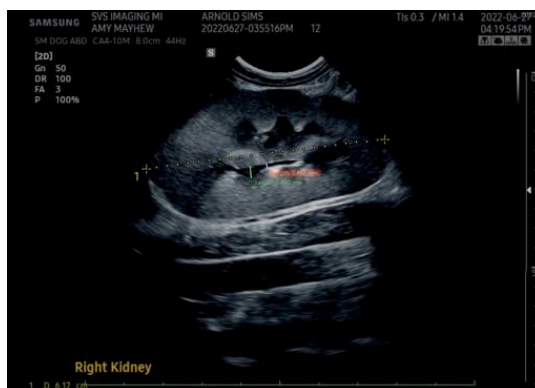
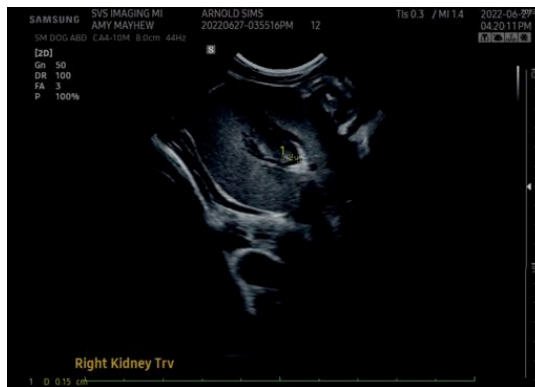
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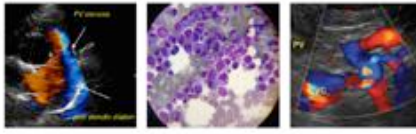
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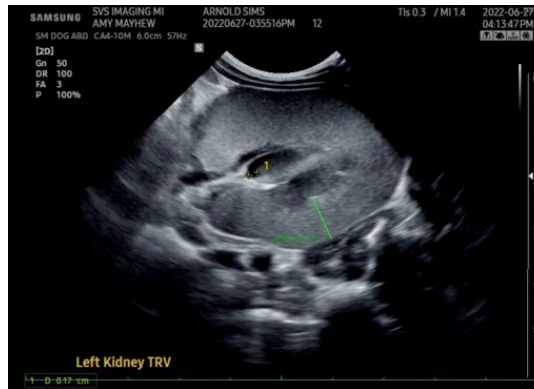
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The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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

Lisa.Carioto@sonopath.com