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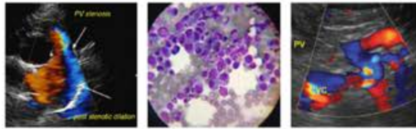
fredgromalak@gmail.com



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PATIENT
Cisco Avery

SPECIES
Feline

BREED
DSH

SEX
Spayed Female

AGE
6 Years 6 Months

WEIGHT
4.6 kg

INTERPRETED BY
Lisa Carioto, DVM, DVSc, Diplomate ACVIM

IMAGING PERFORMED BY
Tom McNeill

HOSPITAL NAME
SVS Imaging CT

REFERRING VET
WVRC – Dr. Bianco

INVOICE
39903

DATE
7/28/22

PRESENTING CLINICAL SIGNS

Cisco presented to WVRC's Emergency Service on 7/27/2022 for evaluation of intermittent vomiting and hematochezia since 7/19/22, and increased thirst (starting 7/26/22). Originally, on 7/19/22 and 7/20/22, the owner came home from work and found multiple piles of vomit around the house. The vomitus was a mix of food and bile. 7/21/22 and 7/22/22, the owner has also seen some small piles of what looks like diarrhea. Those piles are dark brown with some spots of bright red blood. Cisco maintained a good appetite and energy levels throughout. However, every time she eats, she vomits up the food shortly after. She has also started to vomit water after drinking. The owner attempted a bland diet for two days that Cisco seemed to tolerate it well. The owner started to transition her back to her normal science diet kibble and she started to vomit the dry food back up. Cisco was then evaluated at WVRC on 7/23/22. AXR, CBC, Chem were run and unremarkable. Cisco was sent home with metronidazole, fortiflora, SQF, and an injection of maropitant. Cisco did well at home for 2 days, before her hematochezia and vomiting reoccured on 7/2/26/22. She was now also noted to have increased thirst and would vomit water and foam after drinking water. Cisco became uninterested in food.
Abnormal PE/Chem/CBC/UA Results: AXR: Good serosal detail. There is a mild amount of gas and fluid in the stomach. There is gas and fluid in the small intestines with no specific dilation. The colon appears empty. The liver, spleen, urinary bladder and kidneys are unremarkable. --> Unremarkable abdomen. No obvious obstructive pattern. Heska CBC: WBC 33.84 (H), Neut 22.2 (H), Eos# 6.1 (H), Eos% 18.1 (H), all other values WNL Interpretation: stress leukogram, eosinophilia Heska Chem/lytes: Ca 8.3 (L), Glu 146 (H), all other values WNL Interpretation: no clinically significant findings

ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN

Urinary System

The **urinary bladder** is adequately distended. The wall is smooth and regular. No abnormalities are present with the trigone or proximal urethra. A small amount of free floating sediment is present, however, there is no evidence of cystoliths, polyps or a mass.

Kidneys

The **left** kidney measures 3.46 cm (3.80-4.40 cm), mildly decreased in size, however, the capsule is smooth. Its overall architecture, including the definition of the cortico-medullary junction, is preserved. There are no signs of nephroliths or pyelectasia. The surrounding mesentery is not hyperechoic.

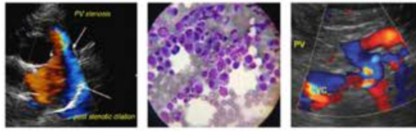
The **right** kidney measures approximately 3.64 cm (3.80-4.40 cm), mildly decreased in size, however, the capsule is smooth. Its overall architecture, including the definition of the cortico-medullary junction, is preserved. There are no signs of nephroliths or pyelectasia. The surrounding mesentery is not hyperechoic.

Aortic bifurcation/trifurcation No abnormalities observed.

Adrenal Glands

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

The **right** adrenal gland measures 0.65 cm. Although no abnormalities are noted with the gland's overall architecture, echogenicity or echotexture, it is enlarged for a cat and there is a significant discordance between the size of the right and left glands. The phrenico-abdominal vein and surrounding vasculature and mesentery are unremarkable.



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Spleen

The spleen is within normal limits in size 9.5 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, however, this is better characterized at the time of the ultrasound or radiographically. The liver's borders are smooth and sharp. It is homogeneous and no abnormalities are observed with its echotexture or vascularization.

The gallbladder wall is within normal limits in thickness and echogenicity. A small amount of echogenic material is present within the GB. The cystic duct can be followed along its length; it is mildly dilated, but not tortuous. A small amount of sludge is present within the cystic duct. Common bile duct dilation is not appreciated (0.32 cm).

Gastrointestinal

The gastric wall is within normal limits in thickness and the wall layers are well defined. However the muscularis layer is more prominent than usual. Subjectively, the submucosa is also more prominent. No obvious abnormalities are observed with its peristalsis.

Duodenum: A mass, measuring approximately 1.98 cm in diameter is noted in the proximal duodenum (it measures 1. Xxx cm x 2.02 cm in another view). The duodenum immediately distal to the mass is thickened at 0.36 cm and 0.30 cm, with thickened muscularis and prominent mucosal layers. The duodenal papilla is approximately 0.26 cm distal to the mass.

Jejunum: The muscularis layer is diffusely thickened throughout the jejunum, in addition to fogging of the mucosa.

Ileum: The deep mucosal layer of the ileum is focally and severely thickened (0.21 cm) and hypoechoic, while the muscularis is also thickened (0.11 cm). The abnormal region is at least 3.9 cm in length. An obvious reason for this localized finding is not visualized.

The colonic wall is not thickened, but at the high end of normal. Mural detail is conserved. There are no signs of neoplasia.

Pancreas

No overt abnormalities are observed with the architecture, contours, echogenicity or echotexture of the **left limb** of the pancreas. However, the **right limb** is severely enlarged, hypoechoic and has irregular borders, i.e., it appears edematous and suggestive of active pancreatitis, despite the absence of a hyperechoic mesentery surrounding the pancreas.

Other

Lymph nodes

Gastric lymph nodes: Enlarged, rounded ("plump") and mildly hypoechoic (1.14 cm in diameter x 1.25 cm in length). Another measures 0.45 cm in diameter x 0.95 cm in length.

Ileo-cecal-colic lymph nodes: prominent and mildly hypoechoic

Abdominal effusion is not visualized.

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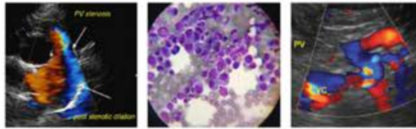

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ULTRASONOGRAPHIC FINDINGS

- **Gastrointestinal (GI) tract**: Lymphoma or other round cell tumour should be considered for the duodenal mass, diffusely thickened muscularis of the jejunum and abnormally thickened ileum. An infectious cause, such as granulomatous disease (FIP) or fungal disease, cannot be excluded depending on Cisco's living conditions. Segmental feline sclerosing enteropathy or an idiopathic sterile inflammatory-type lesion must also be considered based on Cisco's young age.

- **Lymph nodes**: Differential diagnoses include both reactive hyperplasia based on the small size of the ileo-cecal-colic lymph nodes and one of the smaller gastric lymph nodes, however, a larger gastric lymph node is observed, and infiltration with neoplastic cells must be considered.

- **Pancreas**: Signs consistent with inflammation of the right limb, which is attributed to the duodenal mass, rather than a "true" pancreatitis. However, this does not preclude the presence of pain.

- **Adrenal glands**: Although no abnormalities are noted with the gland's overall architecture, echogenicity or echotexture, the right gland is enlarged for a cat and there is a significant discordance between the size of the right and left glands. Neoplasia must be considered as a cause for adrenomegaly of the right gland (e.g., lymphoma).

- **Urinary bladder**: The debris is most likely clinically insignificant and composed of mucus, crystalline material and exfoliated cells. However, clinical findings should be correlated with a urinalysis.

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

Fundic exam to evaluate for granulomas or other findings suggestive of infectious diseases.

Evaluate for uveitis (aqueous flare)

Fine needle aspirates of the larger lymph nodes and duodenal mass may be performed, however, the client should be informed of the possibility of a non-diagnostic result. It is the least invasive means of trying to obtain a diagnosis.

An exploratory laparotomy to obtain a tissue biopsy of the duodenal mass and biopsies of the ileum, particularly the abnormal region, and other areas of the intestines and enlarged lymph nodes, without therapeutic intervention may be pursued.

Depending on how aggressive the clients would like to be, one could refer to both a board certified surgeon and oncologist to discuss options regarding biopsies and an oncologist to discuss possible treatment protocols.

Other options include referral to an internist or surgeon who perform minimally invasive procedures and the placement of a covered stent and post operative chemotherapy depending on the diagnosis.

If further diagnostics are not pursued, yet empirical therapy would like to be attempted, one could treat with a tapering dose of prednisolone, +/- chlorambucil, with the goal of treating the duodenal mass as lymphoma. This should only be performed if Cisco has been dewormed (fenbendazole) and there is no history of travel or risk of exposure to parasites or infectious diseases such as pythiosis or fungal organisms (*Histoplasma* spp., etc.).

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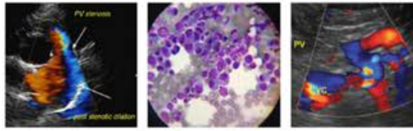

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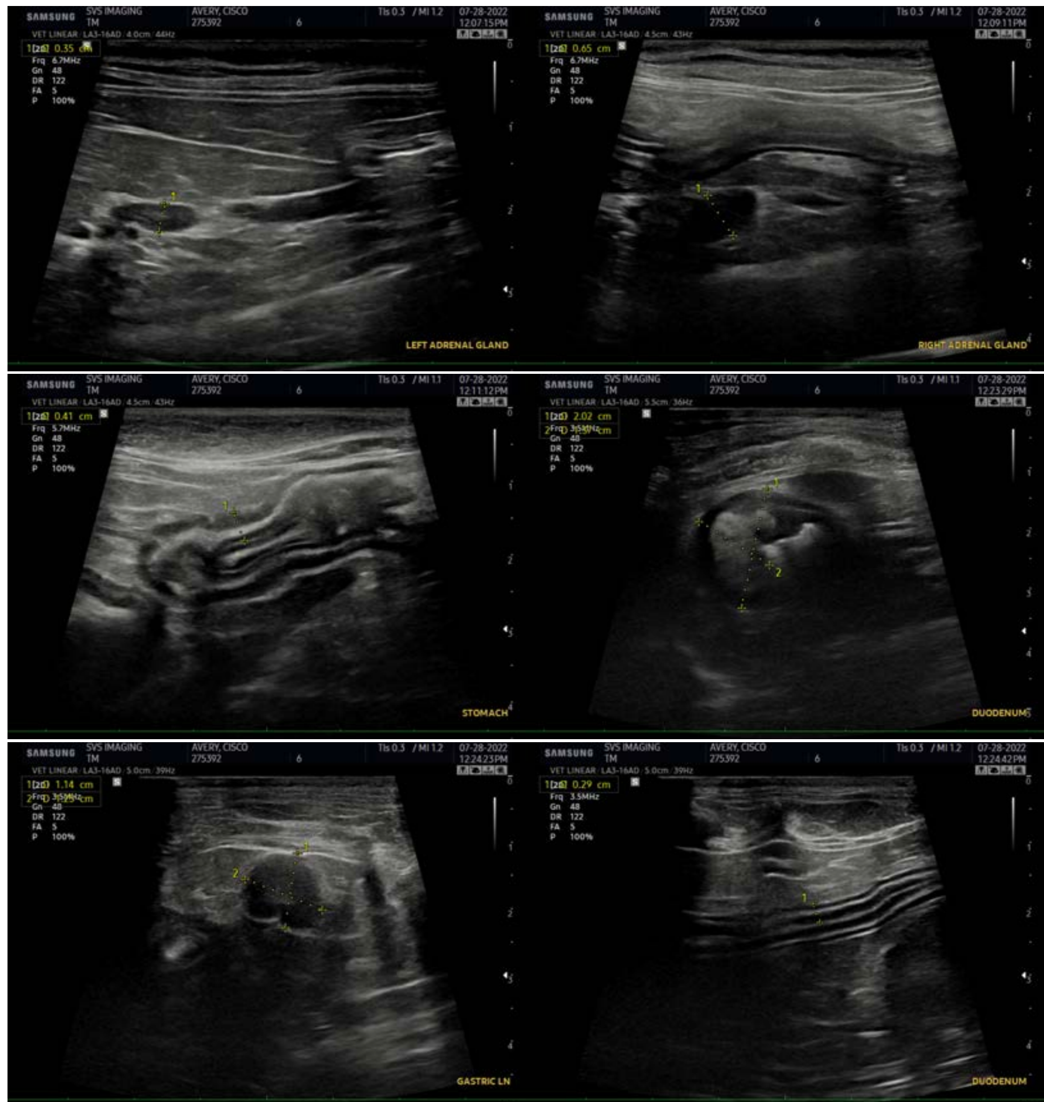
Analgesia (buprenorphine (0.005-0.01 mg/kg, sublingually, every 8-12 hours) with or without gabapentin. Continue for 3-4 weeks, or longer, as needed.

Treatment of nausea

Small, frequent meals, ideally, consisting of a slurry

Urinalysis, +/- urine culture and sensitivity



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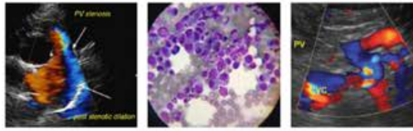

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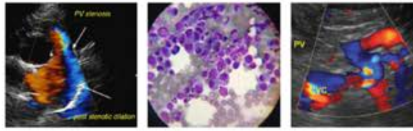

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The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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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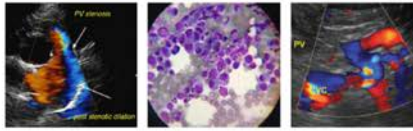

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