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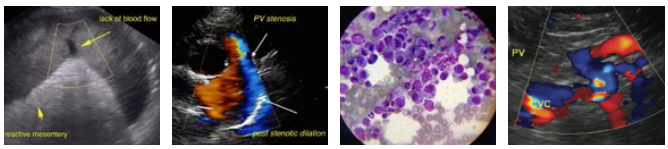

PATIENT

Zeus Robar

SPECIES

Feline

BREED

Domestic Shorthair

SEX

Neutered male

AGE

15 years

WEIGHT

3.1 kg

INTERPRETED BY

Dr Brittany Sinclair, BVSc(hons), DACVECC

IMAGING PERFORMED BY

Dr. Sharma

HOSPITAL NAME

Edmonton West Animal Hospital

REFERRING VET

Dr. Kaur

INVOICE

43433

DATE

3/21/23

PRESENTING CLINICAL SIGNS

History: Indoor patient, PU PD since last several weeks. chronic vomiting (weekly or so). Patient is still eating, No diarrhea, coughing or sneezing. Concern for CKD, and Pancreatitis so abdominal scan was performed. Patient was started on IV fluids before scan (for almost 3 hrs) Patient was sedated with low dose Dexmedetomidine, torb and midazolam
Abnormal PE/Chem/CBC/UA Results: BCS- 3/9, Dehydrated. SDMA 30 (0-14), Urea >46.4 (5.7-12.9), Cre 836 (71-212), phos 4.73 (1-2.42), Glob 53 (28-51), TP 92 (57-89), Amy >2500 (500-1500), lipase 5500 (100-1400), Na 4.2 (3.5-5.8) Fpli Snap test- abnormal U/A -SG 1.013, Pro 30mg/dl, otherwise NAF T4 9 (10-60) CBC-Moderate Non Reg anemia, RBC 3.82 (6.54-12.2), HCT 18.5 (30.3-52.3), HGB 5.7 (9.8-16.2), WBC 18.08 (2.87-17.02), Eos 0.05 (0.17-1.57), Lym 8.84 (0.92-6.88), Mono 2.23 (0.05-0.67), Band- suspected Felv FIV negative Urine culture-pending NSF in three view thoracoabdominal rads All reports and xrays attached

ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN

Urinary System

The urinary bladder, trigone, and visible pelvic urethra were of normal thickness. The ureters were not visible which is normal. There was normal wall layering with no masses, uroliths or abnormal thickening visualized. Urine was anechoic. No evidence of inflammatory or neoplastic changes were noted.

The kidneys have a smooth capsule and with hazing of corticomedullary definition to the point of inability to determine cortical/medullary ratio. Right and left pelvises are mildly dilated measuring 0.81mm and 1.2mm respectively. Left kidney is significantly smaller than right. This may reflect left renal atrophy and/or right renal hypertrophy. The left kidney measured 3.0 cm and the right kidney measured 4.5 cm.

Adrenal Glands

Left adrenal gland was visualized and recognized as having normal shape, size, position and echogenicity for this breed. The phrenic vasculature, glandular echogenicity and detail were unremarkable. Capsule, cortex, and medullary definition were normal for this age patient. The right adrenal gland was not definitively visualized. The left kidney measured 1.1 cm in length x 0.33 cm at the caudal pole and 0.34 cm at the cranial pole.

Spleen

Spleen has a generally slightly irregular capsule which is a common aging change. There is a distinct bulge in the spleen measuring 1.67 x 1.89cm which is spherical in appearance and does not have the typical appearance of the head of the spleen. The parenchyma is uniform to the remainder of the spleen.

Liver

The liver is subjectively normal in size with slightly irregular contours and normal structure. The parenchyma is slightly heterogenous with a coarse appearance. Vascular and biliary tracts are of normal volume with no evidence of congestion. No pathological hepatic lymphadenopathy observed. . Gallbladder is moderately distended with normal wall thickness and anechoic contents. Common bile duct is non-distended and tapers normally

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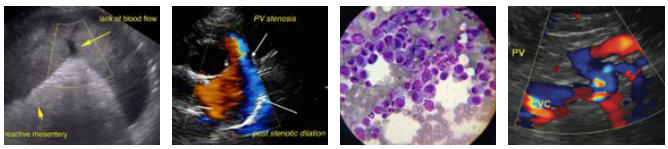

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Gastrointestinal

Focal loops of small intestine measured slightly thickened with normal wall layering. Other bowel loops measured within normal limits. Bowel loops follow a curvilinear path with distinct wall layering. There were no focal lesions consistent with obstruction or a mass effect observed.

The stomach contains ingesta. It measures at a normal thickness of with some variability due to the presence of rugal folds. The distinction of the gastric wall layers is adequate and there is no impression of reduced peristaltic activity. No masses or focal lesions were observed.

The ileocecal junction was visualized and exhibited normal intact wall layering and is subjectively of normal thickness.

Sections of colon are visualized with formed fecal material and gas shadowing distally. There is no observed focal or generalized colon wall thickening or loss of layering.

Pancreas

Pancreas left limb and body are enlarged and hypoechoic with surrounding hyperechoic mesentery. No fluid accumulations visualized. No mass effect consistent with pancreatic neoplasia visualized. Right limb of pancreas appears normal with no surrounding hyperechoic mesentery.

Lymph Nodes

No clinically significant lymphadenopathy or abnormalities noted.

Free Abdomen

No masses or free fluid were noted.

ULTRASONOGRAPHIC FINDINGS

Primary Findings

1. Splenic mass
2. Pancreatitis – left limb and body
3. Small intestinal thickening with normal layering
4. Degenerative renal changes, disparity in renal size - right bigger than left
5. Coarse liver parenchyma

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

Splenic changes along with significant anemia is concerning for splenic mass with lymphoma, being a top differential. A benign hematoma, granuloma or inflammatory nodule remain possibilities. Splenomegaly secondary to extramedullary hematopoiesis from anemia is generally uniform rather than focal. Splenic aspirate is recommended to further characterize these changes.

Pancreatic changes are consistent with acute pancreatitis. Abnormal PLI, significantly elevated amylase and lipase, and clinical signs further support this diagnosis. Treatment for pancreatitis is supportive and involves fluid support, GI support (anti-nausea, appetite stimulant), analgesia and enteral nutrition.

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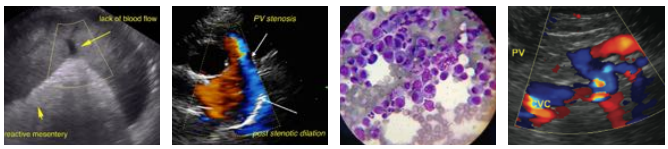

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Antibiotics are generally not warranted for acute pancreatitis as it is generally sterile. Serial imaging is indicated if clinical signs are not resolving to assess for possible progression to pancreatic abscessation or post hepatic bile duct obstruction.

Renal parenchymal changes likely represent age related degeneration. Very mild pyelectasia is likely secondary to reported IVF therapy prior to ultrasound study. The right kidney is on the upper limits of normal in size and left kidney is significantly smaller than right. This may reflect enlargement of the right kidney either due to acute nephritis, or less likely infiltration with neoplastic or inflammatory cells, or more likely chronic left renal atrophy and compensatory right renal hypertrophy. Given the concurrent azotemia, pyelonephritis cannot be excluded as a cause. Urine culture is recommended along with fluid therapy with serial monitoring of renal values to assess response. Chronic kidney disease is likely contributing to the non-regenerative anemia present in this patient.

Small intestinal thickening along with chronic vomiting is most consistent with infiltrative disease of the small intestine with inflammatory bowel disease or GI lymphoma being the top differentials. Mild acute enteritis secondary to pancreatitis is also a possibility given the mild nature of changes. No overt neoplastic criteria is present in the bowel given that curvilnear layering is still intact which would suggest inflammatory bowel as opposed to round cell neoplasia (LSA, MCT and similar). Intraoperative US-guided bx would be optimal in this patient to obtain the most representative samples in the GI tract. I cannot rule out a preneoplastic (LSA) state however and follow-up sonograms recommended especially If the patient is not responding to empirical efforts. Endoscopic biopsy is less invasive but may miss lesions due to inability to sample more than top 1-2 layers of GI tract and inability to obtain samples from all sections of the GI tract. Surgical biopsies are more likely to be diagnostic but are more invasive. A GI panel (PLI/cobalamin/folate) will help determine the severity of SI dysfunction, and need for vitamin supplementation.

Liver changes are a common benign age related change, but infiltrative disease (lymphoma, MCT, other) cannot be definitively ruled out. No significant disruption of architecture noted to suggest significant pathology. Fine needle aspirate could be considered to further characterize parenchymal changes if clinically indicated, especially if any weight loss is noted or for baseline cytological assessment. Non-pathologic portal vein dilation is commonly seen in pets sedated with dexmedetomidine due to mild passive congestion secondary to bradycardia and decreased cardiac output. In the absence of other signs of chronic hepatic congestion and lack of elevation in liver enzymes, I suspect this the cause of portal vein prominence in this study. Ileocolic lymph nodes appear within normal limits.

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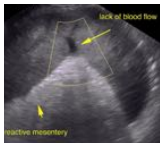
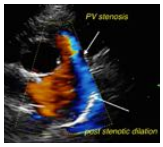
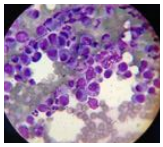
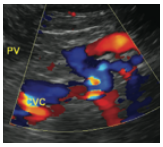

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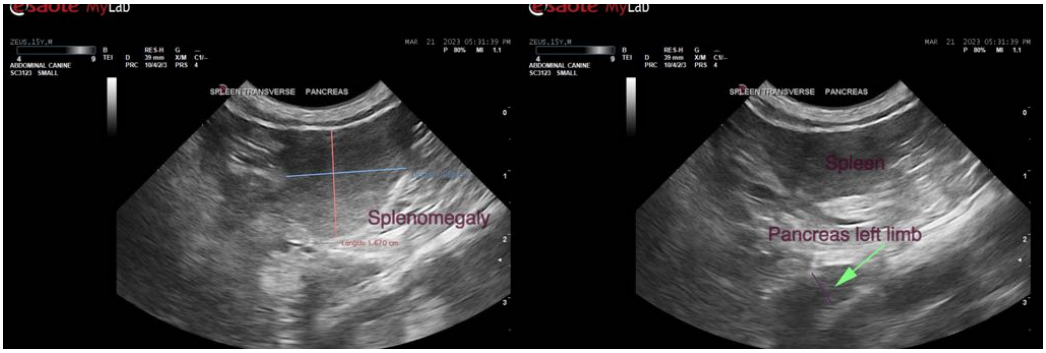

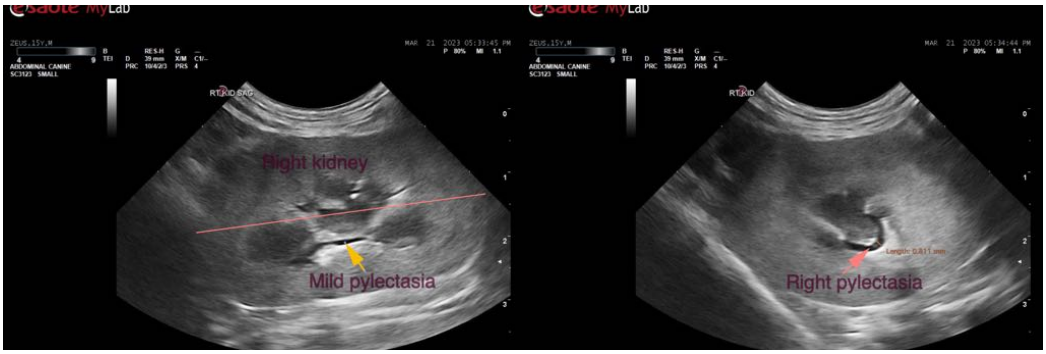

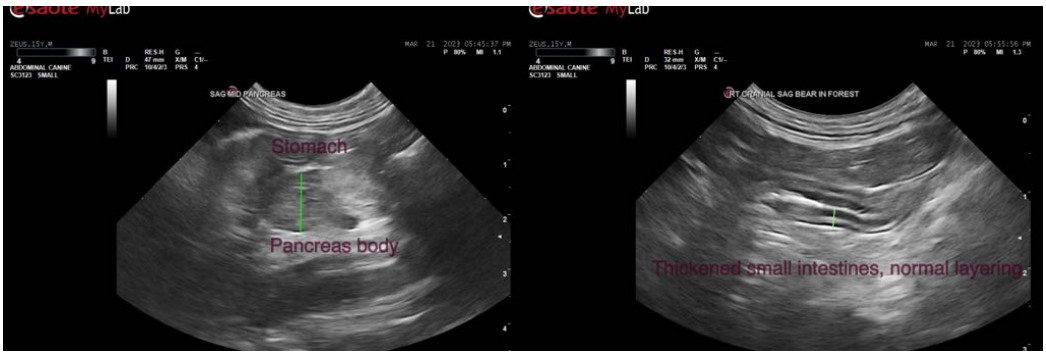

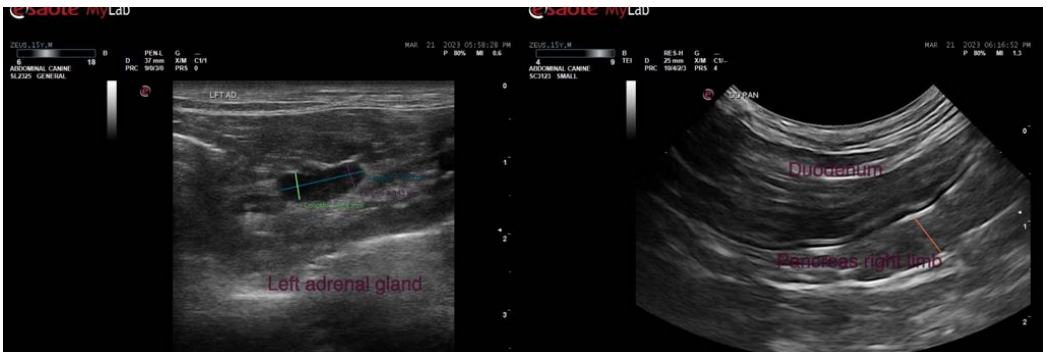

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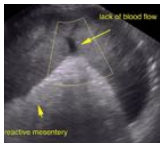
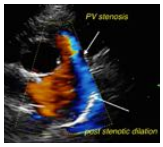
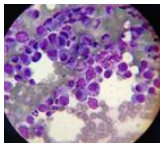
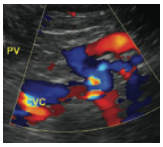

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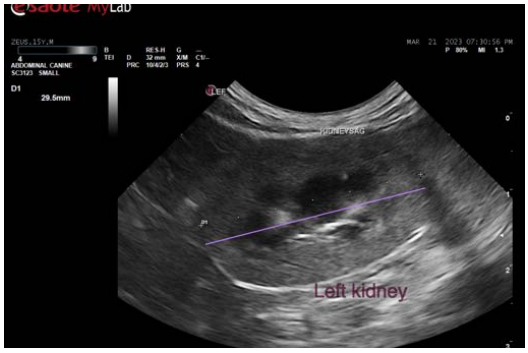

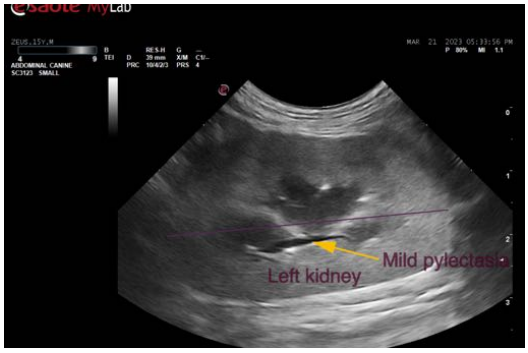

The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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.

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