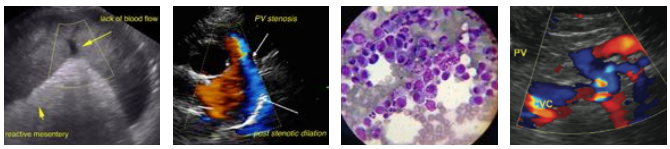

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1-800-838-4268 info@sonopath.com

PATIENT
Hope Kim

SPECIES
Canine

BREED
Yorkshire Terrier Mix

SEX
Spayed female

AGE
2 years

WEIGHT
5.2 lbs

INTERPRETED BY
Dr Brittany Sinclair, BVSc(hons), DACVECC

IMAGING PERFORMED BY
Kelly Vazquez , CVT

HOSPITAL NAME
Animal Paradise Hospital

REFERRING VET
Dr. ElShafie

INVOICE
44131

DATE
5/2/23

PRESENTING CLINICAL SIGNS

History: Patient presents for at least a 2 week history of decreased appetite and diarrhea. Owner reports patient is on probiotics at home.
Abnormal PE/Chem/CBC/UA Results: CPL abnormal. 4DX (neg.). WBC 31.83, neuts. 25.09, monos. 2.68, RBCs 4.74, HCT 33.3. HGB 12.6, amylase >2500, lipase >6000, Phos. 2.1, Ca 7.1, TP3.9, albumin 1.3.

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 were both normal size and structure, with smooth capsule and normal corticomedullary definition and ratio (cortex 1/3 of medulla). Medullary structure differed distinctly from that of the cortex. No evidence of pelvic dilation was present. The right kidney measured 2.5 cm. The left kidney measured 2.6 cm.

Adrenal Glands

Both adrenal glands were 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 left adrenal gland measured 1.02 cm in length and 0.39 cm at the cranial pole and 0.29 cm at the caudal pole. The right adrenal gland measured 1.03 cm in length, 0.39 cm at the cranial pole and 0.29 cm at the caudal pole.

Spleen

The spleen was normal with a smooth homogeneous parenchyma hyperechoic to liver and renal cortical parenchyma and smooth capsule, with normal splenic vasculature with no signs of congestion or thrombosis. No sonographic evidence of acute or chronic inflammatory, neoplastic, or infarct changes were noted.

Liver

The liver is subjectively normal in size with normal contours and structure. There is appropriate echogenicity and echotexture. No overt structural evidence of inflammatory, infiltrative or regenerative pathology is evident. 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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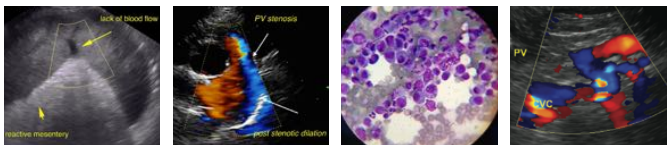

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Gastrointestinal

The stomach contains a small volume fluid and gas which partially obstructs visualization of contents. The walls are slightly prominent 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 visualized areas of duodenum, jejunum and ileum have a relatively uniform diameter with minimal fluid distension. Wall thickness is subjectively increased with bowel loops appearing prominent. Bowel loops follow a curvilinear path with distinct wall layering maintaining the typical 1:3 muscularis:mucosa layer ratio. Visualized peristalsis appears appropriate. There were no focal lesions consistent with obstruction or a mass effect observed.

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

Sections of colon are visualized with liquid fecal material in all sections of colon. There is no observed focal or generalized colon wall thickening or loss of layering.

Pancreas

Pancreas right limb is enlarged and hypoechoic with surrounding hyperechoic mesentary. No fluid accumulations visualized. No mass effect consistent with pancreatic neoplasia visualized.

Lymph Nodes

No clinically significant lymphadenopathy or abnormalities noted.

Free Abdomen

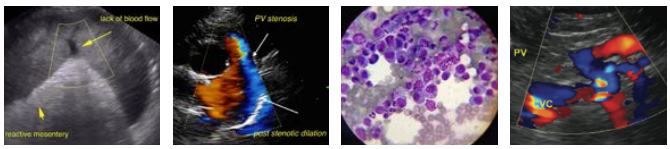
A scant amount of fluid was noted between the intestinal loops.

ULTRASONOGRAPHIC FINDINGS

1. Pancreatitis
2. Prominent gastric wall and small intestinal loops – gastroenteritis vs inflammatory bowel
3. Diarrhea in colon, normal colonic walls
4. Scant free fluid

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

Pancreatic changes are consistent with acute pancreatitis. Measurement of PLI is recommended to further support diagnosis. Scant free fluid is likely secondary to severe hypoalbuminemia. While severe pancreatitis is a possible cause of this protein loss, a more chronic underlying disease is more likely. Protein losing enteropathy is considered most likely based on imaging, though protein losing nephropathy or hepatic dysfunction should be ruled out with urinalysis and bile acid profile for completeness. A GI panel (PLI/cobalamin/folate) will help determine the severity of SI dysfunction, and need for vitamin supplementation.



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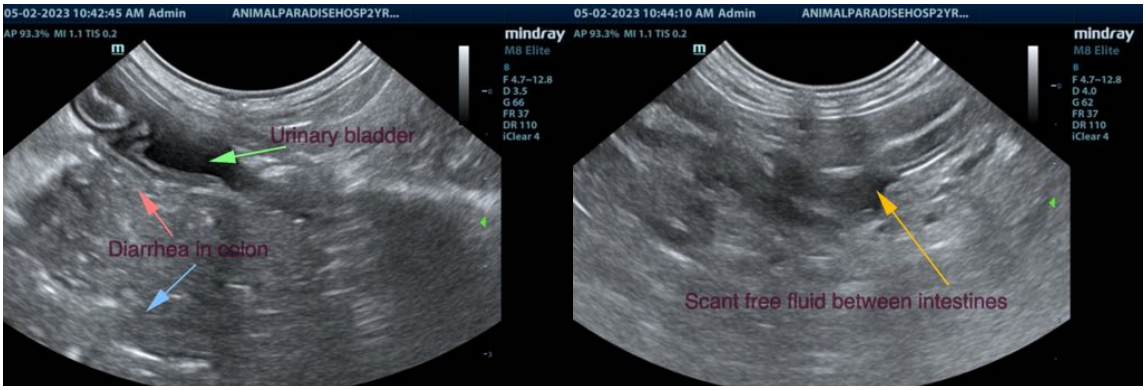
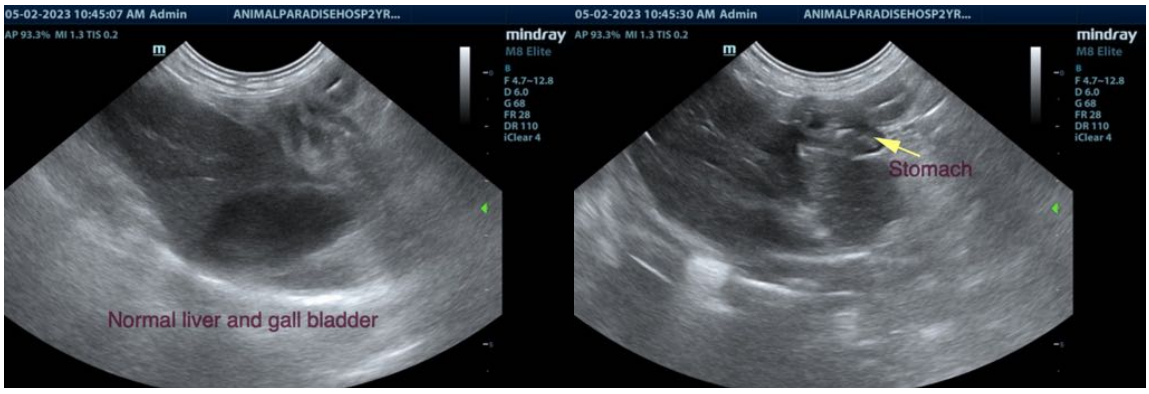
Treatment for pancreatitis is entirely supportive and involves fluid support, GI support - anti-nausea (ondansetron, cerenia 2mg/kg PO SID), appetite stimulation (mirtazapine, elura), analgesia (buprenorphin, gabapentin) and enteral nutrition as needed (syringe feeding, NG tube placement, etc). Antibiotics are generally not warranted for acute pancreatitis as it is usually sterile, however given the severity of leukocytosis, I would consider use of antibiotics (ex unasyn +/- fluoroquinolone) in this case. Intravenous antibiotics are preferred to ensure absorption and decrease GI side effects of oral antibiotics which can lower appetite compromising treatment and recovery. Anti-inflammatory steroids may be tried in an attempt to reduce inflammation if traditional supportive care is inadequate, but this is not a first line treatment. Serial imaging is indicated to monitor response to treatment.

Ultimately further investigation into the GI changes are recommended. No overt neoplastic criteria 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.

Empiric treatment for IBD includes diet trial with either hydrolyzed or select protein diet, vitamin b-12 supplementation, GI support as needed (anti-nausea, appetite stimulant). Treatment with steroids (budesonide vs prednisolone) is often required – biopsies should be acquired prior to treatment with steroids. Steroids may ultimately be tapered to the lowest effective dose or discontinued in some cases.





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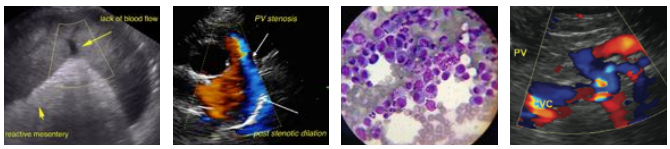

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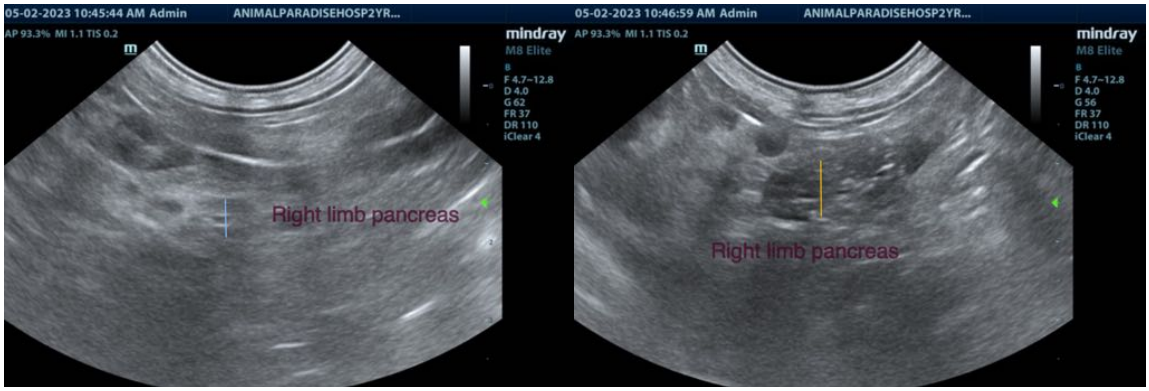

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The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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.

Dr Brittany Sinclair, BVSc(hons), DACVECC
info@SonoPath.com