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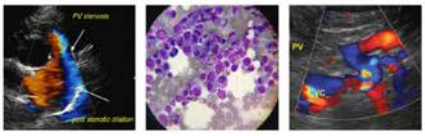

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PATIENT

Munchkin Nadeau

SPECIES

Feline

BREED

DSH

SEX

Female

AGE

6 Years

WEIGHT

7 Pounds

INTERPRETED BY

Kathleen Sennello DVM, MS, Diplomate ACVIM (Small Animal Internal Medicine)

IMAGING PERFORMED BY

Amy Mayhew, LVT

HOSPITAL NAME

SVS Imaging MI

REFERRING VET

Bell Vet Clinic of Oxford

INVOICE

38773

DATE

6/16/22

PRESENTING CLINICAL SIGNS

Weight loss, not eating well, elevated liver enzymes
Abnormal PE/Chem/CBC/UA Results: Initial ALT on 4/21/22 was 299. rechecked on 6/01/22 ALT back to normal, ALKPHOS 147. Today ALKPHOS 249 and Total Bilirubin 2.2

ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN

Urinary System

The urinary bladder is moderately distended with anechoic urine. The Bladder wall, trigone, ureteral papillae and visible urethra (to a depth of 2cm) appear normal with no evidence of wall thickening, mucosal irregularities, masses or cystic calculi.

The left kidney has a normal shape and size (3.83 cm). Overall echogenicity is normal with adequate corticomedullary distinction and a typical 1:3 cortex:medulla ratio. There is no evidence of perinephric inflammation or effusion. There is no evidence of pyelectasia, nephroliths, infarcts or hydroureter. Renal vasculature is normal.

The right kidney has a normal shape and size (4.04 cm). Overall echogenicity is normal with adequate corticomedullary distinction and a typical 1:3 cortex:medulla ratio. There is no evidence of perinephric inflammation or effusion. There is no evidence of pyelectasia, nephroliths, infarcts or hydroureter. Renal vasculature is normal.

Adrenal Glands

The left adrenal gland is normal in size measuring 0.34 cm at the caudal pole. It is observed in its normal position cranial to the left renal artery. It is normal in appearance (uniformly hypoechoic) and shape with no evidence of a mass effect.

The right adrenal gland is normal in size measuring 0.37 cm at the caudal pole. It is observed in its normal position between the cranial aspect of the right kidney and the caudal vena cava. It is normal in appearance (uniformly hypoechoic) and shape with no evidence of a mass effect.

Spleen

The spleen is subjectively normal in size (0.78 cm at the level of the hilus), echotexture is homogenous, and the splenic capsule is smooth with no irregularities. The blood flow through the hilus and splenic parenchyma appears normal. No focal parenchymal abnormalities are visualized.

Liver

The liver is large in size and hyperechoic. The parenchyma is heterogenous in echotexture with subtle, indistinct focal mottling. The visible portions of the vasculature and biliary tract appear normal. No focal nodules or cystic lesions are observed.

The gall bladder lumen is moderately distended. The wall of the gall bladder is not thickened and has a smooth mucosal surface. There is a moderate to large amount of non-organized echogenic debris. The cystic duct is significantly dilated and tortuous, measuring at approximately 0.38 cm. This can be followed to the common bile duct, which is dilated at 0.48 cm. Intermittently, there is some debris within the lumen of the bile duct, but no overt point of obstruction is visualized. The area of the duodenal papillae is visualized with no large mass effects seen.

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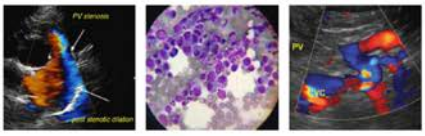

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Gastrointestinal

The stomach contains minimal luminal contents. It measures at a normal thickness of <0.36cm 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 normal. Bowel loops follow a curvilinear path with distinct wall layering maintaining the typical 1:3 muscularis:mucosa layer ratio. Jejunum wall measured 0.25 cm. 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 formed fecal material and gas shadowing distally. There is no observed focal or generalized colon wall thickening or loss of layering.

Pancreas

The pancreas is prominent and hypoechoic as compared to the surrounding isoechoic mesentery. There is no evidence of nodules or cystic lesions. There is no evidence of regional mesenteric inflammation or fluid. Prominent pancreatic duct noted at 0.12 cm.

Free Abdomen

There is a small amount of free abdominal fluid. There is a mild mesenteric lymphadenopathy, with mesenteric lymph nodes measuring 0.35, 0.37 cm. The omentum appears hyperechoic.

ULTRASONOGRAPHIC FINDINGS

- Moderate/large gallbladder debris with a significantly dilated and tortuous cystic and common bile duct – Dilation of the common bile duct could be consistent with a functional obstruction (i.e. primary hepatic disease resulting in hepatocellular swelling) or with an extrahepatic bile duct obstruction (ie. choledocholith, bile duct tumor, pancreatic disease, other).
- Large, heterogeneous and hyperechoic liver – Hepatic changes are non-specific and could be consistent with inflammation/infection (cholangiohepatitis), infiltrative neoplasia, lipidosis or other hepatopathy.
- Hypoechoic pancreas with prominent pancreatic duct – The pancreatic changes are most consistent with moderate pancreatitis/pancreatic inflammation. Recommend fPLI testing and continued monitoring for improvement or possible development of a pancreatic abscess. Consider fine needle aspirate if not improving.
- Small amount of free abdominal fluid

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

The liver appears large, bright, and somewhat heterogeneous, and there is significant dilation of the bile duct with debris within the gallbladder. An obvious point of obstruction is not visualized, but there could be partial obstruction due to bile sludge, pancreatitis, a preview stricture/small mass effect, etc.

I would recommend treatment for cholangiohepatitis and a fine needle aspirate of the liver to rule out underlying round cell neoplasia, as long as coagulation parameters permit. Once a fine needle aspirate is obtained, you could consider starting Ursodiol and antibiotics (Clavamox is typically a good choice) along with supportive and symptomatic therapy (this therapy is for pancreatic inflammation as well).

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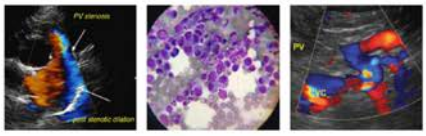

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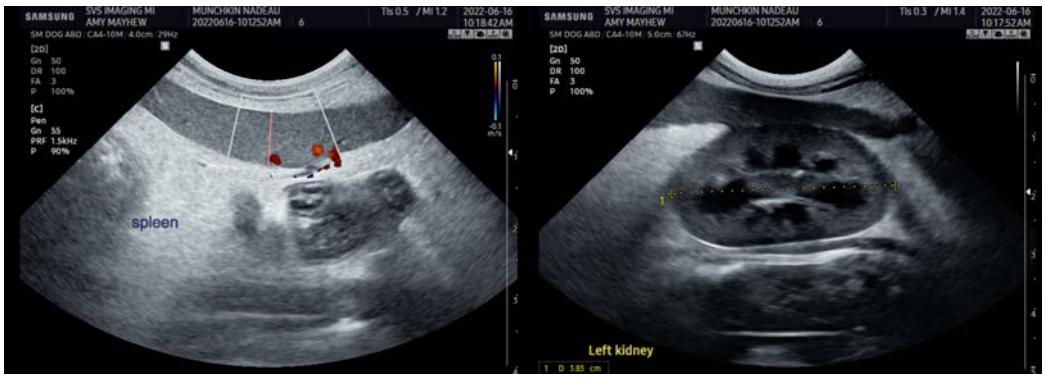
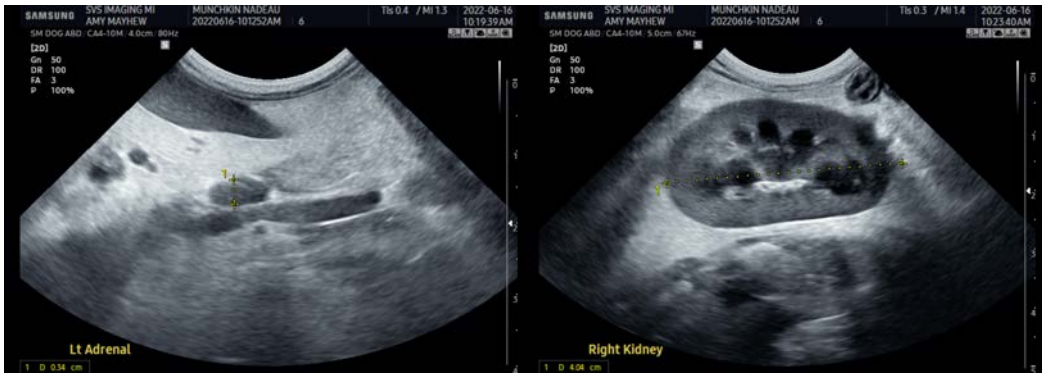
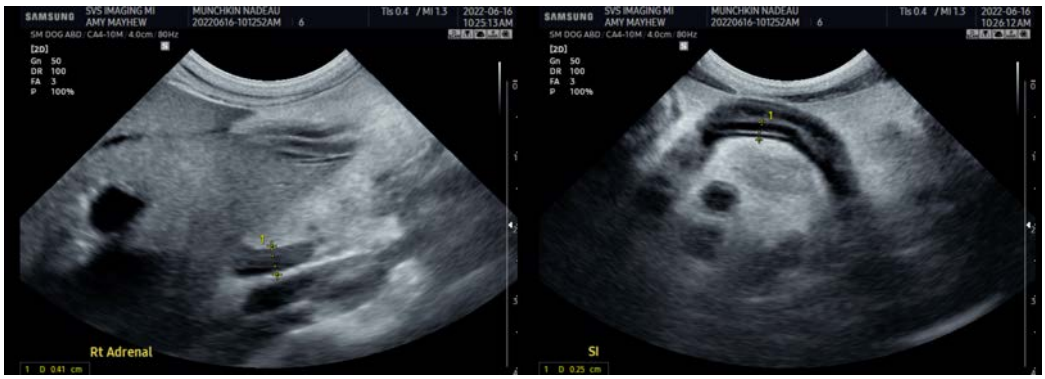
If there is no improvement on this therapy within 3-5 days, then I would consider adding in an anti-inflammatory dose of steroids (0.5 mg/kg Prednisolone q 24 hours). If values continue to rise, and cytology is not helpful, then consider either advanced imaging (contrast CT scan) or exploratory surgery to obtain biopsies from the liver and further evaluate the biliary tract for an obstruction, etc.

Consider three view thoracic radiographs to rule out concurrent thoracic disease/involvement.







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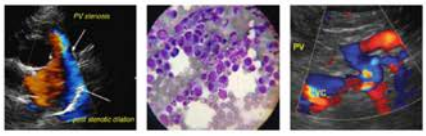

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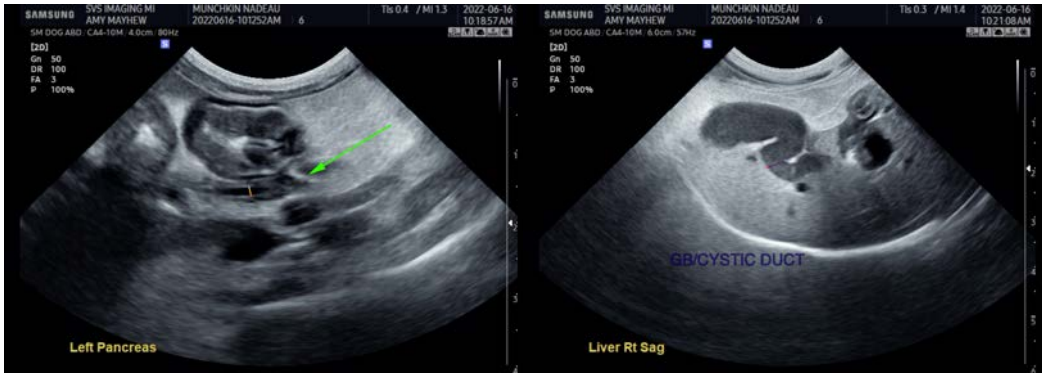

The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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.

Kathleen Sennello DVM,MS, Diplomate ACVIM (Small animal Internal Medicine)

kathleen.sennello@sonopath.com