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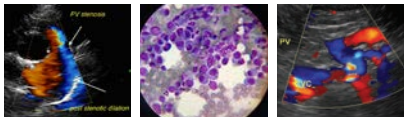


SonoPath

Clinical Sonography & Telecytology

EDUCATIONAL TELECONSULTATION SERVICES™

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

DATE

12/15/22

PATIENT

Duke Donnell

SPECIES

Canine

BREED

Boxer

SEX

Neutered Male

AGE

10/31/16

WEIGHT

63 Pounds

INTERPRETED BY

Beth Johnson, DVM DACVIM

IMAGING PERFORMED BY

Rachel Brilhart RDMS

HOSPITAL NAME

Healing Paws VWC

REFERRING VET

Dr. Key

INVOICE

43482

PRESENTING CLINICAL SIGNS

New client to us. Pet vomited once after eating turkey drippings right after Thanksgiving. Did well after until 1 week ago. Pet stopped eating at that time. Pet began having diarrhea 2 days later. No vomiting until ER started enrofloxacin. Once owner d/c'd, Vomiting stopped. ER noted rounded liver edges. Labs showed elevated liver enzymes, and elevated WBC. Pet has limited access outside. Pet had a similar episode in summer where didn't eat for days and soft stool. Owner notes q ~6 months will go for several days without eating. Pet on BilJac mixed with taste of wild water fowl and got Dog Joy Turkey Bacon treats. No known toxins. Has not had any other foods except Chicken and Rice. Owner noted stool a little better. Owner notes Ate a little chicken and rice over last 24 hours. PE - BCS 2-3/9, significant muscle loss. DCS 2/4, gums very inflammed, abd SNP. No palp fluid wave.

Current Medications: Baytril 136 1 1/2 T SID (owner stopped 12/13)
Lab Results: Glob 5.2m ALKP >200, ALT 550, Neutophils 43K, Mono 4.4 K, PLT 62 (clumps), NA:K 28
Date of Previous IntraPet Ultrasound: No previous.
Sedation: Not required to complete full diagnostic ultrasound.
Stat Report: Declined.

ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN

Urinary System

Urinary bladder is adequately distended. It has a normal uniform wall thickness. Contents include primarily anechoic fluid with occasional echogenic non-shadowing debris, most consistent with exfoliated cells, mucous and/or small blood clots. The dependent debris appears to be mineral/sandy debris with no discrete cystoliths observed. Both sterile inflammation as well as urinary tract infection can also present with echogenic debris. No masses observed. The trigone and visible pelvic urethra are normal in thickness with a smooth mucosal surface.

Prostate is normal in size, echotexture and echogenicity for a neutered male.

The right kidney is normal in size (9.09 cm), shape and echogenicity. It has smooth peripheral margination. There is a normal 1:3 cortex to medulla ratio with appropriate corticomedullary distinction. An approximately 2.0 cm in diameter cortical cyst is noted at the cranial pole. There is no evidence of pyelectasia, mineral or infarcts observed.

The left kidney is normal in size (7.97 cm), shape and echogenicity. It has smooth peripheral margination. There is a normal 1:3 cortex to medulla ratio with appropriate corticomedullary distinction. Multiple small cortical cysts are noted. There is no evidence of pyelectasia, mineral or infarcts observed.

Adrenal Glands

The right adrenal gland is normal in size (2.84 cm long x 0.90 cm at the cranial pole and 1.0 cm at the caudal pole), shape and contour. Corticomedullary structure is unremarkable. Visible surrounding vasculature appears normal.

The left adrenal gland is normal in size (2.86 cm long x 0.69 cm at the cranial pole and 0.70 cm at the caudal pole), shape and contour. Corticomedullary structure is unremarkable. Visible surrounding vasculature appears normal.

Spleen

Spleen is subjectively large in size with subtly scalloped or undulating capsular contour. Parenchyma is normal in echogenicity with a mildly coarse/heterogenous echotexture. No focal nodules or masses are observed. Splenic vasculature appears normal.

Liver
Liver is subjectively enlarged (swollen contour). Mild parenchymal remodeling with diffusely mildly coarse architecture and increased portal markings is present. No focal nodules or masses are observed. Visible vasculature and biliary tree appear normal without distension or congestion.

The gallbladder is subjectively moderately overdistended with echogenic fluid. The common bile duct is equally distended with echogenic sludge, debris, and fluid. The wall of the gallbladder and entire biliary system is thick, irregular, and hyperechoic. The area is surrounded by free fluid and markedly enhanced hyperechoic mesenteric fat.

Gastrointestinal
The visible stomach wall is normal in thickness and layering. The lumen of the stomach is mildly distended with very echogenic reverberation artifact from intraluminal gas. There is no evidence of obstruction, foreign material or infiltrative disease; however, complete visualization of far wall is partially inhibited by gas. Pyloric outflow tract appears patent.

The visible small intestines are normal in wall thickness and layering (canine duodenum < 0.5 cm and feline duodenum < 0.4 cm; other < 0.3 cm). However, in the cranial abdomen, adjacent to the pancreas, there is mild focal thickening without loss of layering. Small intestinal motility appears adequate (1-3 contractions per min). The lumen of the small intestine is empty with no evidence of obstruction, foreign material or infiltrative disease.

The visible colon is normal in wall thickness (< 0.2 cm) and layering. Contents are soft/liquid stool.

Pancreas
The observed pancreas is prominent (enlarged) in size, hypoechoic to surrounding tissue and irregular in shape with a swollen undulating contour. Multiple small cystic foci are present throughout the parenchyma. Enhanced hyperechoic ill-defined surrounding fat is noted.

Free Abdomen
There is a moderate amount of free fluid throughout the abdomen, and the cranial abdomen is diffusely hyperechoic, characterized by markedly enhanced mesenteric fat.

The mesenteric and caudal abdominal/colonic lymph nodes are prominent in size with swollen capsular contour. Normal elongated shape (length to width ratio) is maintained. There is no loss of parenchymal detail.

PRIMARY FINDINGS

- These images are concerning for a possible gallbladder mucocele or other post-hepatic biliary obstruction, with concurrent hypoechoic liver changes suggestive of cholangiohepatitis versus other infiltrative process.

- Additionally, acute pancreatitis is suspected.

- **Scalloped spleen –** can be associated with benign or malignant infiltrative disease. Common causes include a reactive spleen secondary to immune stimulus or early infiltrative round cell neoplasia such as lymphoma or mast cell tumor.

- **Reactive mesenteric and caudal abdominal/colonic lymph nodes –** infiltrative neoplastic disease cannot be ruled out but is considered less likely.

SECONDARY FINDINGS

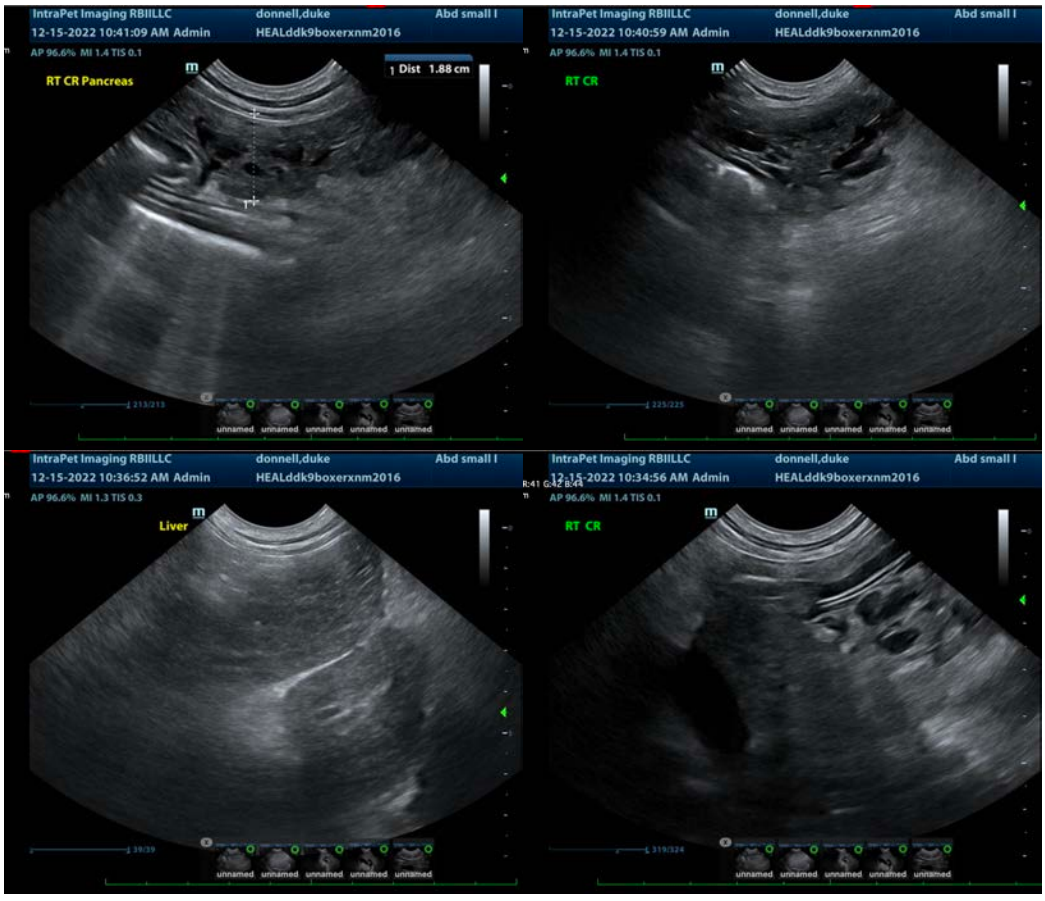
- Urinary bladder sand/debris
- Bilateral renal cortical cysts

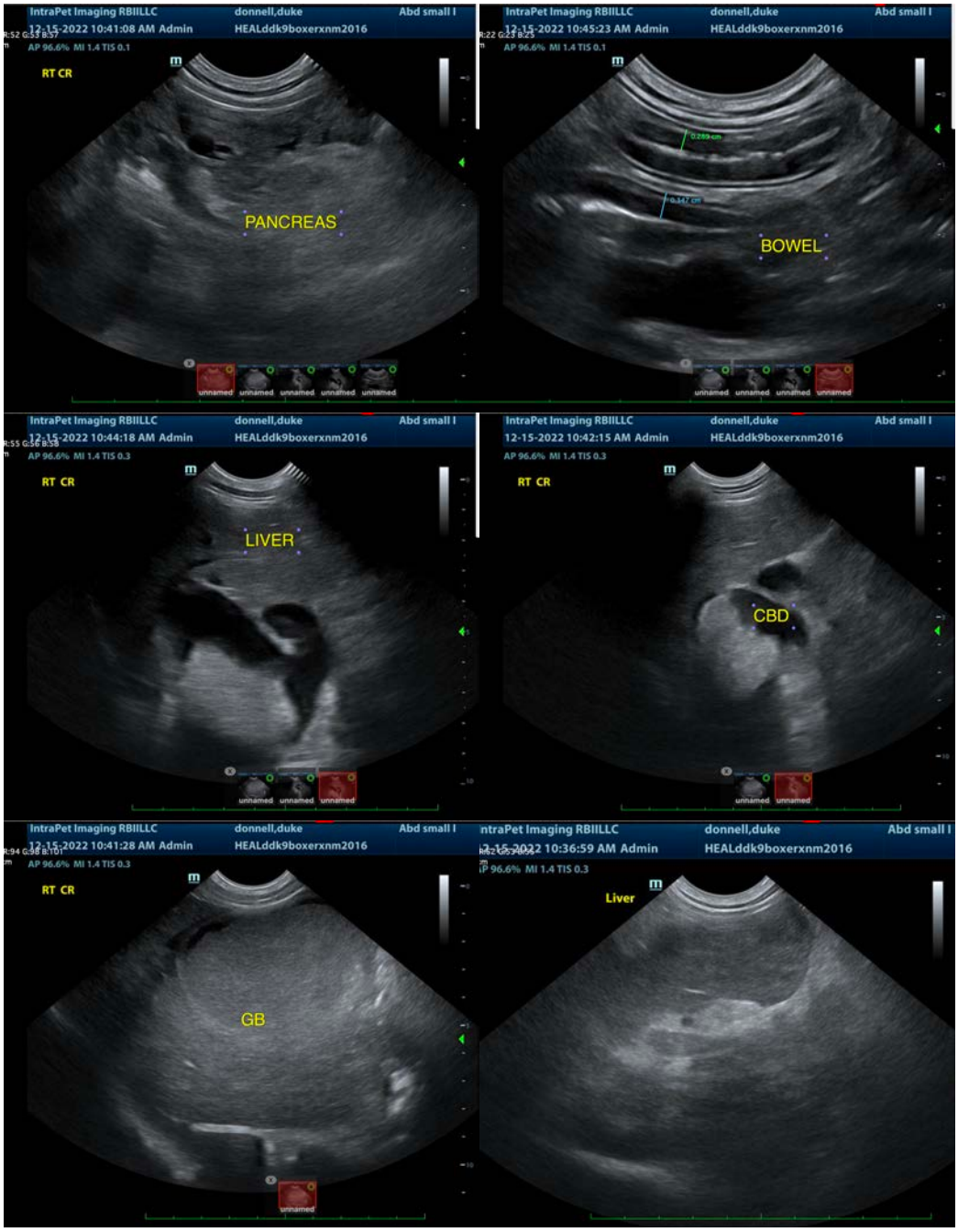
INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

Given the marked cranial abdominal pathology/evidence of inflammation, it is difficult to determine whether the primary pathology is hepatic, biliary, or pancreatic, and/or likely a combination of all 3. However, given the concern for mucocele/biliary obstruction characterized by marked dilation and debris, alleviation of the obstruction via surgical intervention may be required regardless of underlying cause.

In the meantime, given that surgery is reportedly not an option, aggressive supportive/symptomatic medical management, if possible, is recommended in the form of antiemetics, gastroprotectants, appetite stimulants, or other nutritional support up to and including possibly a feeding tube, pain management, broad-spectrum antibiotics, fluid therapy, etc.

Additionally, if further diagnostics are an option, a fine needle aspirate of the liver and/or the spleen could be considered, as well as a quantitative PLI. However, in this particular situation, using resources for therapy is likely more beneficial than further diagnostics.

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PANCREAS
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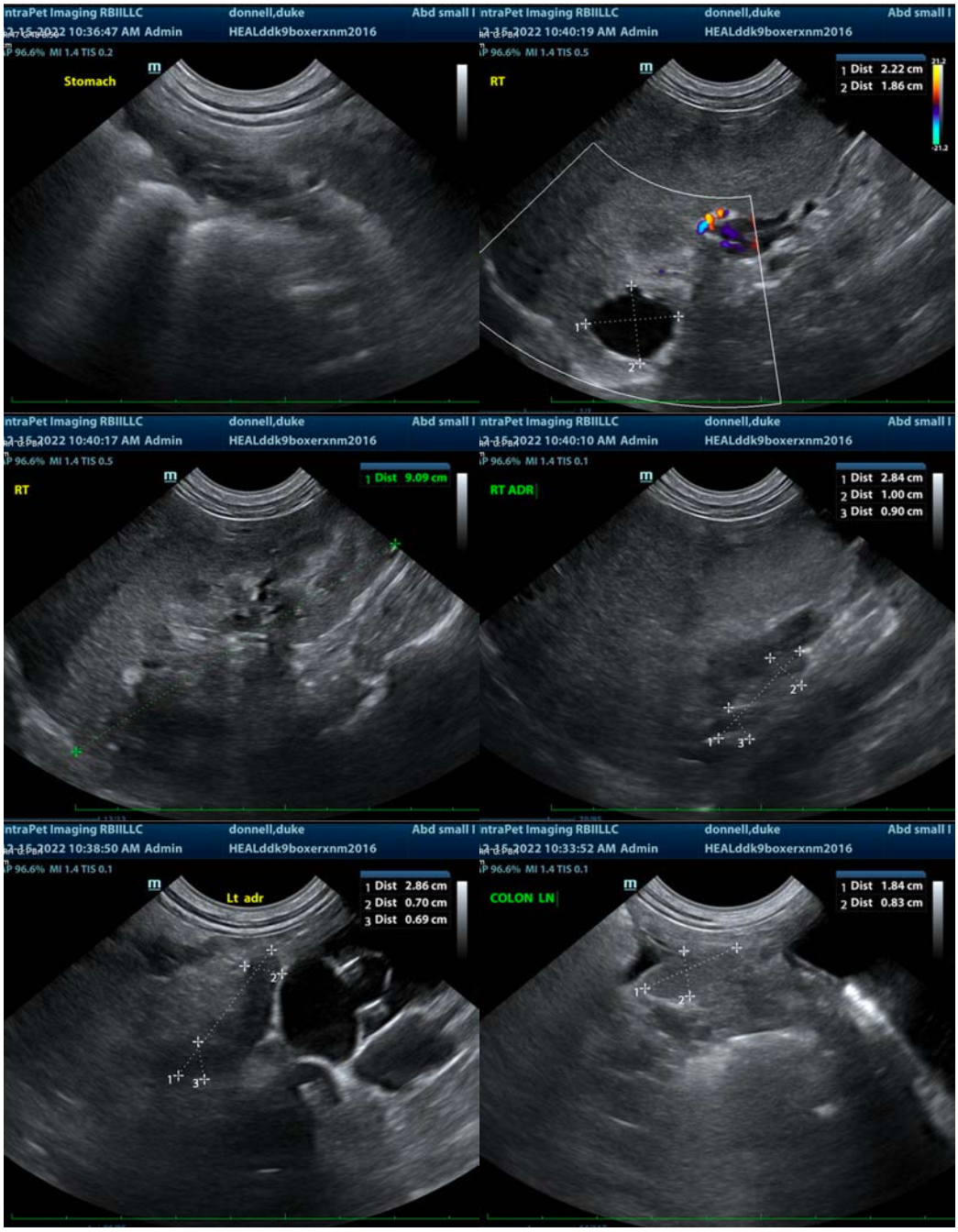
Liver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Abd small I
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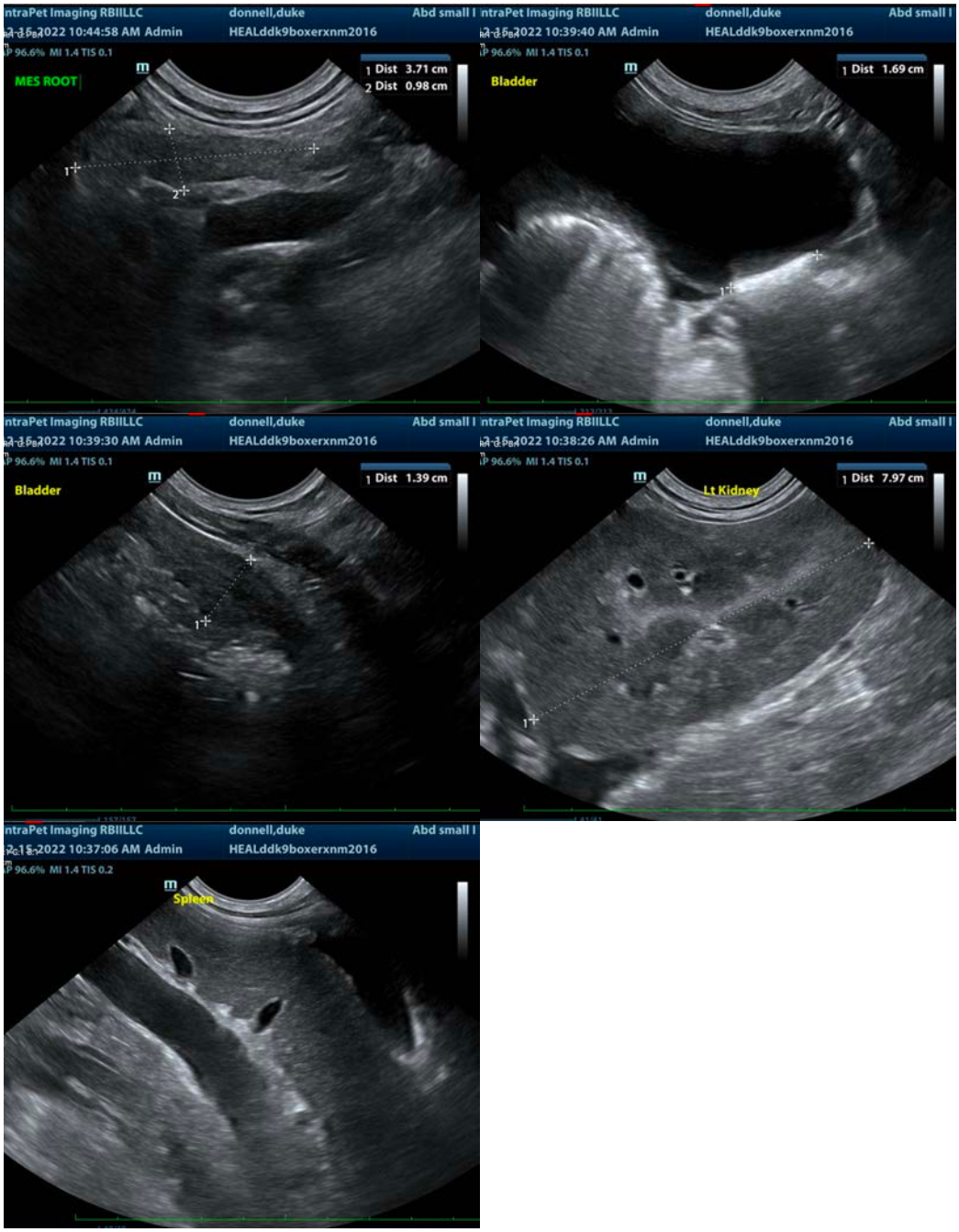
Admin
96.6% MI 1.4 TIS 0.2
Stomach
96.6% MI 1.4 TIS 0.5
RT
1 Dist 2.22 cm
2 Dist 1.86 cm
96.6% MI 1.4 TIS 0.5
RT
1 Dist 9.09 cm
96.6% MI 1.4 TIS 0.1
RT ADR
1 Dist 2.84 cm
2 Dist 1.00 cm
3 Dist 0.90 cm
96.6% MI 1.4 TIS 0.1
Lt adr
1 Dist 2.86 cm
2 Dist 0.70 cm
3 Dist 0.69 cm
96.6% MI 1.4 TIS 0.1
COLON LN
1 Dist 1.84 cm
2 Dist 0.83 cm



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.

Beth Johnson, DVM, DACVIM
Beth.Johnson@sonopath.com