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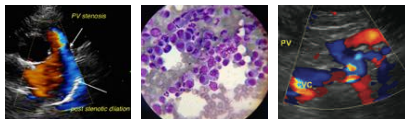

SonoPath
Clinical Sonography & Telecytology
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DATE
11/30/21

PATIENT
Rio Ramsel

SPECIES
Canine

BREED
Cavalier King Charles Spaniel Mix

SEX
Spayed Female

AGE
6/16

WEIGHT
28.9 lbs

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

IMAGING PERFORMED BY
Rachel Brilhart RDMS

HOSPITAL NAME
Animal Emergency Hospital

REFERRING VET
Dr. Thompson

INVOICE
94207

PRESENTING CLINICAL SIGNS

History: Presenting Complaint: Trouble Walking; Vomiting. Date: 11-28-2021 Notes: Rio is a 5 y/o FS cavalier who presents for difficultly getting up and down and vomiting - vomited food around 10:30 pm - was sitting more, did not want to move - started having trouble getting up after sitting - appeared to be favoring right hind limb, walking bow legged - did urinate normally, did not defecate today - previously may have had loose stool - approximately 1 week ago did vomit up dinner - eating and drinking normally, not interested in her treat this evening which is not like her - No C/S, no change in drinking, however, known to drink a lot - Hx two UTIs treated previously, still leaking urine after treated, started on Proin - no hx of FB ingestion, trauma, or toxin ingestion Medications: - Proin - flea/tick/ Assessment: vomiting, difficultly walking (primary GI vs orthopedic vs neuro vs other), history of UTI and urinary incontinence. Plan: Discussed fever and exam findings, recommended hospitalization, full BW, UA, AXR, and 4dx. Discussed if work up unrewarding will treat for GI. O elects to move forward with treatment.
Diagnostics: PCV/TP CBC/Chem/lytes UA, AXR, Treatment: 1.5x maintenance, Protonix 1 mg/kg, Buprenorphine 0.02 mg/kg IV q8h.
Current Medications: IVF 1.5x maintenance, Protonix 1 mg/kg, Buprenorphine 0.02 mg/kg IV q8h, Ampicillin, Butorphanol, Dexdomitor, Cerenia.
Lab Results: Attached separately.
Radiographs: Xray Abdomen 2 View large u. bladder chest clear stomach-- has some patchy material (treat/foodstuff?).
Date of Previous IntraPet Ultrasound: No previous IntraPet scans.
Sedation: Not required to complete full diagnostic ultrasound.
Stat Report: Not requested.

ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN

Urinary System

The urinary bladder is moderately distended with very echogenic urine. The bladder wall appears thickened and irregular. It is difficult to differentiate from the soft tissue density of the urine present. During the scan the urinary bladder was catheterized and flushed and reinstilled with saline making visualization of the wall of the urinary bladder much easier. This revealed a thickened, irregular bladder wall measuring 0.93 cm, but much more thickened at the apical portion of the urinary bladder where mass like projections are present. This is most consistent with polypoid masses, but an underlying neoplastic lesion cannot be ruled out. The area of the trigone, ureteral papilla and visible urethra to a depth of 2.0 cm appear much more normal with no evidence of wall thickening, mucosal irregularities or masses. On the pre-flushing views there is evidence of some mineralized debris/small calculi.

The left kidney has a normal shape and size (5.44 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. Mild pyelectasia was noted and measured 0.31 cm. There is no evidence of nephroliths, infarcts or hydroureter. Renal vasculature is normal.

The right kidney has a normal shape and size (5.43 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. Mild pyelectasia was noted at 0.2 cm. There is no evidence of nephroliths, infarcts or hydroureter. Renal vasculature is normal.

Adrenal Glands

The left adrenal gland is normal in size measuring 0.71 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 0.6 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, 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 subjectively normal in size, and echogenicity with smooth peripheral margins. 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 gallbladder lumen is moderately distended. The wall of the gallbladder is not thickened and has a smooth mucosal surface. Luminal contents are primarily anechoic. The cystic and common bile ducts are normal/not visible.

Gastrointestinal

The stomach is moderately dilated with fluid and irregular shadowing material most consistent with normal ingesta and gas. It measures at a normal thickness of <0.7cm with some variability due to the presence of rugal folds. The distinction of the gastric wall layering 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. The duodenum measured as normal (0.59 cm) and the jejunum measured as normal (0.31 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.

Free Abdomen

A mesenteric lymph node is visualized and measured at 0.59 cm. There was no evidence of effusion. The omentum is of normal uniform echogenicity.

ULTRASONOGRAPHIC FINDINGS

PRIMARY FINDINGS:

- Severely echogenic urine with urinary bladder thickening and polypoid like mass effects. These lesions could be consistent with chronic inflammatory lesions (polyps or could represent an underlying neoplastic process).

- Mild bilateral pyelectasia. Pyelectasia of both kidneys could be consistent with pyelonephritis, chronic renal disease, secondary to PU/PD or fluid therapy (if applicable), other.

- Hypoechoic, prominent pancreas. The pancreatic changes are most consistent with mild pancreatitis or a recent episode of pancreatic inflammation.

- Large ingesta observed in the gastric lumen. Correlate with feeding history. If the patient is adequately fasted consider such differentials as delayed gastric emptying or ingested foreign material/partial obstruction (not observed).

SECONDARY FINDINGS:

- Heterogenous liver. The hepatic changes are consistent with age-related parenchymal remodeling and are not considered clinically significant at this time.

- Mildly thickened small intestine. The mild small intestinal wall changes may be a normal variant in this patient or could be consistent with an inflammatory process (e.g., inflammatory bowel disease).

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

The primary lesion observed on today's scan involves the urinary bladder that contained severely echogenic urine, which was flushed out during the ultrasound exam. The bladder wall is severely thickened and irregular with a concentration of thickening in the apical portion of the urinary bladder. This is in an atypical location for transitional cell carcinoma so I am hoping that this may represent a benign lesion. Unfortunately a definitive diagnosis cannot be determined by ultrasound alone.

- Consider culture and sensitivity- if infection present the lesion can be re-evaluated with ultrasound approximately 2 weeks into the antibiotic course.

- Urine evaluation for the BRAF mutation seen in patients with transitional cell carcinomas could be considered. IF the lesion is persistent and BRAF testing is negative (ie non diagnostic) you could consider Traumatic catheterization to obtain representative cells for cytology, or biopsy sampling via either cystoscopy (if a female) or surgery.

Based on the history of difficulty walking it is possible that the urinary signs could be secondary to a spinal lesion. It is also possible that reluctance to walk is a symptom of urinary tract irritation. Correlate with physical exam findings and neurologic exam. If pelvic limb disease is suspected then I recommend evaluation by a veterinary neurologist as these lesions may represent chronic urinary tract infections.

The pancreas appears prominent on today's scan. This may represent mild current inflammation or previous inflammation with the historical vomiting. You can consider a GI panel to Texas A&M University for a quantitative PLI, TLI, cobalamin and folate both due to the subjective small intestinal thickening in the prominent pancreas.

The stomach did appear somewhat distended with ingested material. This could be normal if the patient was not adequately fasted, but could represent delayed gastric emptying or foreign material if there has not been a recent meal. Correlate with abdominal radiographs.


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ramsel,rio
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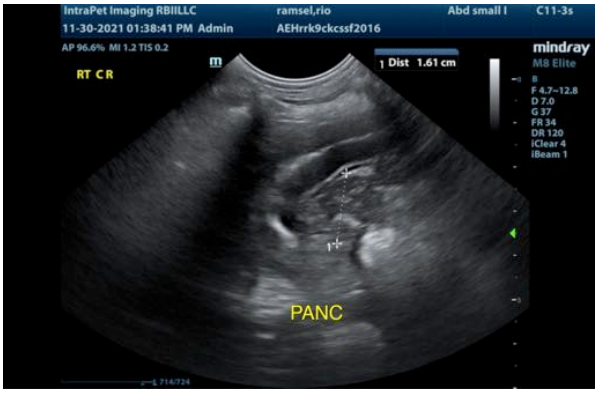
Liver
mindray
M8 Elite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PANC
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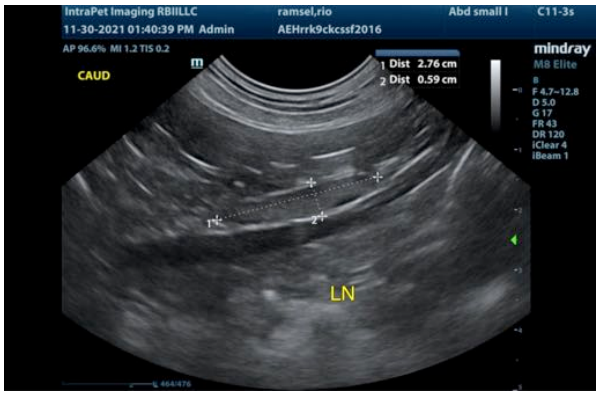
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CAUD
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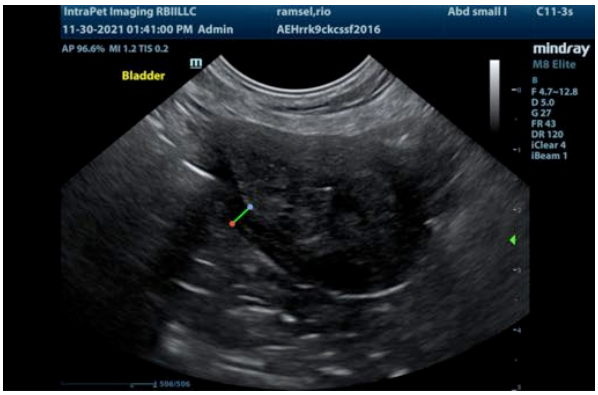
2 Dist 0.59 cm
LN
mindray
M8 Elite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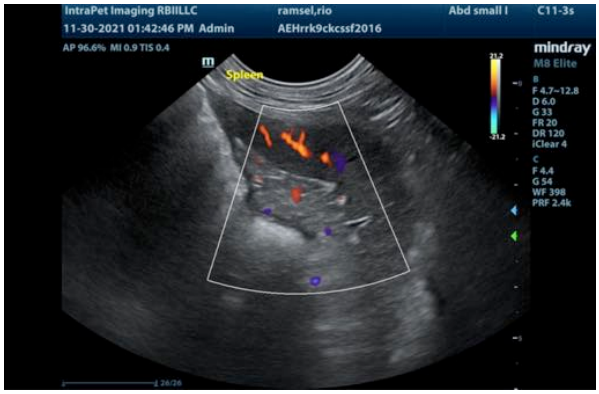
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ramsel,rio
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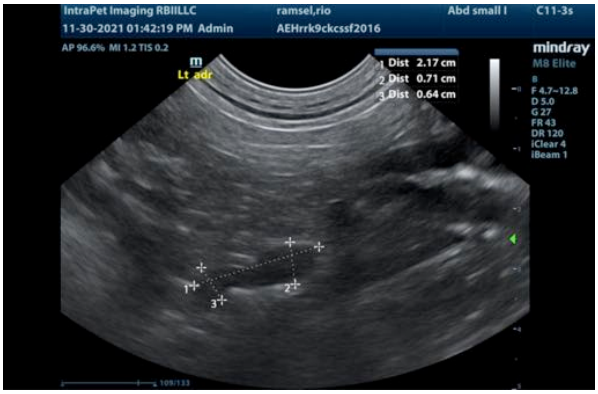
Spleen
mindray
M8 Elite


IntraPet Imaging RBIILLC
ramsel,rio
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Lt adr
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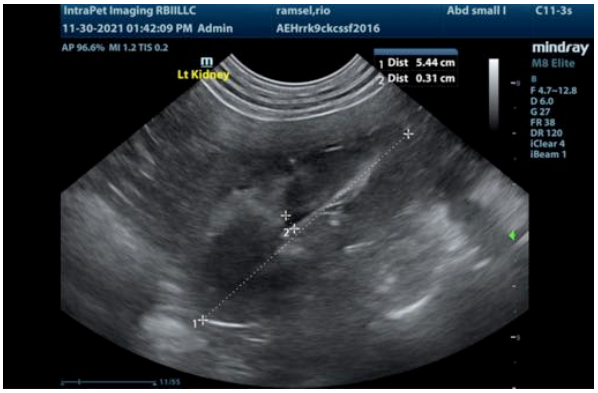
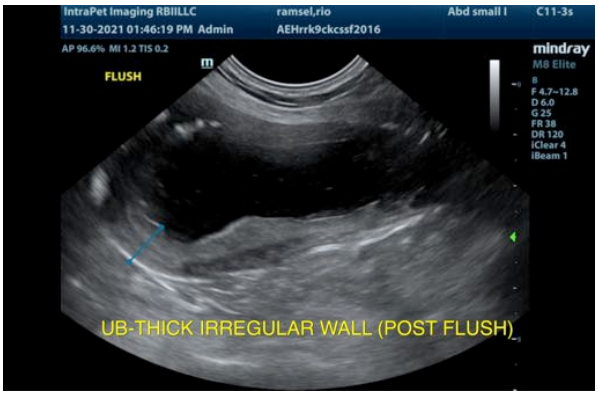
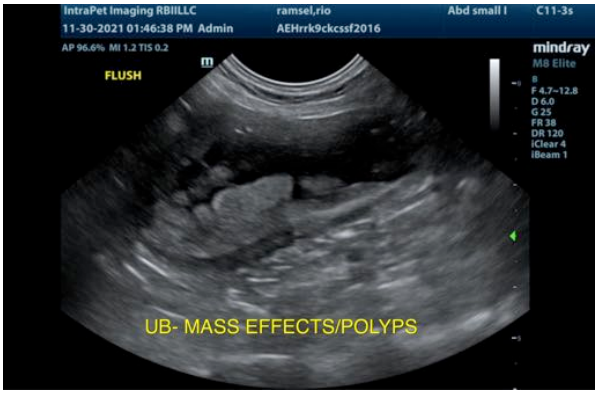
3 Dist 0.64 cm
mindray
M8 Elite







The information and recommendations provided are based on the images presented by the referring veterinarian. 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