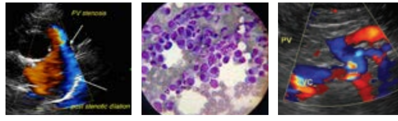




**DATE**
10/29/21

**PATIENT**
Ben Baldwin

**SPECIES**
Canine

**BREED**
Yorkshire Terrier

**SEX**
Neutered Male

**AGE**
10/28/19

**WEIGHT**
9 Pounds

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

**HOSPITAL NAME**
Animal Emergency Hospital

**REFERRING VET**
Dr. Martinolli

**INVOICE**
26765

## PRESENTING CLINICAL SIGNS

**Presenting Complaint:** Vomiting; Shivering; Lethargic
**Date:** 10-28-2021 **Notes**: History of chewing up toys or will try to take food from kids; may have chewed part of a popsicle stick a few days ago. Has been vomiting since yesterday and not eating at all. No diarrhea.
Assessment: r/o gastroenteritis; pancreatitis; foreign body
Plan: xrays, IV catheter, fluid therapy, and further treatment as needed.

Current Medications: Unasyn, Cerenia, Buprenex, Pantoprazole.
Lab Results: Attached separately within request.
Radiographs: Not provided by the veterinarian.
Date of Previous IntraPet Ultrasound: No previous IntraPet scans.
Sedation: not needed
Stat Report: not requested

## 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 prostate is normal in size and shape for this neutered male dog. The parenchyma is homogenous and the external margins are smooth. The prostatic urethra appears normal with no evidence of irregularity, invasion, mass effect or calculi.

The left kidney has a normal shape and size (4.11 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 (3.76 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 0.44 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 0.46 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 homogenous echotexture. 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 gall bladder 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 severely 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. There is a large accumulation of shadowing material within the pyloric region of the stomach. This abnormal foreign material/shadowing appears to extend into a plicated duodenum with concern for a partial or complete obstruction. Additionally, severe pancreatitis may be contributing to gastric ileus.

The proximal duodenum appears inflamed, corrugated, and plicated in some areas with mild fluid distention and a suspicious linear hyperechoic structure running on the lumen. This combined with the material observed in the pylorus of the stomach is concerning for a pyloric outflow tract obstruction extending into the duodenum. There is severe mesenteric inflammation surrounding these areas. The bowel wall appears normal with intact layering, measuring 0.37 cm. Mid jejunum, the bowel appears more normal and measures at a normal thickness of 0.23 cm. Distally, there is another section of small bowel with focal hard shadowing material and plication, suggestive of a $2^{nd}$ area of foreign material. Bowel in this area does not appear distended, but is plicated and irritated. Findings are suggestive of foreign material within the gastrointestinal tract.

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 large and hypoechoic to surrounding mesentery. There is no evidence of nodules or cystic lesions. There is evidence of regional mesenteric inflammation. Consistent with moderate to severe pancreatitis.

### *Free Abdomen*

Scant free fluid is present. No mesenteric lymphadenopathy. The Medial iliac nodes appear normal and there was no evidence of a caudal aortic thrombus at the bifurcation. The omentum appears severely hyperechoic and inflamed/mottled in the areas around the hypoechoic pancreas and the duodenum and bowel.

## ULTRASONOGRAPHIC FINDINGS

- Stomach severely dilated with fluid and shadowing foreign materal within the pylorus, which is concerning for possible extension into the proximal duodenum causing a partial or full pyloric outflow tract obstruction.

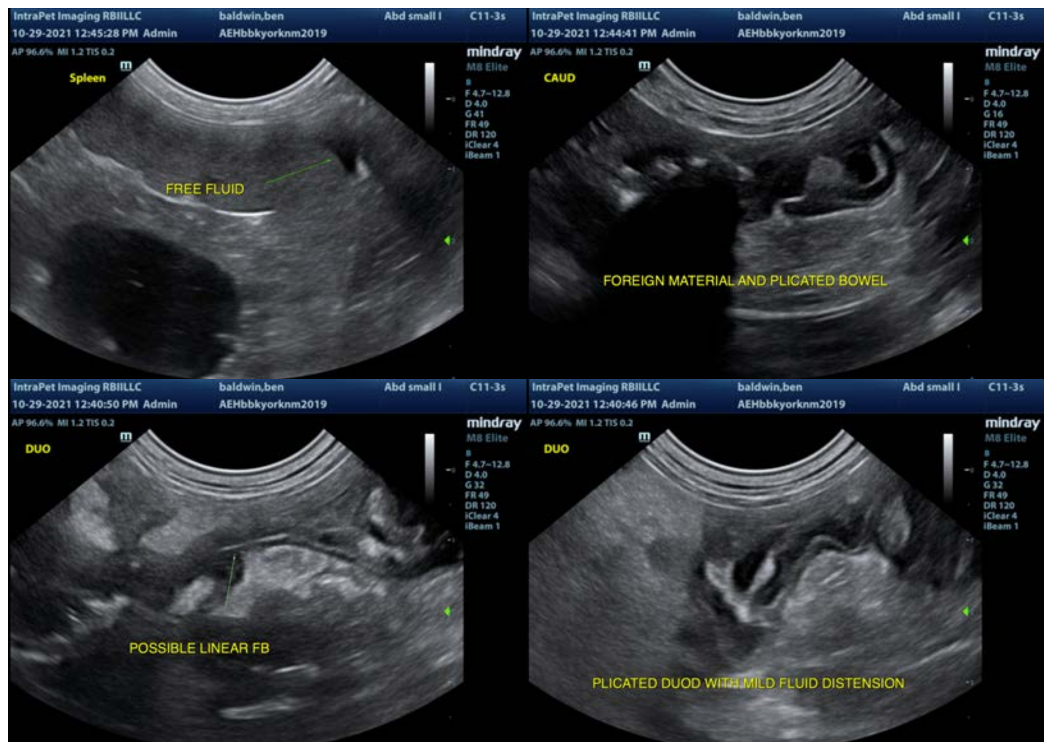
- Moderate to severe pancreatitis – The pancreatic changes are most consistent with moderate to severe pancreatitis/pancreatic inflammation. Recommend fPLI testing and continued monitoring for improvement or possible development of a pancreatic abscess. Consider fine needle aspirate if not improving.

- Shadowing material with bowel plication in the distal small intestine. This is concerning for a 2nd site of foreign material within the small intestine.

- Severely inflamed mesentery – consistent with peritonitis (sterile or bacterial). This is likely associated with severe pancreatitis and possibly the associated enteritis.

## INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

These cases are challenging because there is severe inflammation of the pancreas, which causes secondary bowel thickening and sometimes corrugation, but additionally there is significant shadowing material, distention of the gastric lumen, and plication of bowel. These are all indicators of obstruction/foreign material. I suspect this is a case of concurrent pancreatitis and foreign body. Clinical judgement is necessary to determine how much stabilization is needed medically prior to considering surgical exploratory. Correlate these findings with radiographic findings. Strongly consider surgical explore once rehydrated, or very close evaluation with serial radiographs, but obstruction is thought very likely.



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M8 Elite
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G 16
FR 49
DR 120
iClear 4
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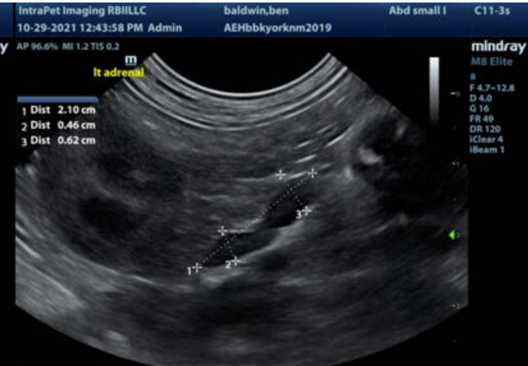
SHADOWING MATERIAL IN BOWEL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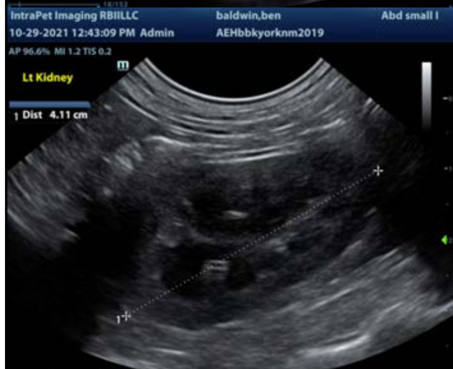
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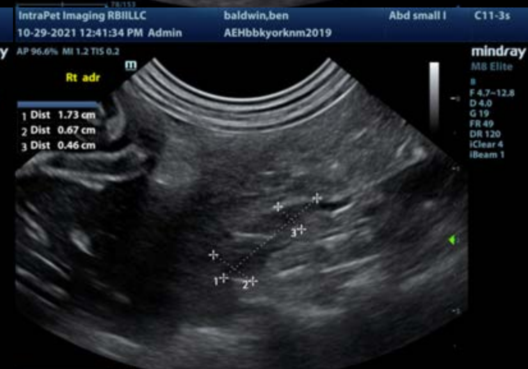
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3 Dist 0.46 cm
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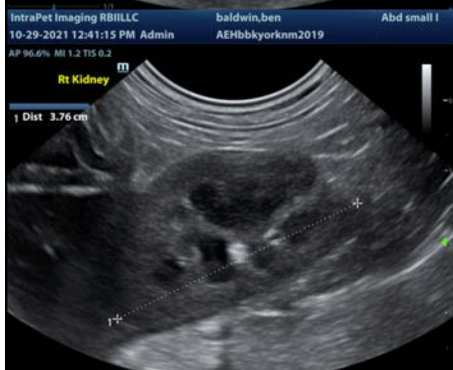
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G 28
FR 49
DR 120
iClear 4
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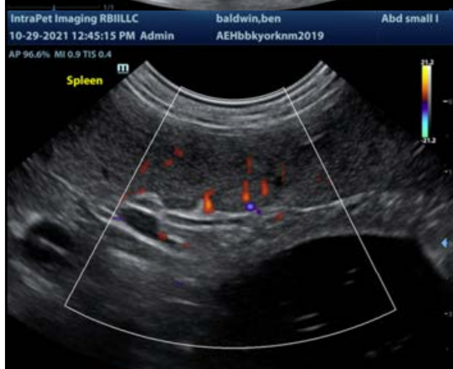
GB/ SHADOWING MATERIAL IN STOMACH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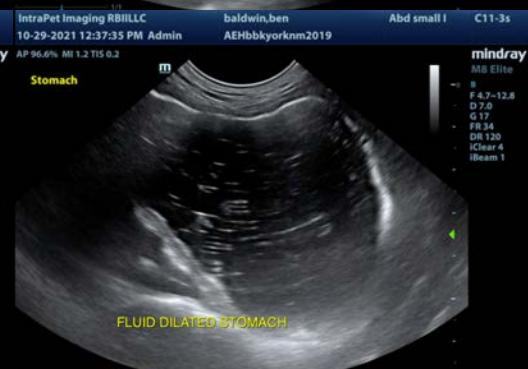
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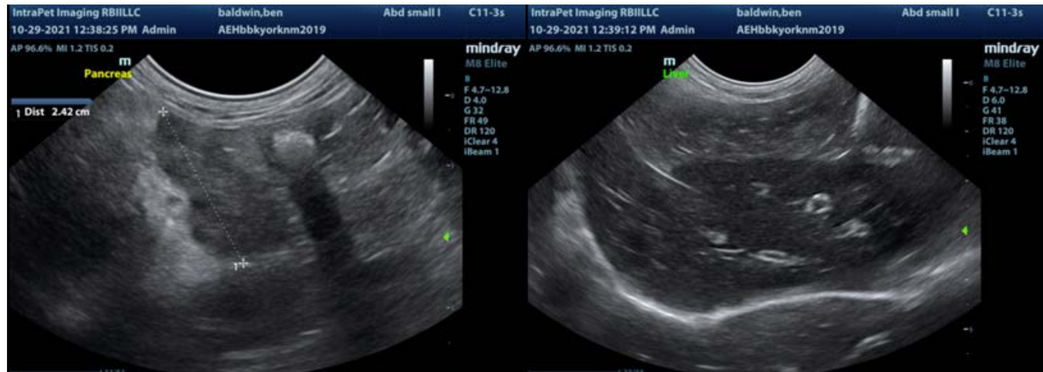
FLUID DILATED STOMACH




**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