

**DATE PRESENTING CLINICAL SIGNS**

12/8/21 History: Hematuria.

**PATIENT** Current Medications: Clavamox, Baytril, Carprofen.

Holly Mires

Lab Results: U/A 3 +Protein and Blood, bacteria, High WBC, Bloodwork- WNL.

Radiographs: Suspect bladders stones/debris on radiograph.

Date of Previous IntraPet Ultrasound: No previous IntraPet scans.

Sedation: Not required to complete full diagnostic ultrasound.

**SPECIES**

Stat Report: Not requested.

Canine

**ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN****BREED****Urinary System**

Maltese

The urinary bladder is mildly distended with anechoic urine. The Bladder wall appears diffusely thickened with a maximum measurement of 0.62 cm. The trigone, ureteral papillae and visible urethra (to a depth of 2cm) appear normal with no evidence of wall thickening, mucosal irregularities, or masses. There are two discreet shadowing, hyperechoic cystic calculi visualized within the lumen, measuring 1.26 cm and 107 cm.

**SEX**

Spayed Female

The left kidney has a normal shape and size (3.85 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.

**AGE**

10/22/20

**WEIGHT**

9.75 Pounds

The right kidney has a normal shape and size (3.93 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.

**INTERPRETED BY**

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

**Adrenal Glands**

The left adrenal gland is normal in size measuring 0.37 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.

**IMAGING PERFORMED BY**

The right adrenal gland is normal in size measuring 0.49 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.

Rachel Brillhart RDMS

**Spleen****HOSPITAL NAME**

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.

Route 140 VH

**REFERRING VET****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.

Dr. Pierpont

**INVOICE**

33346

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 contains minimal luminal contents. 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 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. The duodenum measured as normal (between 0.3-0.5cm in wall thickness) and the jejunum measured as normal (between 0.2-0.47cm.) 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 normal and isoechoic to surrounding mesentery. There is no evidence of nodules or cystic lesions. There is no evidence of regional mesenteric inflammation or fluid.

### ***Free Abdomen***

Evaluation of the peritoneal cavity did not reveal any evidence of effusion, or subjective lymphadenomegaly. The Medial iliac nodes appear normal and there was no evidence of a caudal aortic thrombus at the bifurcation. The omentum is of normal uniform echogenicity.

### ***Other***

The uterine stump is visualized and appears somewhat prominent.

## **PRIMARY FINDINGS**

- Diffusely thickened urinary bladder wall with at least two shadowing cystic calculi (possibly 3?)
- Shadowing material visualized within a distended gastric lumen – most consistent with ingesta. Correlate with feeding history. If patient was adequately fasted, then consider such differentials as delayed gastric emptying, or less likely a partial outflow obstruction (none observed).

## **SECONDARY FINDINGS**

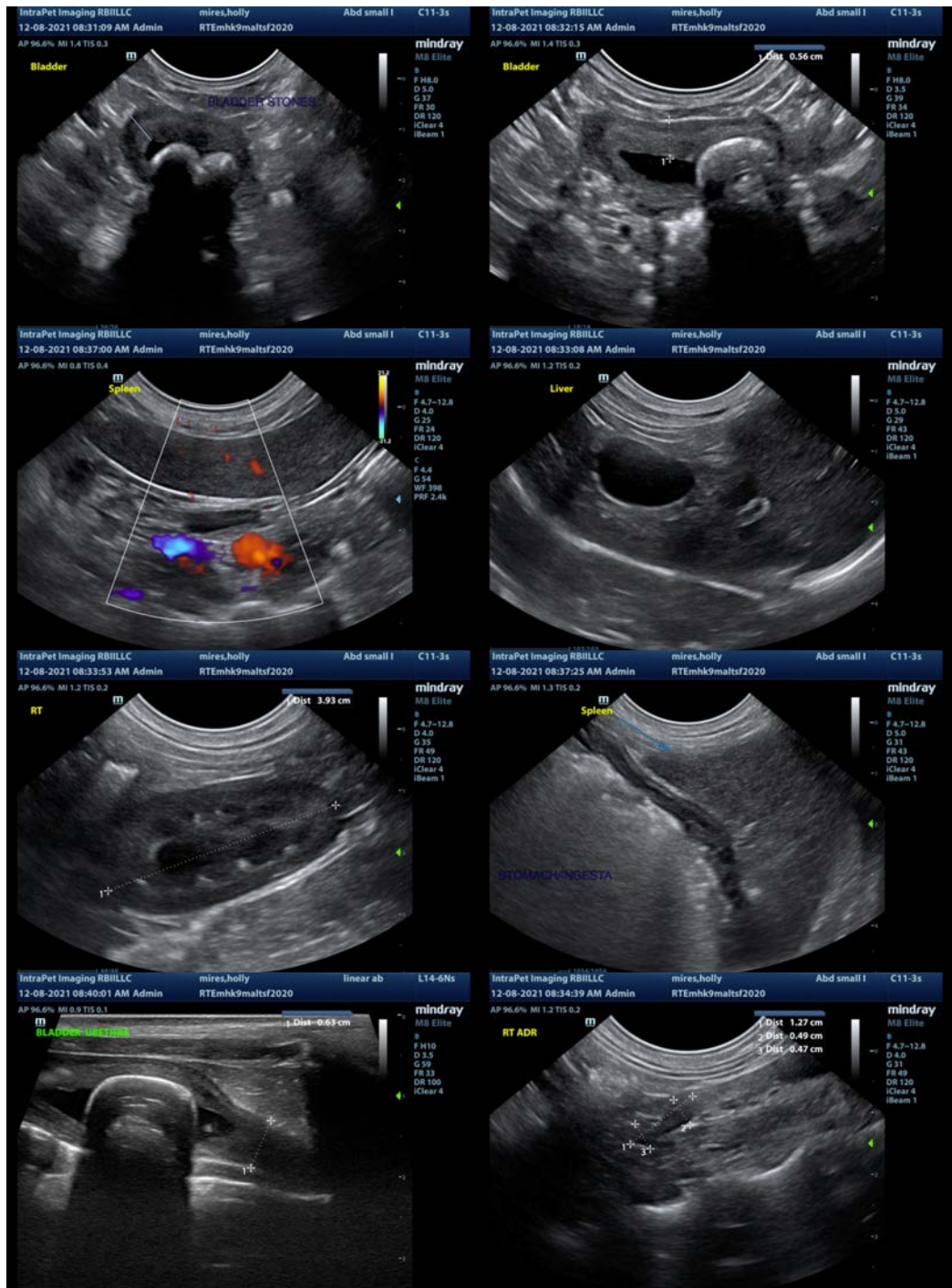
- Prominent uterine stump – The significance of this is unclear, as it does not appear significantly inflamed.

## **INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS**

Focal shadowing mineralized structures most consistent with cystic calculi are observed in the bladder

- Recommend urinalysis and culture
- Recommend Radiographs to look confirm bladder stones and to look for evidence of stones in ureters/kidney and to better assess size and number of stones (per history this was already done).
- If infection is present (struvite stones suspected) can consider attempted dissolution with risk for obstruction being considered. Otherwise recommend stone removal via surgery or if small enough for your patient size can consider urethral hydropulsion, cystoscopy, or laser lithotripsy with stone analysis and culture.

Based on the size of the stones and the size of the patient, these would most likely be calcium oxalate stones, and cystostomy would be a reasonable option.





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