

PATIENT

Ellie May Petty

SPECIES

Canine

BREED

Shih Tzu

SEX

Spayed Female

AGE

7 years

WEIGHT

7.8 kg

INTERPRETED BY

Lisa Carioto, DVM,
DVSc, Diplomate
ACVIM

IMAGING PERFORMED BY

Crystal Hill

HOSPITAL NAME

Beattie PH Stoney
Creek

REFERRING VET

Dr. Salib

INVOICE

30190

DATE

5/9/22

PRESENTING CLINICAL SIGNS

Presented 04/21 for polyuria, hematuria, and urinary incontinence while walking around the house. Will squat to urinate and nothing is produced. History of same clinical signs since Sept 2021, O reports they have never resolved. NSF on exam Treated with Clavaseptin Sept 2021 and on April 2022 as requested by owner.

RAD REPORT ABDOMEN: September 21, 2021: One right lateral projection is available for interpretation. FINDINGS: The serosal detail is adequate. Assessment of the kidneys is limited on this one lateral projection however no evident abnormalities are identified. The retroperitoneal space shows adequate contrast. The urinary bladder is mildly to moderately distended. A collection of small mineral opacities is noted to summated over the central lumen of the urinary bladder. The liver appears normal in size. The spleen is not outlined on this one lateral projection. The stomach and small intestines are moderately distended with gas and granular soft tissue opaque material. This likely indicates recent food intake and ongoing digestion in the absence of reported vomiting or abdominal pain. A moderate volume of semi-formed fecal material is noted in the lumen of the colon. No evident abnormalities are noted of the included caudal thorax. The included musculoskeletal structures appear unremarkable. CONCLUSIONS: 1. There is strong suspicion for presence of a small volume of radiopaque sediment within the lumen of the urinary bladder. Associated cystitis is a consideration. Presence of a bladder or urethral mass is not excluded. 2. No further abnormalities are noted of the abdominal cavity based on limited assessment. RECOMMENDATIONS: If clinical signs persist with medical management and supportive care, ultrasound of the urinary tract would be recommended. Urinalysis and culture are recommended. Primary Question to Be Answered in This Exam: Cause of chronic incontinence, polyuria, incontinence

ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN

Urinary System

The urinary bladder is well distended. The wall is moderately thickened and varies between 1.5 mm to 8.2 mm. The mucosa is irregular, and multiple protrusions of the mucosa are observed. The latter are highly suggestive of polyps. Multiple cystoliths of variable size are present within the lumen, for example, 0.37 cm, 0.42 cm, 1.2 cm and 1.1 cm, etc. A large amount of sediment is also observed. There is no evidence of an obstruction.

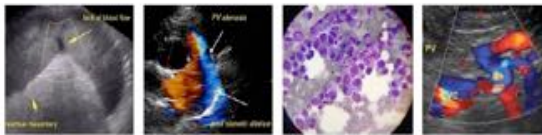
Kidneys

The **left** kidney measures at least 3.85 cm. The capsule is smooth. The cortex is mildly hyperechoic and a mild loss of the normal definition of the cortico-medullary junction is present. Multiple mineralizations of the diverticulae and pelvis are present, without evidence of nephroliths or pyelectasia. An accumulation of intrapelvic fat is noted. Blood flow is excellent, but not increased. The surrounding mesentery is not hyperechoic.

The **right** kidney measures 4.76 cm. The capsule is smooth. The cortex is mildly hyperechoic and a mild loss of the normal definition of the cortico-medullary junction is present. Multiple mineralizations of the diverticulae and pelvis are present, without evidence of nephroliths or pyelectasia. An accumulation of intrapelvic fat is noted. Blood flow is excellent, but not increased. The surrounding mesentery is not hyperechoic.

Aortic bifurcation/trifurcation

No abnormalities observed.



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Adrenal Glands

The **left** adrenal gland measures 0.45 cm at the cranial pole, 0.46 cm at the caudal pole and 1.64 cm in length. No abnormalities are noted with the gland's overall architecture, echogenicity or echotexture. The phrenico-abdominal vein and surrounding vasculature and mesentery are unremarkable.

The **right** adrenal gland measures 0.55 cm at the caudal pole. A measurement of the cranial pole is difficult to evaluate due to the gas in the surrounding gastrointestinal tract. No abnormalities are noted with the gland's overall architecture, echogenicity or echotexture. The phrenico-abdominal vein and surrounding vasculature and mesentery are unremarkable.

Spleen

The spleen is within normal limits in size, architecture, echotexture, and echogenicity. The capsule is smooth. No abnormalities are observed with its vasculature, i.e. congestion and thrombi are not identified.

Liver

There are no obvious signs of hepatomegaly and its borders are smooth and sharp. The liver's echotexture is homogeneous and it is within normal limits in echogenicity. No abnormalities are observed with the hepatic vessels visualized.

The gallbladder is mildly dilated. The wall is within normal limits in thickness and echogenicity. A small amount of echogenic material is present within the GB. The portions of the cystic and/or common bile ducts observed are not dilated or tortuous, i.e. there are no signs of an obstruction.

Gastrointestinal

Ingesta and gas are present within the lumen of the stomach. The gastric wall is within normal limits in thickness and the wall layers are well defined. No obvious abnormalities are observed with its peristalsis.

The small intestinal wall thickness, including the duodenum, is within normal limits and the definition of the wall layers is preserved. Abnormally dilated loops of bowel are not observed.

The colonic wall is not thickened and mural detail is considered normal.

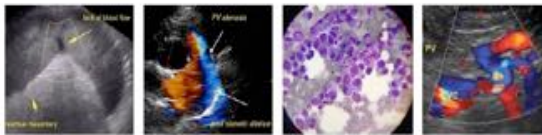
Pancreas

No overt abnormalities are observed with the echogenicity or echotexture of the pancreas. There is no evidence of hyperechogenicity of the surrounding mesentery, i.e., signs of active pancreatitis are not present.

Other

Lymph nodes

No abnormalities are observed



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Abdominal effusion is not visualized.

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ULTRASONOGRAPHIC FINDINGS

- Multiple cystoliths are present within the urinary bladder, in addition to a moderately thickened and irregular bladder wall. Polyploid cystitis is suspected secondary to the presence of cystoliths, however, a chronic urinary tract infection cannot be excluded. There are no obvious signs of an obstruction or neoplasia.
- Mild renal changes are present, which are suggestive of age related degeneration, in addition to mineralizations. There are no obvious signs of pyelonephritis.
- The presence of sludge in the gallbladder may not be clinically insignificant, however, some dogs may show clinical signs of gastroesophageal reflux disease (GERD), therefore, obtaining a history regarding signs of GERD from the client is suggested. Treatment with an anti-acid, proton pump inhibitor or ursodeoxycholic acid may be required depending on Ellie May's history.

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

Obtaining a history regarding signs of GERD from the client is suggested. Treatment with an anti-acid, proton pump inhibitor or ursodeoxycholic acid may be required depending on Ellie May's history.

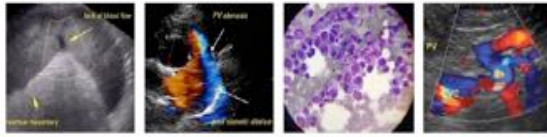
Surgical removal of cystoliths may be achieved by performing a cystotomy or by percutaneous cystolithotomy (PCCL). With either procedure, cultures of the mucosa of the urinary bladder and a cystolith are suggested to exclude an underlying infection. The cystolith may be pulverized and the powder then mixed with the mucosa to decrease costs.

Gabapentin and buprenorphine or methadone are suggested to decrease Ellie May's discomfort and pollakiuria. A short course of a non-steroidal anti-inflammatory may be required to help decrease inflammation, however, it should be discontinued 5-7 days prior to surgery.

Evaluation of the conformation of Ellie May's vulva and perivulvar region is recommended. Basic hygiene should be pursued on a daily basis with chlorhexidine 0.025-0.05%, rinsed with luke warm water, and ensuring the area is kept dry to decrease risk of infection. Any fur in the surrounding area should also be trimmed to decrease risk of bacterial wicking.

It is will be very important that Ellie May drinks an adequate amount of water following removal of the cystoliths, to prevent the development of further mineralizations, kidney or bladder stones. The goal is to decrease the specific gravity less than 1.020.

Feeding Ellie May multiple times a day will stimulate her to drink more frequently, i.e. dogs tend to drink after having eaten.



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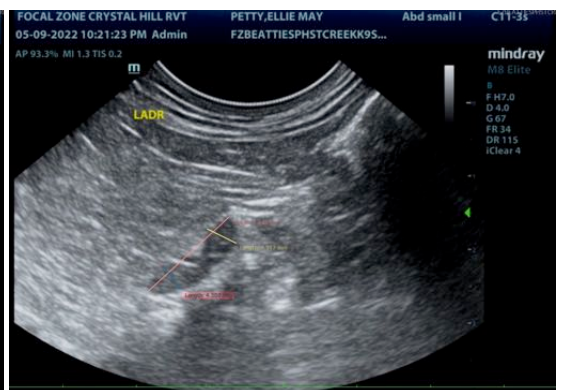
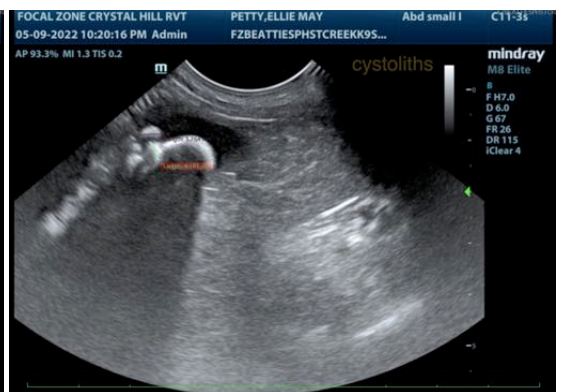
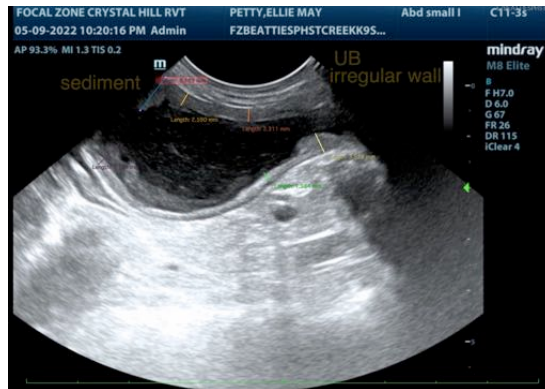
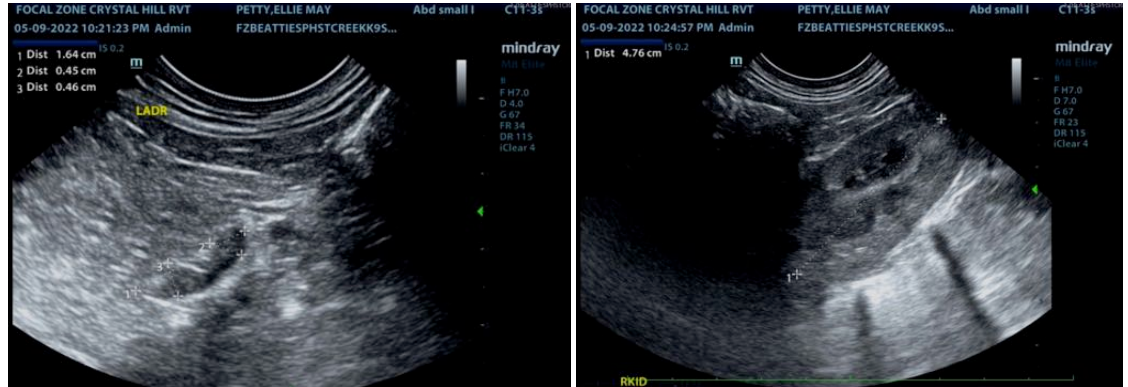
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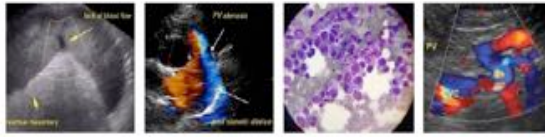
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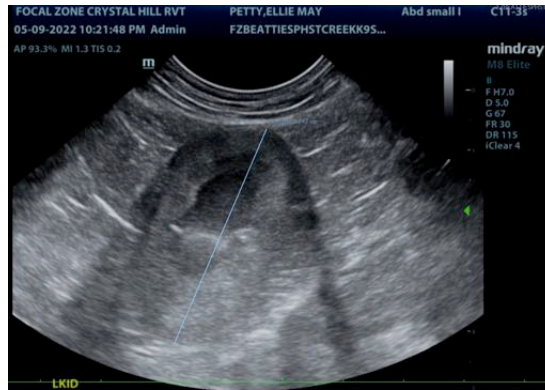
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The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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.

Lisa Carioto, DVM, DVSc, Diplomate ACVIM

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