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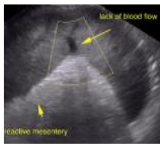
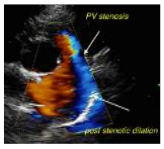
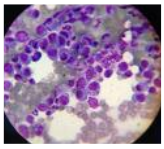
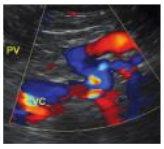

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1-800-838-4268 info@sonopath.com

PATIENT

Maddie McEwan

SPECIES

Feline

BREED

DSH

SEX

Spayed Female

AGE

13 Years

WEIGHT

4 kg

INTERPRETED BY

R. McKenzie Daniel, DVM, DABVP (Canine and Feline)

IMAGING PERFORMED BY

Patti Mayfield, DVM

HOSPITAL NAME

La Paw AH

REFERRING VET

Deb La Paugh, DVM

INVOICE

21899

DATE

4/5/23

PRESENTING CLINICAL SIGNS

History: Patient has been eating Royal Canin SO for ~ 2 years due to feline housemate's urinary issue needs. Patient has no pph of clinical signs related to urinary tract health. -- Patient was noted to be losing weight and hyporexic (~ 0.5# in 1 month) in late February of 2023. -- Incidental finding of cystic calculi upon obtaining urine for analysis via cystocentesis. -- Patient had cystotomy performed (3/1/23) to remove 6 stones; analysis revealed Ca oxalate monohydrate (body) and mixed CaOx dihydrate (30%)/CaOx monohydrate (70%) shell. -- Post-op rads were obtained and revealed no further stones within the urinary bladder, however concerns for ureterolithiasis detected. -- Patient is reportedly much happier following surgery, but continues to have intermittent hyporexia and has not gained back weight.

Abnormal PE/Chem/CBC/UA Results: PE: Unremarkable exam Blood work (2/22/23): CBC: -- mild eosinophilia CHEM: -- mild hyperalbuminemia -- CK slightly elevated T4; wnl UA: -- pH: 6.0, hematuria, elevated microalbuminuria Bladder wall culture: NEG for growth Stone Analysis: -- Ca oxalate monohydrate (body) and mixed CaOx dihydrate (30%)/CaOx monohydrate (70%) shell. RAD: -- Evidence of renolithiasis in bilateral kidneys and possible ureterolithiasis. No additional uroliths observed. Remainder of abdominal rads unremarkable.

ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN

Urinary System

The urinary bladder, trigone, cystourethral junction, and visible pelvic urethra to a depth of 2.0 cm exhibited normal thickness and tone. Primarily anechoic urine was present in the lumen. Mild nondependent particulate sediment was present without evidence of calculus formation. No evidence of inflammatory or neoplastic mural changes were noted. No evidence of recurrent calculi was noted.

Normal size and margination were present in the kidneys. A normal 1:3 cortex / medulla ratio was maintained. The medulla and cortices were uniform in texture with some increased echogenicity and mild loss of corticomedullary symmetry and definition expected for the age of the patient. No evidence of pyelectasia was present. Focal to minor medullary mineral to small renoliths were noted. The left kidney measured 3.7 cm in length. The right kidney measured 3.4 cm in length. Bilateral cortical infarcts were noted. Focal nonobstructive ureterolithiasis was noted, with potential for associated ureteritis. An example of ureterolith measured 0.67 cm in diameter. It was unclear if the ureteroliths were left, right or bilateral.

Adrenal Glands

The left adrenal gland was uniform in size and contour with a uniformly hypoechoic parenchyma. The left adrenal gland measured 0.34 cm.

The right adrenal gland was uniform in size and contour with a uniformly hypoechoic parenchyma. The right adrenal gland measured 0.44 cm.

Spleen

The spleen exhibited a finely textured and homogenous parenchyma which was hyperechoic to the liver and renal cortical parenchyma. The capsule was smooth and regular without apparent expansion. The splenic vasculature at the hilus was normal in volume with no evidence of congestion or thrombosis. Acute to chronic inflammatory, neoplastic, or benign parenchyma changes were not noted. The spleen measured 0.73 cm in width at the level of the hilus.

Liver

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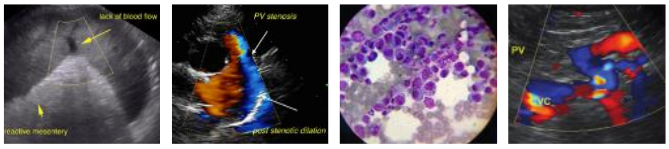

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The liver was subjectively normal in size, structure, and contour. The liver parenchyma was uniform and hypoechoic to the spleen with a mild coarse echotexture. The hepatic and portal vasculature were normal in appearance without signs of congestion. Normal hepatic vascular volume was present.

The gallbladder was non-distended in size with thin walls and primarily anechoic luminal content. The cystic and common bile ducts were normal.

Gastrointestinal

The stomach presented intact wall layering with a normal wall layer ratio. The lumen of the stomach contained mild nonshadowing ingesta. The pylorus wall measured 0.26 cm.

The small intestine exhibited generalized intact wall layering with propensity for generalized mildly prominent muscularis layer. No evidence of loss of intestinal wall layering or intestinal masses. The jejunum wall measured 0.25 cm – 0.28 cm. The ileocolic wall measured 0.39 cm. The duodenum wall measured 0.22 cm.

Normal visible colon wall layers were present with apparent formed feces in lumen.

Pancreas

The parenchyma of the left limb, body and right limb of the pancreas presented isoechoic to the adjacent omental fat. A normal curvilinear capsule contour of the pancreas was present. The visible pancreatic duct was normal. No signs of active inflammation or neoplastic disease was evident.

Free Abdomen

No overt lymphadenopathy or peritoneal effusion was present.

ULTRASONOGRAPHIC FINDINGS

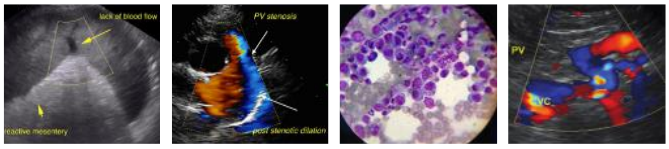
- Urinary bladder sediment
- Chronic renal changes with mild nonobstructive medullary mineral/small renoliths
- Nonobstructive ureterolithiasis with suspect associated mild ureteritis
- Suspect mild inflammatory

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

The urinary bladder sediment may indicate cellular debris/protein, crystalline debris, lipid or mucus. Correlation with urinalysis and culture and sensitivity if evidence of inflammatory sediment criteria.

The confirmed ureteroliths do not appear to be obstructive at this stage, without evidence of left or right renal pyelectasia or hydronephrosis. This may potentially indicate that potential medical management of the ureteroliths may be beneficial. Alternative therapies, depending upon potential emerging obstruction, may include ureteral stenting, or use of a subcutaneous ureteral bypass device.

Sonographically, the small intestine exhibited mild mural changes, which are suggestive of mild inflammatory criteria, which may correlate with the patients gastrointestinal signs and lack of weight gain. Further assessment may include a GI panel to include PLI/TLI/Cobalamin/Folate. However, given the lack of gastrointestinal signs, or definitive weight loss, there is potential for intestinal patient variant.



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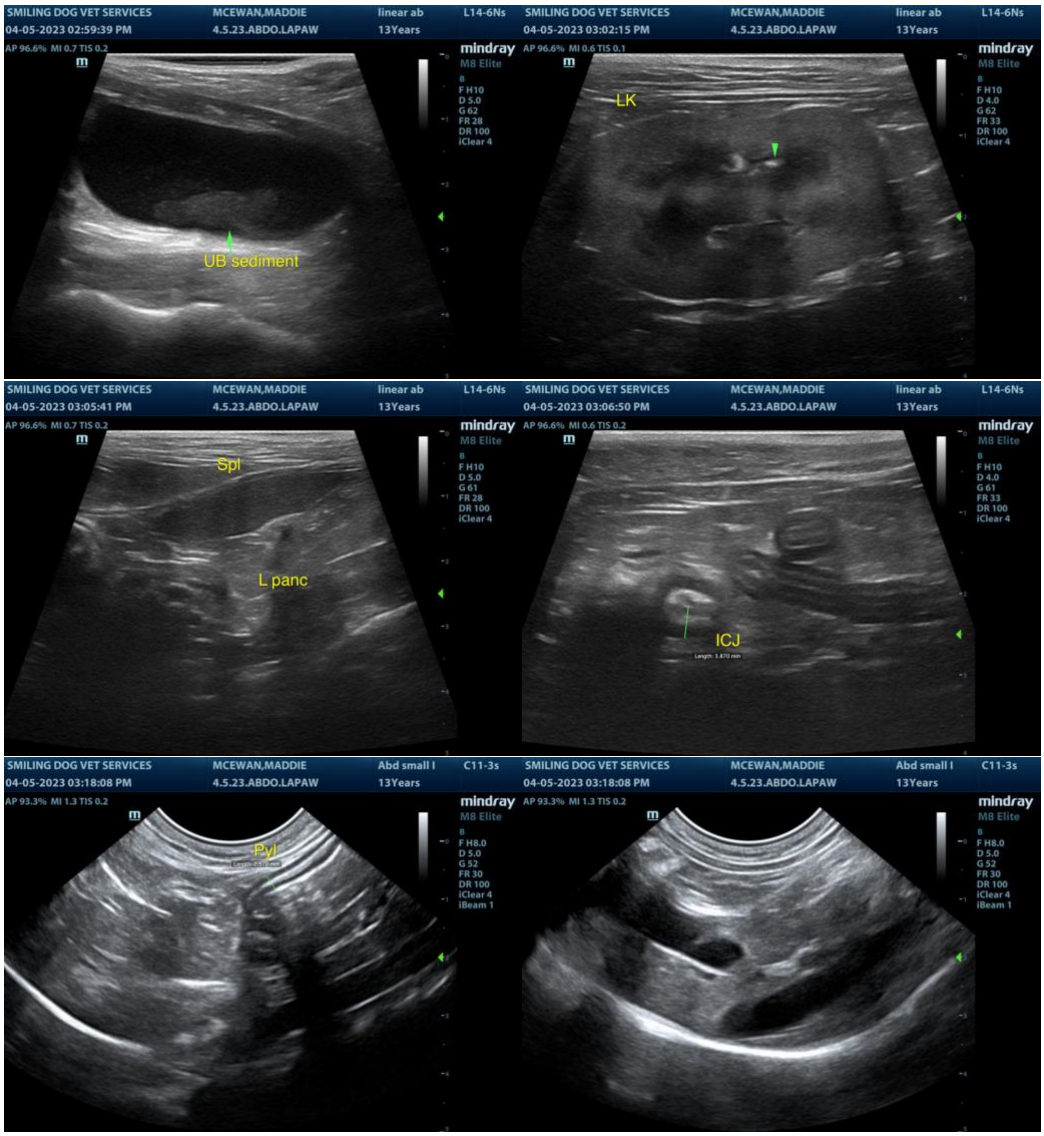
If intestinal biopsies are elected, ureteral surgery could be considered. Alternatively, if ureteral surgery is elected initially, full thickness intestinal biopsies, at the time of surgery, would be recommended.



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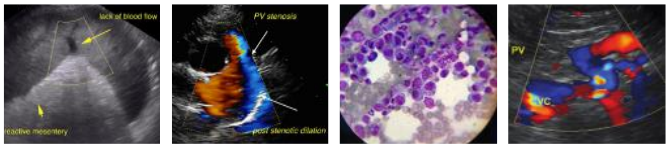

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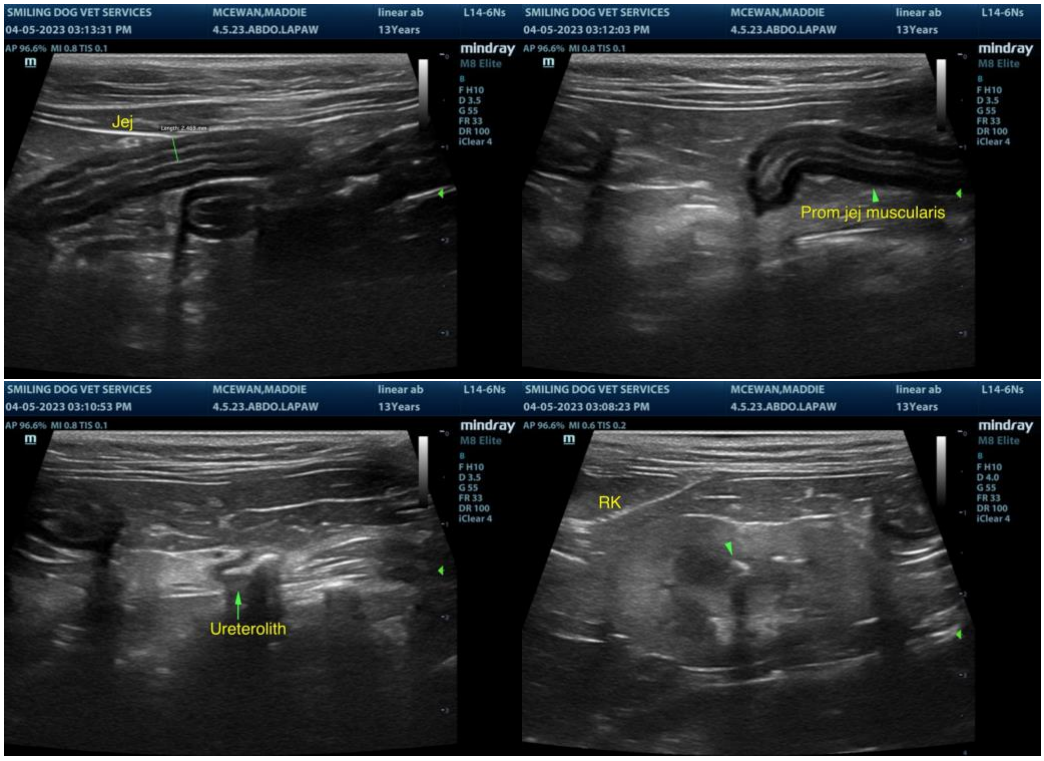

The information and recommendations provided are based on the images presented by the referring veterinarian. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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.

R. McKenzie Daniel, DVM, DABVP (Canine / Feline Practice)
info@SonoPath.com