



**PATIENT PRESENTING CLINICAL SIGNS**

Mouse Allen

**SPECIES**

Canine

**BREED**

Rat Terrier

**SEX**

Spayed female

**AGE**

13 years

**WEIGHT**

16.6 lbs

**INTERPRETED BY**

Eric Lindquist, DMV  
DABVP, Cert. IVUSS

**IMAGING PERFORMED BY**

Dr. Kitz

**HOSPITAL NAME**

Woodlands AH

**REFERRING VET**

Dr. Kitz

**INVOICE**

44030

**DATE**

4/26/23

History: Patient has had history of chronic renal insufficiency for a few years. She had been eating strictly k/d canned food for while and was stable. Owner recently noted lethargy, decreased appetite, urinary accidents in the house, pollakuria, and gross hematuria. She was diagnosed via culture from cysto with an E.coli cystitis - and was tx with a course of antibiotics. However, she still persisted with blood in the urine despite antibiotic therapy, so an initial ultrasound was recommended where a suspected stone was observed, and possibly pyelonephritis. Radiographs confirmed single small radiopaque stone. Pet has been on mixture of k/d canned and Royal canin s/o senior pet canned, and antibiotic based on the recent MIC panel for 21 days. Recheck ultrasound performed to follow up - no change at all in the stone, urine pH is 6.0 so suspected calcium oxalate. Pet has been improved in energy and owner is no longer seeing blood in the urine or increased frequency of urination/accidents with the current therapy - but not seeing much change in the appearance of things. owner does not want to proceed with cystotomy. We discussed possible hydropropulsion to flush out the stone so we can submit it for analysis and hopefully prevent recurrent inflammation, pain, and infections. I'm looking for guidance on how to proceed with potential management of pyelonephritis - continue antibiotics vs. reculture and stop if negative?  
Abnormal PE/Chem/CBC/UA Results: Creatinine - 1.9 BUN - 35 HCT - 35% K-6.2 Na-147 calcium normal ----- urine PH - 6.0, USG - 1.010 ----- small stone in urinary bladder lumen

**ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN**

**Two studies were evaluated. One was on 3/28/23 and the other was on 4/20/23.**

3/28/23

The left kidney revealed moderate degenerative changes with pyelectasia that measured 1.4 x 0.68 cm. The right kidney revealed pyelectasia that measured 1.5 x 0.5 cm with pelvic calculus. Pelvic urethra calculus was noted and measured 1.0 cm caudal to the cystourethral junction. The right kidney was subnormal in size and measured 3.2 cm. The left kidney was relatively normal in size and measured 4.7 cm. Moderate degenerative changes were noted. The renal pelvises were largely anechoic; however, embedded infection is a potential. Pyelectasia in both kidneys may be owing to scarring of the renal pelvis from passage of calculi.

4/20/23

The follow up sonogram revealed left kidney measured 4.8 cm with pyelectasia of 1.67 x 0.44 cm. Slightly reduced pyelectasia was noted compared to the prior sonogram. The right kidney measured 4.2 cm with pyelectasia that measured 1.5 x 0.5 cm and is essentially normal to the prior sonogram. Bladder calculi were present. Calculus in the mid body of the bladder measured 0.43 cm. No obstructive disease was noted. The bladder and lower urinary tract were normal. The pelvic calculus in the right kidney appears to have passed into the lower urinary tract as right renal calculi were not overtly present.

**ULTRASONOGRAPHIC FINDINGS**

The patient is passing calculi with secondary degenerative changes.



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**INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS**

The level of infection in the renal pelvises is difficult to ascertain. Unusually aggressive primary pyelonephritis carries echogenic fat in the renal pelvises which is not present in either image set in this patient and the urine in the renal pelvises appears to be anechoic, which would limit the potential for infection. However, the evidence of infection in the kidneys and lower urinary tract should be based on urinalysis results and inflammatory sediment. If any inflammatory sediment is present in the urine, presumed imbedded infection in the kidneys is likely given the chronic changes. I recommend cystostomy, stone analysis and culture. It is difficult to ascertain whether the calculus that was present in the original image set in the urethra is the calculus that is currently present in the bladder body. However, the calculi in the right kidney appeared to have passed. Periodic passage of calculi are likely an issue in this patient. It is debatable on whether the current bladder calculus can be passed without surgery as it is at the upper limits or normal. If any evidence of UTI is present then the following protocol is indicated. Eventual stone analysis and culture can be considered. This may be obtained through surgery or potential hydropulsion technique can be considered. However, it is debatable on the safety of the calculus of this size.

**Canine Chronic UTI Protocol**

I recommend **Enrofloxacin** (5-10 mg/kg SID PO) (In patients > 1 year of age) in late pm after urination to maximize urinary concentrations overnight. This assumes that culture supports this use. Repeat **culture** at 3-4 weeks and continue treatment at least 7-10 days post negative urinary sediment and negative culture. *Note: Negative culture does not necessarily mean lack of UTI.* Other favorite antibiotics for chronic UTI include third generation Cefa (Ceftiafur or similar s.i.d. injectable) or Clavamox. If suspicion of occult urinary incontinence is present then **phenylpropanolamine (PPA)** (1-2 mg/kg BID) can be employed long term to enhance urethral tone.

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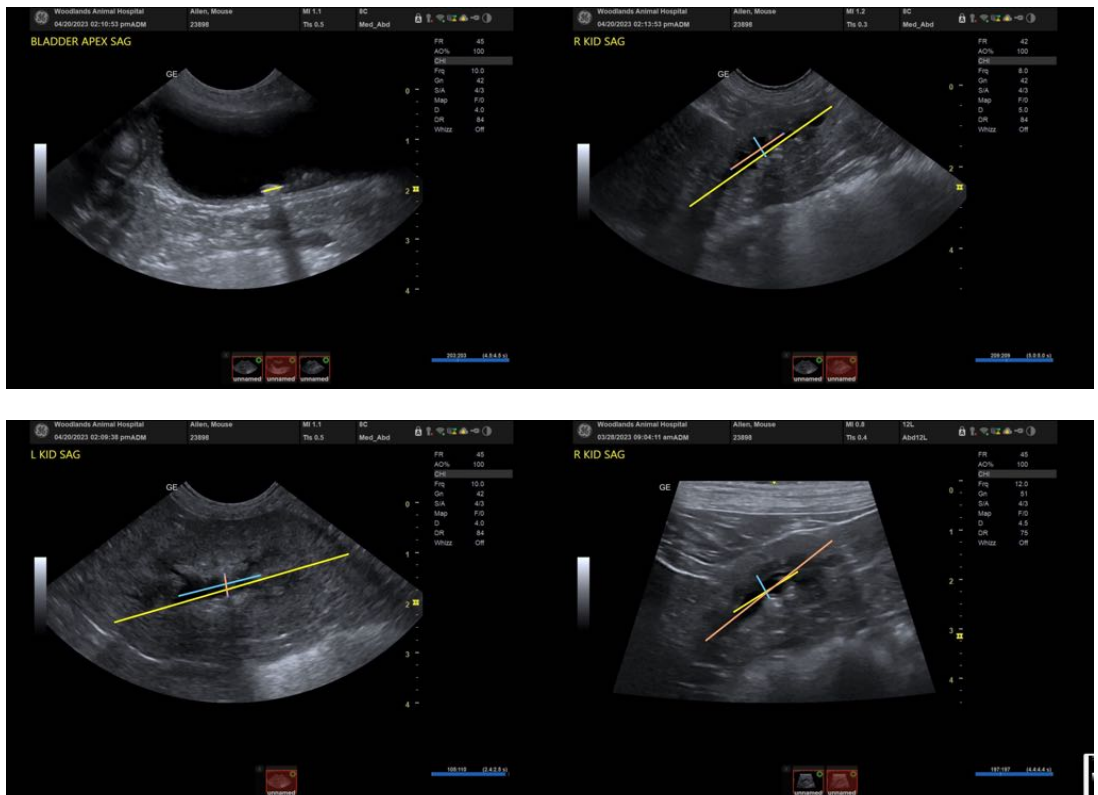
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**PATIENT**

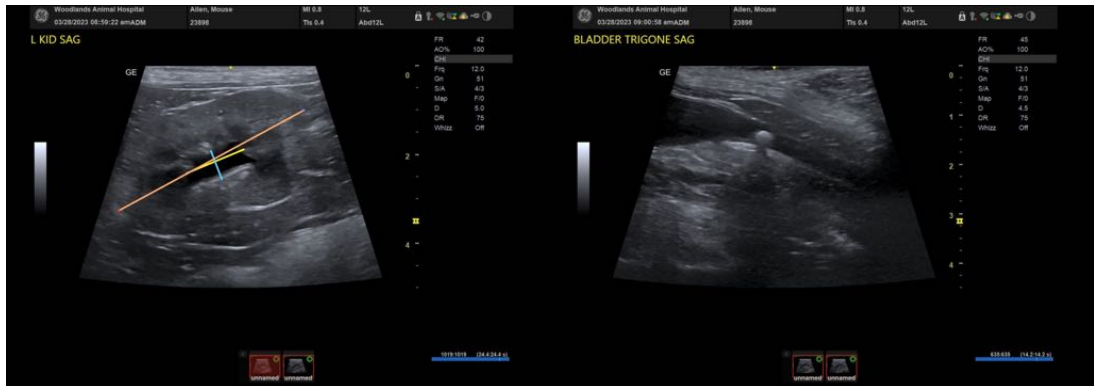
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The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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13 years

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.

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**Eric Lindquist, DMV, DABVP, Cert. IVUSS, CEO of SonoPath.com**  
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