

**PATIENT**

Arthur Clark

**SPECIES**

Canine

**BREED**

Rhodesian Ridgeback

**SEX**

Neutered Male

**AGE**

12 Years

**WEIGHT**

101 Pounds

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

Amy Mayhew, LVT

**HOSPITAL NAME**

SVS Imaging MI

**REFERRING VET**

Oxford Vet Hospital

**INVOICE**

38038

**DATE**

5/26/22

**PRESENTING CLINICAL SIGNS**

Discharge while urinating

Abnormal PE/Chem/CBC/UA Results: Bun 36, urine Pseudomonas aeruginosa 10,000-50,000

Ultrasound performed at OVRS 3/22/22, would like to recheck splenic nodules, and look at bladder wall \*\*See attached records, BW, and previous AUS for comparison.

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

The urinary bladder is moderately distended with echogenic urine. The urinary bladder is diffusely severely thickened and irregular, measuring at 1.9 cm. No focal calculi are visualized. The findings are consistent with severe bacterial cystitis. Recommend urinalysis and culture.

The prostate is large and somewhat irregular and heterogeneous, measuring 3.03 cm with occasional pinpoint foci. Findings are most consistent with an involuted prostate after neutering with previous prostatic disease.

The left kidney is normal in size at 8.62 cm. It has decreased corticomedullary distinction with numerous cortical and intrapelvic mineralizations/stones visualized, and pyelectasia at 0.92 cm. The proximal ureter is dilated, and the ureter can be followed all the way down to the urinary bladder. Mid body it is measured at 0.57 cm with wall thickening, and at the level of the urinary bladder it's measured at 0.77 cm. The insertion point into the urinary bladder is difficult to clearly visualize due to the irregularity of the bladder wall.

The right kidney has a normal shape and size (7.99 cm) with pyelectasia at 0.42 cm and numerous nephroliths, some in the cortical region and some in the pelvis, measuring 0.81, 0.80, 0.59 cm. Overall echogenicity is slightly hyperechoic with poor corticomedullary distinction and a typical 1:3 cortex:medulla ratio. There is no evidence of perinephric inflammation or effusion. There is no evidence of infarcts or hydronephrosis. Renal vasculature is normal.

**Adrenal Glands**

The left adrenal gland is normal in size measuring 0.53 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 0.78 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 large and irregular. The spleen echotexture is heterogeneous and mottled, the splenic capsule is smooth with no irregularities. The blood flow through the hilus and splenic parenchyma appears normal. The parenchyma is irregular and very mottled. It is difficult to delineate some of the lesions previously described. There is a very subtle hypoechoic region in the head of the spleen measuring 2.45 cm (previous ultrasound description of a similar lesion at 2.25 cm x 2.39 cm). Additionally, there is some irregularity mid body, which is of mixed echogenicity and ill-defined, measuring approximately 2.92 cm (a similar lesion is described on the previous ultrasound measuring 2.5 cm), and there is a small ill-defined, hypoechoic irregularity in the tip of the tail, measuring approximately 2.69 cm, possibly consistent with previous infarct.

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**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 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**

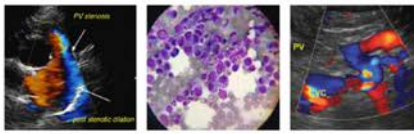
The pancreas is normal and isoechoic to surrounding mesentery. There is no evidence of nodules or cystic lesions. There is no evidence of regional mesenteric inflammation or fluid.

**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.

**ULTRASONOGRAPHIC FINDINGS**

- Decreased corticomedullary distinction in both kidneys with moderately sized nephroliths – Mild loss of corticomedullary distinction in both kidneys could be consistent with chronic degenerative disease or interstitial nephrosis. Both kidneys have numerous shadowing nephroliths. There is no obvious current obstruction noted.
- Bilateral renal pelvic dilation and left-sided hydroureter – Pyelectasia of the left/right kidney could be consistent with pyelonephritis, chronic renal disease, secondary to PU/PD or fluid therapy (if applicable), other. The left ureter can be followed all the way to the urinary bladder and is thick walled and dilated This could be consistent with a previous stricture and subsequent dilation secondary to passing ureteroliths. Additionally, there is the possibility of an ectopic ureter on this side, as the insertion point of the ureter is not clearly visible due to pathology in the area of the urinary bladder, etc.
- Severely thickened, irregular urinary bladder wall – most consistent with chronic cystitis. Recommend urinalysis and culture.



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- Large, irregular, mottled spleen with numerous ill-defined lesions – The diffuse splenic changes are non-specific and could be consistent with lymphoid hyperplasia, extramedullary hematopoiesis, infiltrative neoplasia, inflammation, other. Cytology or histopathology would be necessary to get a definitive diagnosis. These lesions are somewhat difficult to follow, as they are very ill-defined. None of them appear expansile at this time. If there is concern for a current neoplastic process, then consider a fine needle aspirate of the spleen, potentially in the head and body regions.
- Large, irregular prostate with pinpoint mineralizations – most consistent with the previous prostatic disease and involution of the prostate. Recommend continued monitoring.

**INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS**

Both kidneys have numerous stones, pelvic dilation, and there is left-sided hydronephrosis present. These changes are likely a result of the chronic nephrolithiasis, passing stones, etc. Additionally, there is likely a chronic infectious component based on the appearance of the urinary bladder. I was unable to clearly rule out an ectopic ureter. If this is a concern, and surgical repair would be considered, then consider a contrast CT scan to further evaluate this area, as the abnormal bladder wall makes it very difficult to evaluate. If not already done, recommend blood pressure, urinalysis, and urine culture. Diligent reculturing will be necessary in this patient to try and reduce the incidents of resistance. Additionally, I would recommend chronic probiotic therapy to encourage normal bacterial flora.

The spleen is large and irregular and has some very ill-defined nodules. It is difficult to follow these nodules with measurements, as their borders are not 100% clear. There does not appear to be significant change of an expansile nature. If there is concern for an underlying neoplastic process, recommend a fine needle aspirate of the head and mid body of the spleen.

Consider three view thoracic radiographs to rule out concurrent thoracic disease/involvement.

**INTERPRETED BY**

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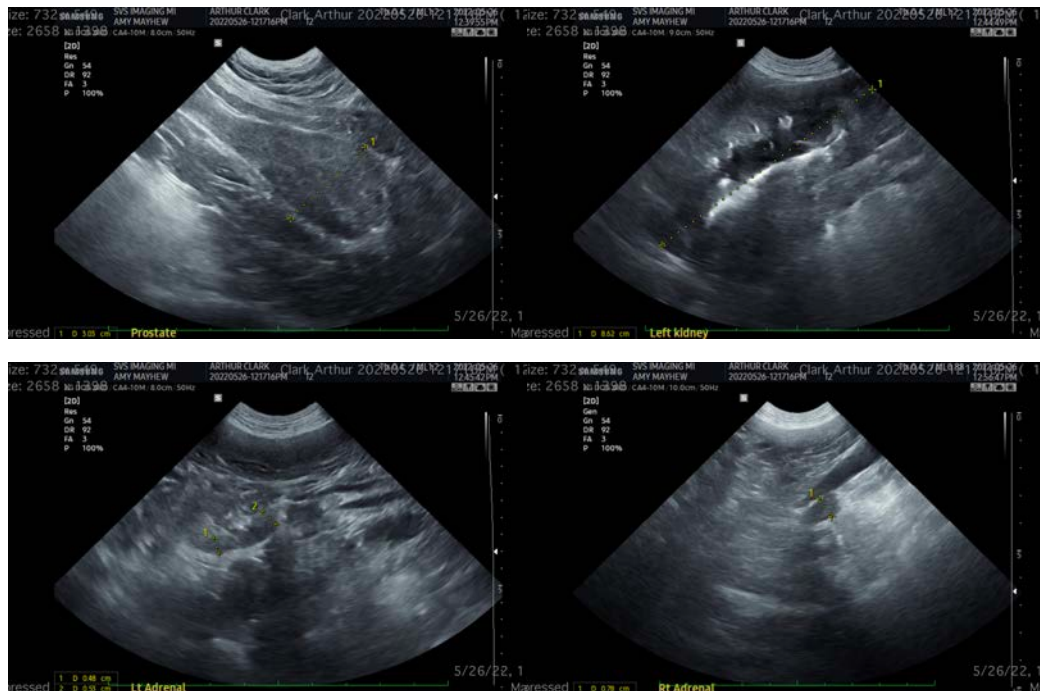
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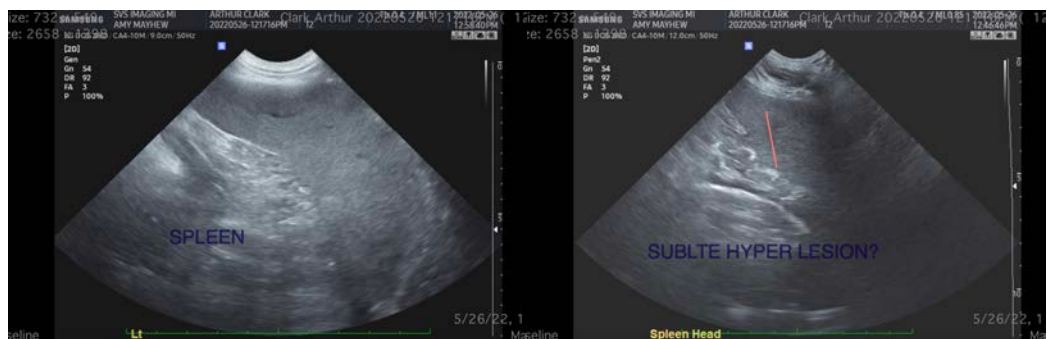
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The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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.

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

kathleen.sennello@sonopath.com