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Clinical Sonography & Telecytology
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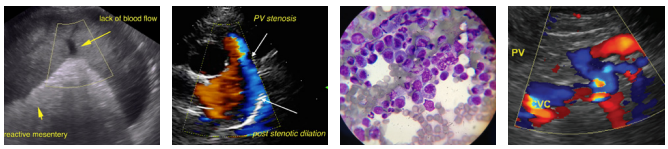


PATIENT
Rogue Erdman

SPECIES
Canine

BREED
Australian Shepherd

SEX
Spayed Female

AGE
14 Years

WEIGHT
55 Pounds

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

IMAGING PERFORMED BY
Tasha

HOSPITAL NAME
Dillsburg VC

REFERRING VET
Dr. Crow

INVOICE
35653

DATE
2/15/22

PRESENTING CLINICAL SIGNS

Recent HX of UTI and transitional cells in bladder
Abnormal PE/Chem/CBC/UA Results: All BW WNL

ULTRASONOGRAPHIC EXAMINATION OF THE HEART & ABDOMEN

CANINE CARDIAC PARAMETERS	MR VMAX (m/s)	TR VMAX (m/s)	LA/AO (Boon method)	LA/AO (Heart Base; Swe)	FS (%)	EF (%)	EPSS (cm)
NORMAL PARAMETER	4.5-5.5	<2.7	1.3	<1.6	28-40	40-100	<0.6
PATIENT			NM	1.4	43.2	77.8	0.25
CANINE CARDIAC PARAMETERS	**HR** (BPM)	**AV VMAX** (m/s)	**PV MAX** (m/s)	**BODY WEIGHT** (kg)	**LA** 2D short axis Base view (cm)	**LVIDd** Avg; 2D and m-mode short axis (cm)	**LVIDs** Avg; 2D and m-mode short axis (cm)
NORMAL PARAMETER	50-100	0.7-1.7	0.7-1.6				
PATIENT	NM	NM	NM		3.5	3.7	

Cardiac Presentation

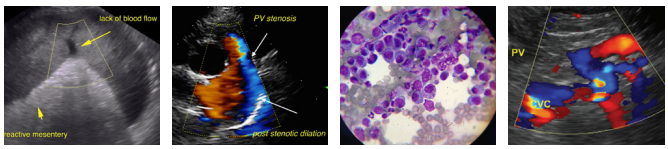
The echocardiogram in this patient demonstrated normal **left atrial** size and structure. Chamber volume and blood echogenicity were normal. The cranial and caudal **mitral** valve leaflets presented minor irregular age-related changes that are not clinically significant at this time with adequate extension in systole and union in diastole. The **left ventricle** presented normal free wall and septal thicknesses with linear contour. The **myocardium** presented some echogenic remodeling consistent with expected age-related change. **Contractility** of the ventricular walls was adequate and in normal range for this breed and patient size. The **left ventricular outflow** tract demonstrated normal laminar flow with subjectively unremarkable structure. Subjective assessment of the **right atrium** and auricle revealed normal size, structure and content. No evidence of masses was noted. **Tricuspid** valvular assessment demonstrated expected findings for this age patient. The **right ventricle** was of normal size (1/3 diameter of LV), echogenicity and thickness. **Pulmonic** tract assessment revealed normal valve structure, laminar flow, and diameter (approx.1:1 pa/ao ratio). No dilation due to heartworm disease, cuor pulmonale, stenosis, or pulmonic hypertension was noted. No visible **pericardial** or free pleural fluid was noted. The **mediastinum** was free of masses in the visible window.

Urinary System

The urinary bladder exhibited normal thickness and tone. Anechoic urine was present in the lumen with no uroliths or sediment. The ureteral papillae were normal. The ureters were not visible which is normal. No evidence of inflammatory or neoplastic changes were noted.

Overt evidence of pathology associated with the proximal urethra was not definitively evident, but cannot be excluded.

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



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mild loss of corticomedullary symmetry and definition expected for the age of the patient. No evidence of pelvic dilation was present. The left kidney measured 5.0 cm. The right kidney measured 5.6 cm.

Adrenal Glands

The left adrenal gland was normal in size. Mild parenchyma heterogeneity and mild capsule asymmetry was present without suspicion for overt neoplasia. The left adrenal gland measured 2.5 cm x 1.0 cm at the caudal pole. The right adrenal gland was not definitively visualized.

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.

Liver

The liver was subjectively normal in size, structure, and contour. The liver parenchyma was mildly nonuniform and hypoechoic to the spleen with a moderate coarse echotexture and subjective mild to benign parenchymal remodeling. The hepatic and portal vasculature were normal in appearance without signs of congestion. 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 was empty with no signs of ileus, obstruction or foreign material.

The small intestine presented intact wall layering with 1:3 muscularis/mucosa ratio. The lumen of the small intestine was empty with no signs of ileus, obstruction or foreign material.

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

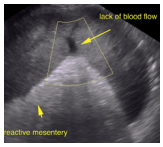
No overt lymphadenopathy or peritoneal effusion was present.

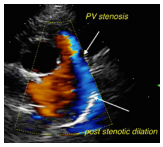
ULTRASONOGRAPHIC FINDINGS

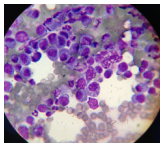
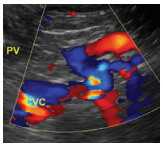
- Overtly normal cardiac structure and function for age
- Bilateral mild chronic renal changes – no overt pyelectasia.
- Sonographically unremarkable urinary bladder

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

Largely geriatric abdomen with minor age related cardiac changes and without evidence of significant abdominal visceral or structural/functional cardiomyopathy. Sonographic reassessment in the area of the cystourethral junction and proximal urethra may be indicated if persistent to progressive UTI signs or evidence of dysuria is noted. Screening BRAF assay may be considered if persistent transitional cells on urinalysis, and if positive, sonographic reassessment with elimination of artifact and with full urinary





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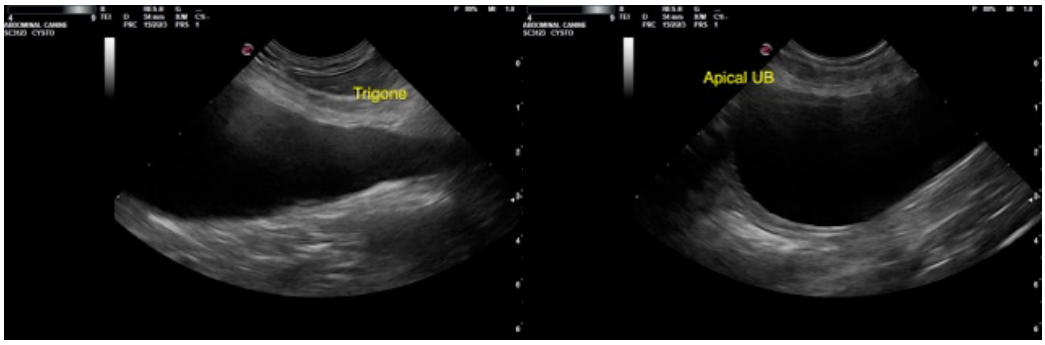
bladder in the area of the cystourethral junction and proximal urethra recommended. Recheck urine culture on sterile urine sample suggested if clinically indicated.

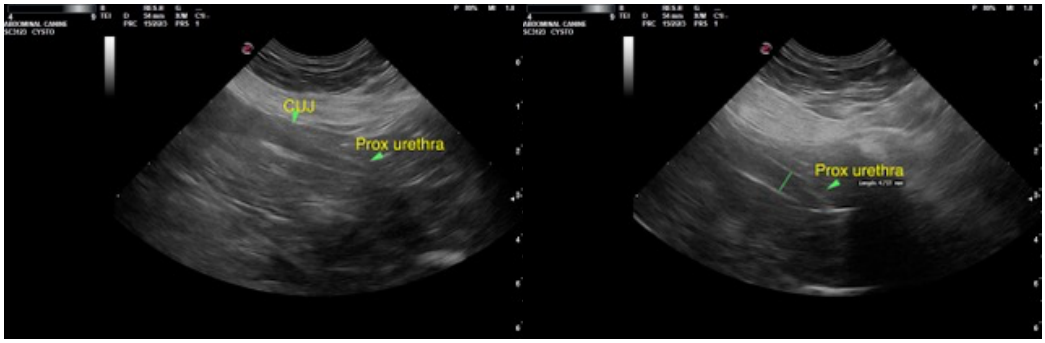
ADDENDUM ADDED 2/22/22

(ADDITIONAL 13 IMAGES OF THE URINARY BLADDER, CYSTOURETHRAL JUNCTION, AND VISIBLE PROXIMAL URETHRA SUBMITTED FOR FURTHER ASSESSMENT.)

Re-examination of the urinary bladder, cystourethral junction and visible proximal urethra to a depth of 2.0 cm revealed no obvious evidence of urinary bladder, cystourethral junction, or proximal urethral lesions. Overtly, the area of the urinary bladder neck and cystourethral junction as well as the visible proximal urethra were subjectively normal with a proximal urethra width measuring approximately 0.47 cm. Apical urinary bladder wall measured 0.32 cm.

Given the positive BRAF assay, a non-obstructive lesion within the non-visualized urethra passed a depth of 2.0 cm could certainly be possible. Cystoscopy is likely ideal here, if possible, for further assessment of the non-visualized urethra. Likewise, examination of the distal urethra in the area of the vaginal vault could be considered. Given that the BRAF assay is reportedly 100% specific for neoplasia (i.e., no false positives), a non-visualized neoplastic process is most likely. Empirically, NSAID trial such as Piroxicam with serial sonographic monitoring (i.e., every two months or so) would be reasonable.





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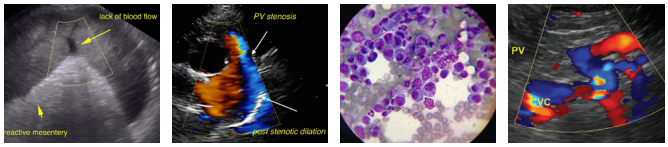

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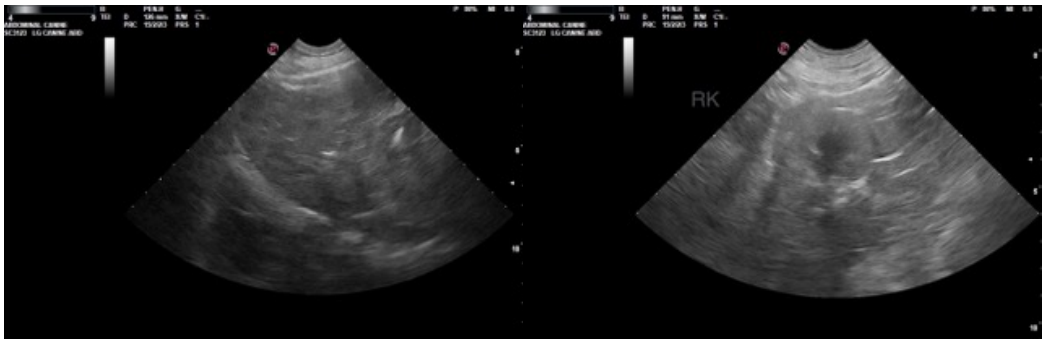

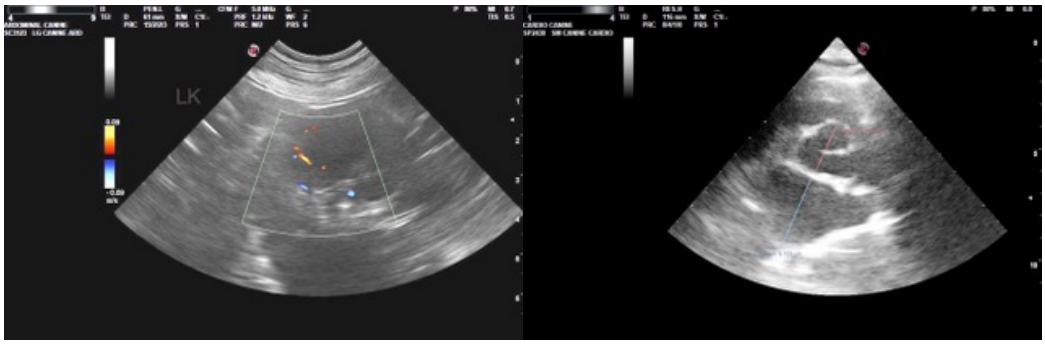

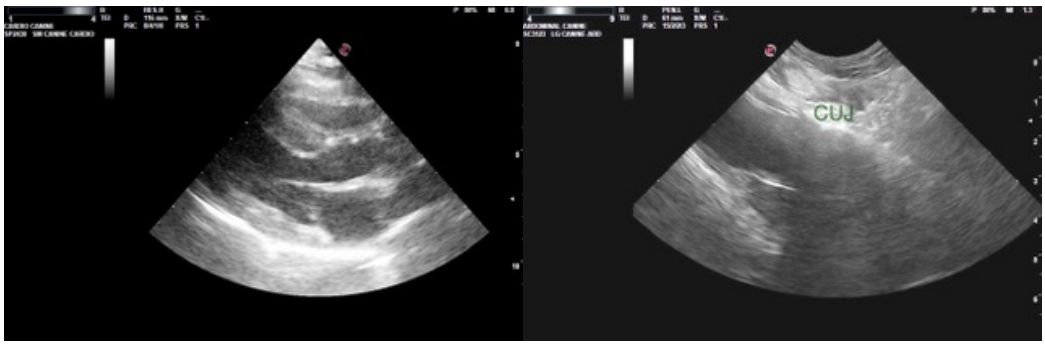

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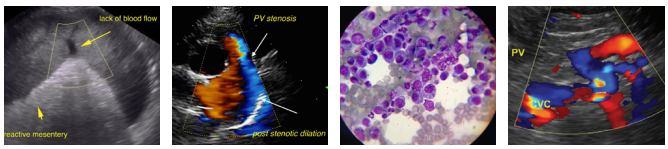

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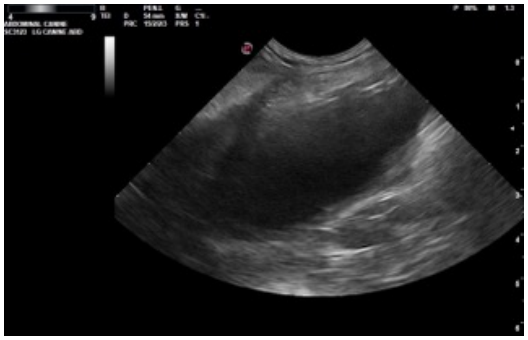

The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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.

R. McKenzie Daniel, DVM, DABVP (Canine / Feline Practice)

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