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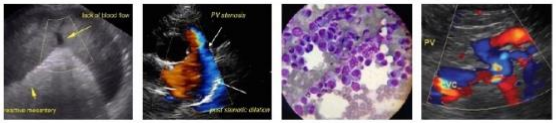


THE FOCAL ZONE
IMAGING PERFORMED BY
289-808-2608 info@thefocalzone.com

PATIENT

Olive Walker

SPECIES

Canine

BREED

Min Poodle

SEX

Spayed Female

AGE

8 Years

WEIGHT

11.3 Lbs.

INTERPRETED BY

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

IMAGING PERFORMED BY

Kelly Reschny

HOSPITAL NAME

Halton Peel AH

REFERRING VET

Walters

INVOICE

13056

DATE

12/14/21

PRESENTING CLINICAL SIGNS

History: suspect bladder stones, CaOx crystals in urine

Abnormal PE/Chem/CBC/UA Results: USG 1.034 ALP 174(5-160)

ULTRASONOGRAPHIC EXAMINATION OF THE HEART & ABDOMEN

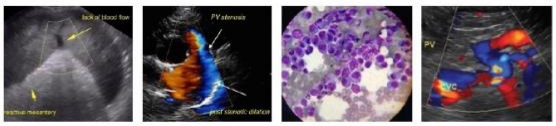
CANINE CARDIAC PARAMETERS	MR VMAX (m/s)	TR VMAX (m/s)	LA/AO (Boon method)	LA/AO (Heart Base; Swe)	FS (%)	EF (%)	EPSS (cm)
NORMAL PARAMETER	4.5-5.5	<2.7	1.3	<1.6	28-40	40-100	<0.6
PATIENT	--	2.0	NM	1.42	41.8	75.8	0.1
CANINE CARDIAC PARAMETERS	**HR** (BPM)	**AV VMAX** (m/s)	**PV MAX** (m/s)	**BODY WEIGHT** (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	122	2.0	1.5	--	2.1	2.0	--

Cardiac Presentation

The echocardiogram in this patient demonstrated normal **left atrial** size based on 3 separate methods of LA evaluation. The cranial and caudal **mitral** valve leaflets presented minor vegetative thickening with normal extension in systole, and union in diastole with normal kinesis. Color doppler assessment revealed trace mitral valve insufficiency. The **left ventricle** presented thicknesses with linear contour and was not dilated nor restricted. The **myocardium** presented normal echogenicity without subjective evidence of significant fibrotic or ischemic disease. **Contractility** of the ventricular walls was adequate and in normal range for this patient evidenced by the fractional shortening measurement and subjective evaluation of the different regions of the myocardium. The **left ventricular outflow** tract demonstrated normal laminar flow and subjective structural integrity. The **right atrium** and auricle revealed normal size, structure and content. No evidence of masses was noted. **Tricuspid** valvular assessment demonstrated adequate linear morphology and kinesis. Color doppler assessment revealed trace tricuspid valve insufficiency. The **right ventricle** was of normal size (1/3 diameter of LV), chordae structure, myocardial echogenicity and thickness. **Pulmonary outflow** tract assessment revealed normal valve structure, laminar flow, and diameter (approx.1:1 pa/ao ratio). No visible **pericardial** or free pleura fluid was noted. The cranial **mediastinum and pericardial and extra-cardiac regions** were free of masses in the visible window.

Urinary System

The urinary bladder, trigone, cystourethral junction, and visible pelvic urethra to a depth of 2.0 cm exhibited normal thickness and tone. Mild dependent mineral/sand was present. The sand appeared to be mobile and subjectively changed shape and appearance in different videos. Solitary small calculus



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possible yet thought less likely. The ureteral papillae were normal. The ureters were not visible which is normal. No evidence of inflammatory or neoplastic changes were noted.

Normal size and margination was present in the kidneys. A normal 1:3 cortex / medulla ratio and normal corticomedullary definition were maintained. The echogenicity of the cortex was similar to or slightly less than normal liver parenchyma while the medulla echogenicity was hypoechoic to the cortex with no evidence of pelvic dilation. Areas of nonobstructive medullary mineral, primarily in the lateral diverticuli were present. The left kidney measured 3.8 cm in length. The right kidney measured 4.4 cm in length.

Adrenal Glands

The left adrenal gland was uniform in size and contour with a uniformly hypoechoic parenchyma. The left adrenal gland measured 0.40 cm width at the caudal pole and 0.41 cm width at the cranial pole.

The right adrenal gland was uniform in size and contour with a uniformly hypoechoic parenchyma. The right adrenal gland measured 0.62 cm at the caudal pole.

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 exhibited mild generalized enlargement. The parenchyma of the liver was subjectively normal in echogenicity compared to the spleen and renal cortices. The liver parenchyma was uniform with a mildly coarse echotexture. The capsule of the liver was symmetrically rounded to mildly swollen in margination. The hepatic and portal vasculature were normal in appearance without signs of congestion.

The gallbladder was non distended in size with mild non-dependent echogenic, yet non-organized debris. The cystic duct and common bile ducts were normal without evidence of dilation. No evidence of gallbladder or peripheral inflammation.

Gastrointestinal

The stomach presented intact wall layering with a normal wall layer ratio. Mild non-shadowing ingesta/chyme was present.

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.

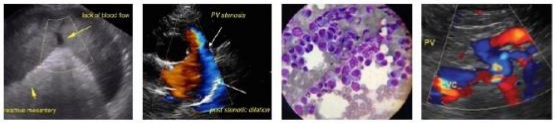
Normal visible colon wall layers were present with apparent formed feces in lumen.

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.

ULTRASONOGRAPHIC FINDINGS

Cardiac Findings



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- Overtly normal cardiac structure and function
- Mild MR/TR

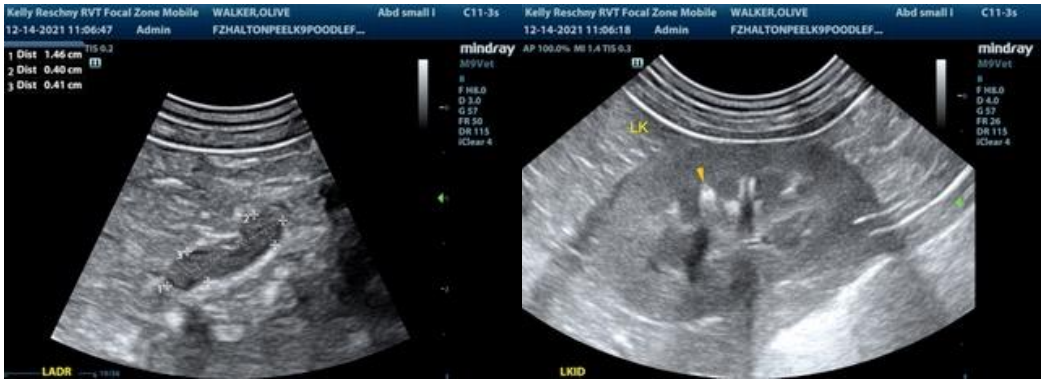
Abdominal Findings

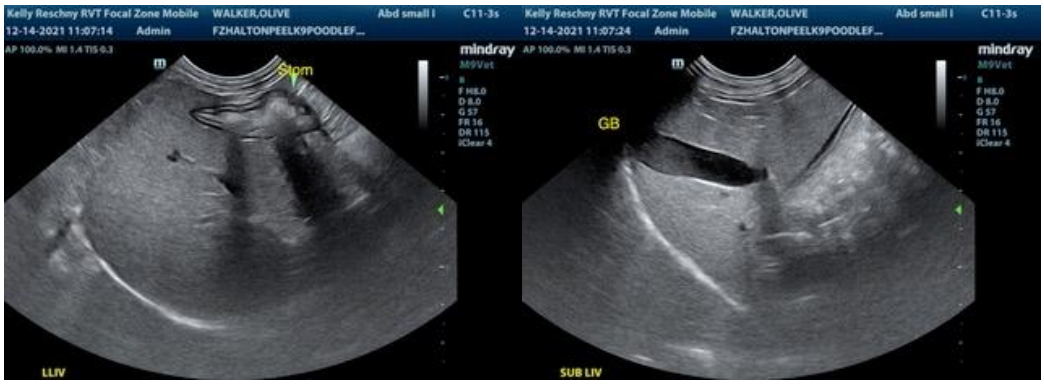
- Mild urinary bladder mineral/sand
- Non-obstructive renal medullary mineralization
- Low-grade hepatopathy- suggestive of mild vacuolar hepatopathy
- Minor gallbladder debris (non-mucocele)

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

Overall normal echocardiogram without evidence of left or right heart chamber enlargement, systolic dysfunction or evidence of clinical pulmonary hypertension. No indication for cardiac medications.

This patient may be passing small amounts of mineral from the kidneys into the urinary bladder. Urine culture and sensitivity on sterile urine sample is warranted. No overt secondary cystitis or other urinary bladder mural pathology evident. If the mineral is calcium oxalate, dissolution is unlikely yet continued monitoring at this time would be appropriate. Recheck sonogram to assess for progressive urinary bladder mineral could be considered if evidence of stranguria or dysuria or similar.





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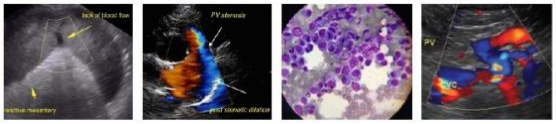

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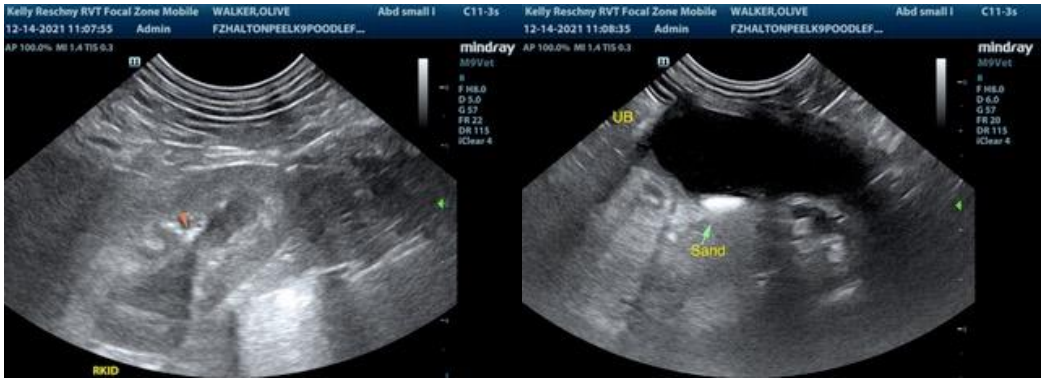

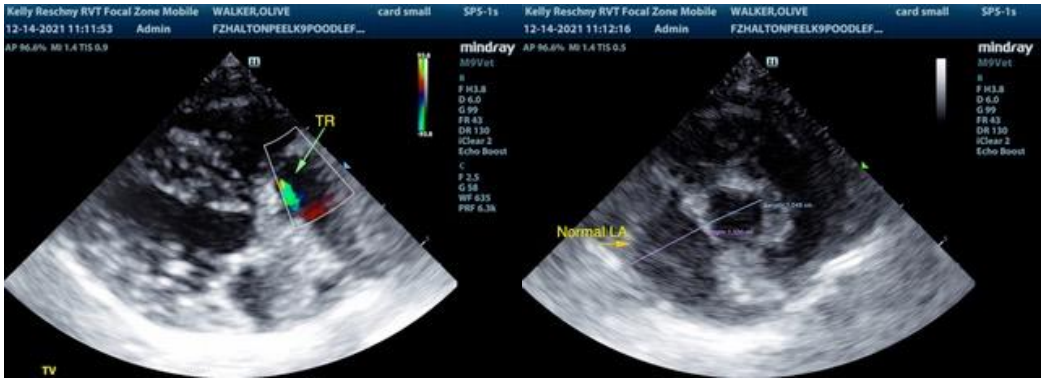

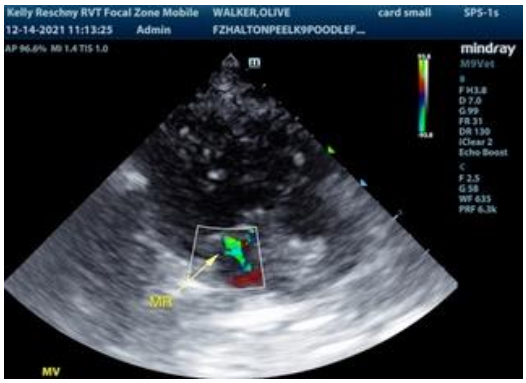

The information and recommendations provided are based on the images presented by the referring veterinarian. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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)
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