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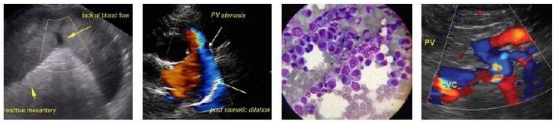

THE FOCAL ZONE
IMAGING PERFORMED BY
289-808-2608 info@thefocalzone.com

PATIENT

Pugsley Marley

SPECIES

Canine

BREED

Pug Mix

SEX

MN

AGE

12yr

WEIGHT

10.8kg

INTERPRETED BY

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

IMAGING PERFORMED BY

Kelly Reschny

HOSPITAL NAME

Oxford County VC

REFERRING VET

Dr. Halfon

INVOICE

11165ag

DATE

07/24/2022

PRESENTING CLINICAL SIGNS

History: Past echo Ultrasound: Oct 2020 - Chronic degenerative valve disease causing moderate mitral regurgitation. Pancreatitis March 2022 Heart murmur Grade IV/VI Past Abdominal Ultrasound March 2022 - Abdominal ultrasound: 71 still images, 18 video loops. Dated March 20, 2022. FINDINGS: There is a solitary, 10 mm x 6 mm hypoechoic nodule within the dorsal liver adjacent to the diaphragm. The hepatic parenchyma otherwise has a normal even granular echogenicity throughout. The gallbladder is moderately distended,containing anechoic bile and nonshadowing echoic sediment. A 12 mm x 6 mm oval-shaped nonshadowing echoic structure can be seen centrally located within the gallbladder. The gallbladder wall is not thickened. The spleen has a normal even granular echogenicity throughout and is not appear to be significantly enlarged. The left and right kidney show normal corticomedullary differentiation, and no renal pelvic dilation is evident. The left and right adrenal glands are of normal shape and size (caudal pole left adrenal 4.1 mm, right adrenal 5 mm) The bladder is moderately distended and contains nonshadowing echoic sediment suspended throughout. The bladder wall is not thickened. A thin-walled anechoic, oval-shaped structure measuring 8 mm x 3 mm can be seen associated with the ventral bladder wall in the region of the trigone. On 1 of the images of the bladder (5.51:22pm) a small triangular anechoic structure can be seen adjacent to the bladder wall and resembles minimal free fluid adjacent to the bladder. The prostate is not enlarged (13 mm diam x 22 mm length) The stomach contains gas and minimal fluid; the visible gastric wall is not significantly thickened. The gas content partly obscured is a small amount of echoic shadowing material within the stomach. Duodenal wall shows normal layering, and does not appear to be significantly thickened. There is slight undulation of its course, without evidence of plication. A thin, 6 mm long, shadowing hyperechoic structure can be seen within duodenal lumen. Jejunum shows normal layering without significant wall thickening. The jejunal loops appear to be relatively empty. There is hyperechoic shadowing material within the colon, the colon wall is not thickened. On 1 of the images of the colon, there does appear to be undulation of the colon wall consistent with a peristaltic wave coincident with the image. No abnormalities are seen associated with the pancreas indicative of inflammation. No abnormalities are seen affecting the peripancreatic tissue. CONCLUSIONS: There are no changes indicative of pancreatitis. There is a hyperechoic shadowing structure within duodenal lumen. This may represent a small bone fragments or other foreign objects. It does not appear to be associated with duodenal obstruction; sequential ultrasound may be considered to confirm its continued passage into jejunum. The undulation/corrugation of the duodenum was knocked indicative of plication. This is a nonspecific finding which can be associated with local inflammation (e.g. duodenitis, pancreatitis). There does appear to be a thin-walled cystic structure associated with the ventral bladder wall in the trigone region, which is of uncertain significance. The solitary hypoechoic nodule in the liver is a nonspecific finding most commonly associated with benign pathology (nodular hyperplasia, fatty infiltrate), however fine needle aspirate would be required to evaluate further if clinically indicated. meds: i/d low fat diet, spectra monthly, Vetmedin 2.5 mg in AM and 1.25 mg in PM

Abnormal PE/Chem/CBC/UA Results: Chemistry and CBC May 2022: no concerns, all WNL cPL 96 - normal, no longer has pancreatitis (previously abnormal with significant elevation in lipase 4DX Negative March 25 2022 - E. coli urinary tract infection - culture and sensitivity performed and treated based on results

ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN AND HEART

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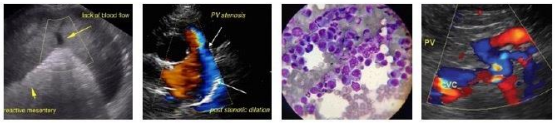

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CANINE CARDIAC PARAMETERS	MR VMAX (m/s)	TR VMAX (m/s)	LA/AO (Boon method)	LA/AO (Heart Base; Swe)	FS (%)	EF (%)	EPSS (cm)
NORMAL PARAMETER	4.5-5.5	<2.7	1.3	<1.3	28-40	40-100	<0.6
PATIENT	5.2	2.0	1.8	2.1	43.5	75.40.2	
CANINE CARDIAC PARAMETERS	**HR** (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	138	1.8	1.5		5.8	4.1	

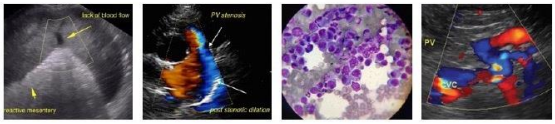
Cardiac Presentation

The echocardiogram for this patient presented excessive left atrial size expressed both in the LA/AO and LA max measurements. Deviation of the intra atrial septum towards the right atrium indicative of increased left atrial pressure was present. The cranial and caudal mitral valve leaflets presented vegetative thickening consistent with endocardiosis without evidence of valvular prolapse. Doppler indicated measurable moderate eccentric insufficiency. The left ventricle presented thicknesses with linear contour with increased left ventricular volume. 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 or chamber overload. Tricuspid valvular assessment demonstrated concurrent mild thickening with mild TR on Doppler. The right ventricle was of normal size (1/3 diameter of LV), chordae structure, myocardial echogenicity and thickness. Pulmonic tract assessment revealed normal valve structure, laminar flow, and diameter (approx.1:1 pa/ao ratio). Minor pulmonic insufficiency present on Doppler. No visible pericardial or free pleura fluid was noted. No echographically detectable evidence of infiltrative disease was visible. The cranial mediastinum and pericardial 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 cm exhibited normal thickness and tone. The previously noted nonspecific thinly walled cystic structure in the area of the ventral bladder wall and trigone was not definitively visualized. 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.

Normal size and margination was 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 to moderate 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 in length. The right kidney measured 4.7 cm in length.



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The area of the aortic trifurcation was free of pathology.

The residual prostate was free of pathology measuring 1.3 cm in diameter.

Adrenal Glands

The bilateral adrenal glands were normal in size. Mild parenchyma heterogeneity and mild capsule asymmetry was present without suspicion for overt neoplasia. The left adrenal gland measured 0.42 cm width in the cranial pole and 1.8 cm length. The right adrenal gland measured 0.39 cm width in the cranial pole and 1.8 cm length.

Spleen

The spleen exhibited primarily finely textured parenchyma which was hyperechoic to the liver and renal cortical parenchyma. Mild generalized parenchyma heterogeneity was present without evidence of nodular changes. 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. The parenchymal heterogeneity is likely consistent with benign changes such as extramedullary hematopoiesis or age-related remodeling with minor potential for inflammatory or neoplastic disease.

Liver

The liver was mildly enlarged in size with normal structure and contour. The previously noted hypoechoic nodule was not definitively visualized in this study. 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 with mild nondependent nonorganized hyperechoic debris. 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

- Chronic mitral valve disease (sonographically consistent with ACVIM stage B2)
- TR-estimated pulmonary gradient (<20mmHg not consistent with overt clinical pulmonary hypertension)
- Minor pulmonic insufficiency

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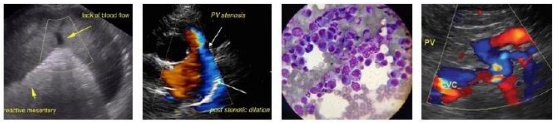

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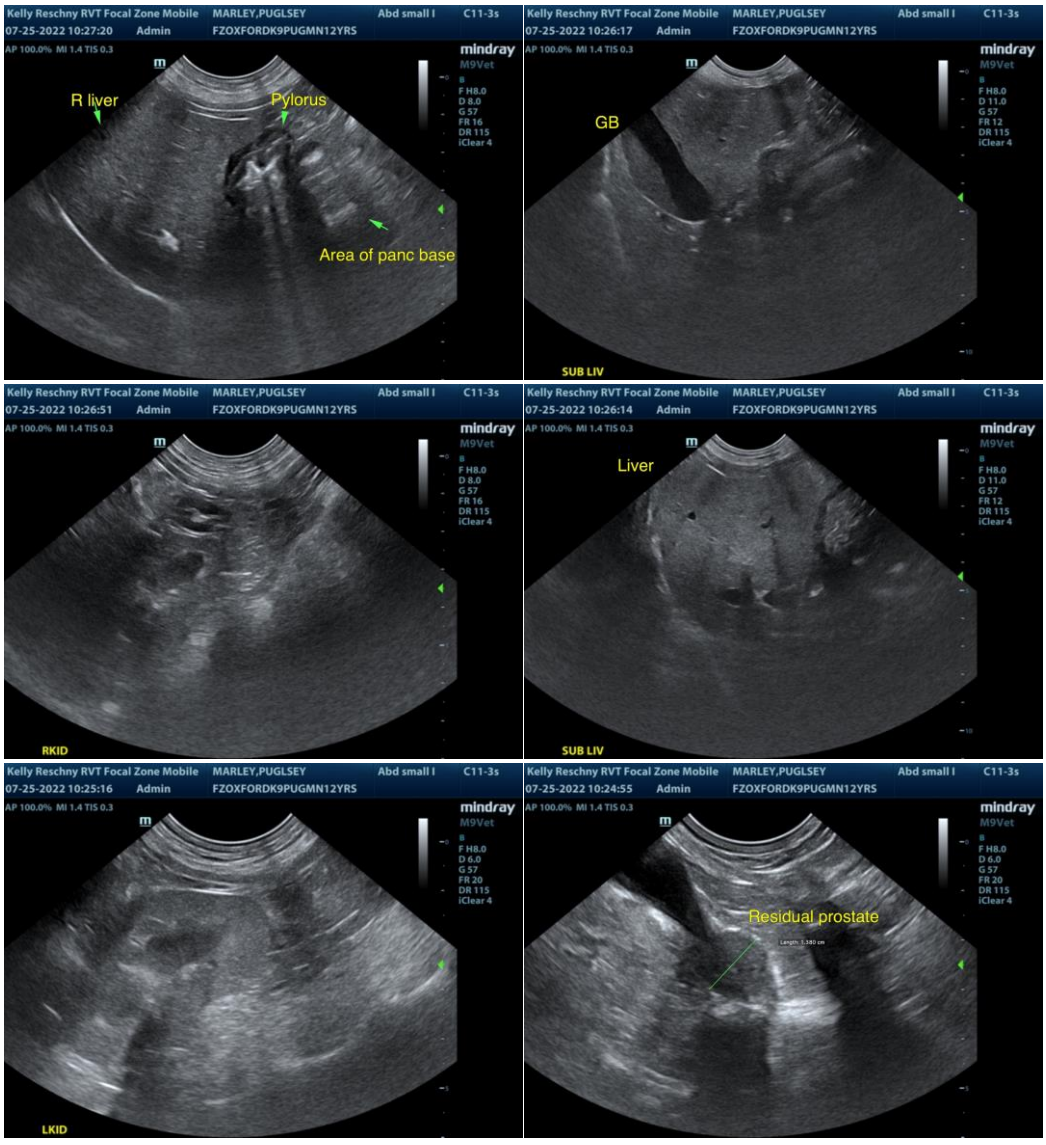
- Bilateral chronic renal changes
- Hepatic parenchyma remodeling-benign
- Mild gallbladder debris (non-mucocele)
- Isoechoic to mildly nonhomogeneous pancreas-potential minor remodeling owing to previous inflammation vs age related/patient variant. No evidence of active pancreatitis criteria

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

The persistent to progressive moderate LA enlargement and increased LV volume indicated that the risk secondary to mitral valve insufficiency is moderately elevated. Continued Pimobendan at current dose is suggested. Baseline monitoring of resting respiration rate is recommended. If no clinical signs or radiographic pulmonary edema, low dose diuretic i.e. Spironolactone 1-2 mg/kg PO could be considered. Serial sonographic monitoring is required for further prognosis. Recheck echocardiogram is recommended in 6 months, sooner if clinical signs arise.

Overall largely a mild geriatric abdomen with no evidence of significant visceral pathology.



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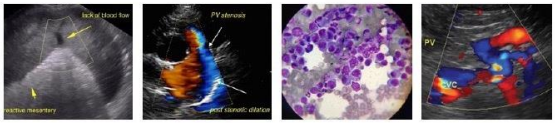

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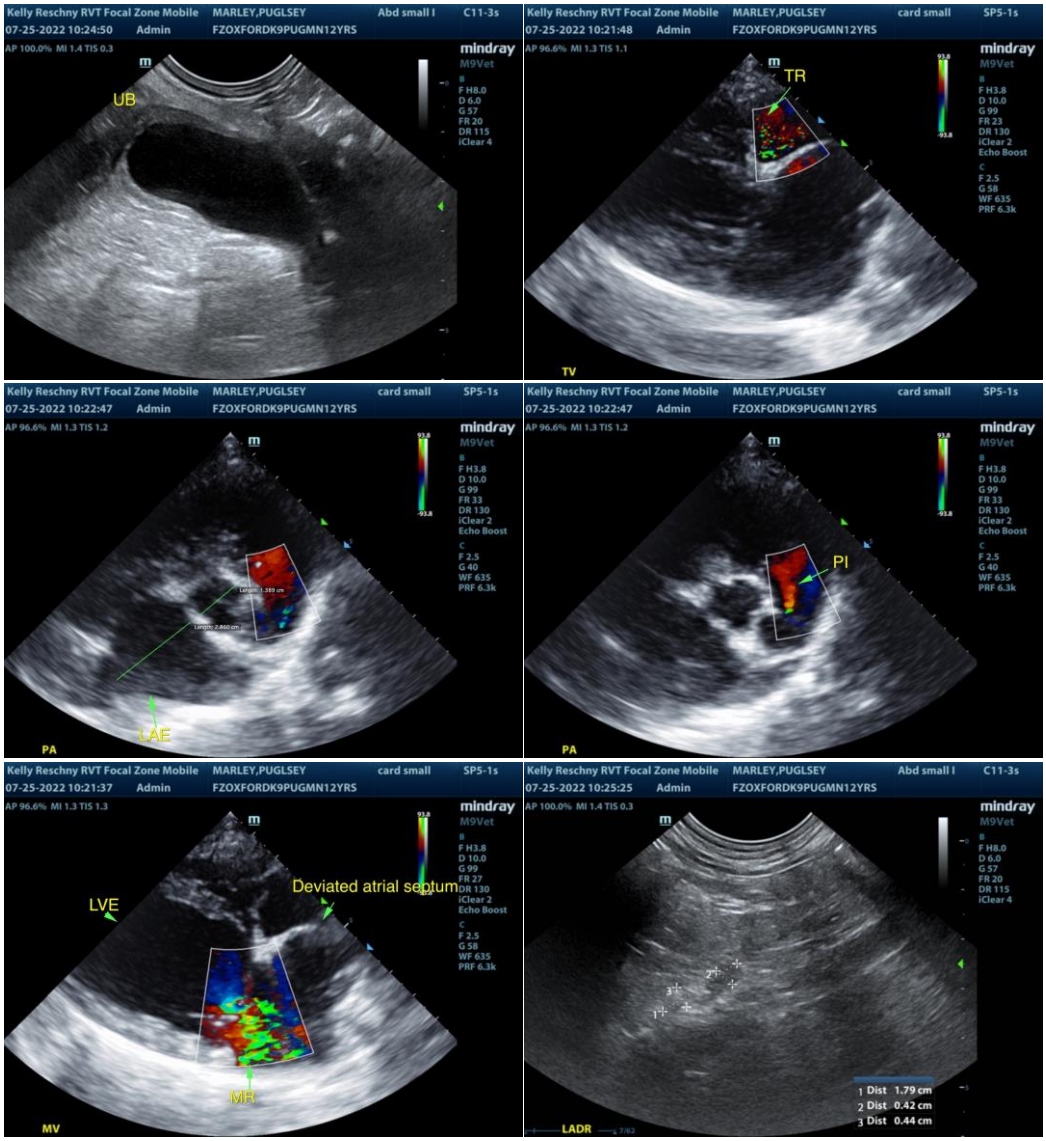
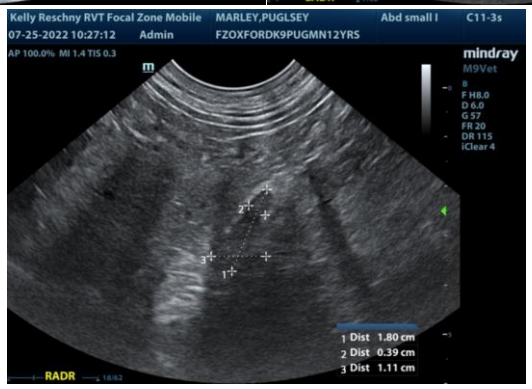
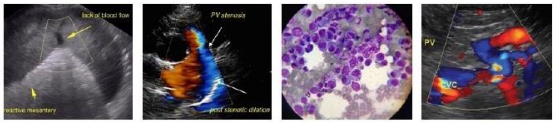




The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

Thank you for this referral. If the clinical or image interpretation does not parallel your findings or if I



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can be of any further assistance please contact me.

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

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