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Clinical Sonography & Telecytology
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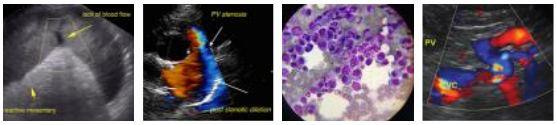


ANIMAL SOUNDS NW
MOBILE VETERINARY ULTRASOUND
IMAGING PERFORMED BY
AnimalSoundsNW.com 541-357-9423

PATIENT

Rudy Parrott

SPECIES

Canine

BREED

Chihuahua

SEX

Neutered Male

AGE

14 Years

WEIGHT

4.4 kg

INTERPRETED BY

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

IMAGING PERFORMED BY

Jenna Walsh, CVT

HOSPITAL NAME

Wilvet South

REFERRING VET

Dr. Bennett

DATE

12/15/22

Invoice
20103

PRESENTING CLINICAL SIGNS

History: Cardiovascular: Grade 5 out of 6 heart murmur. Abdominal: Intestines palpate ropey. auscult quiet (normal). Slightly dehydrated. Current Medications Buprenorphine

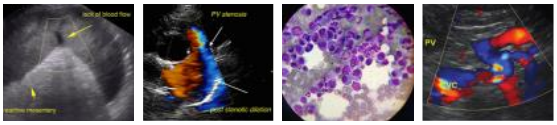
ULTRASONOGRAPHIC EXAMINATION OF THE HEART & ABDOMEN

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	<1.3	28-40	40-100	<0.6
PATIENT	6.4	2.4	1.3	1.3	55	87	0.21
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	1.4	1.0	--	3.4	2.9	--

Cardiac Presentation

The echocardiogram in this patient demonstrated normal **left atrial** size based on 3 different LA measurement methods. Chamber volumes and echogenicity were normal. The cranial and caudal **mitral** valve leaflets presented moderate thickening consistent with moderate endocardiosis. No evidence of valvular prolapse or chordae tendineae rupture. Doppler indicated measurable eccentric insufficiency with mild increased MR velocity. 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 or chamber overload. **Tricuspid** valvular assessment demonstrated 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). 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



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The urinary bladder, trigone, cystourethral junction, and visible pelvic urethra to a depth of 4.0 cm 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. Aortic trifurcation was normal.

The residual prostate was symmetrically normal in size with uniform parenchyma and slight coarse echotexture measuring 0.51 cm in diameter.

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 moderate loss of corticomedullary symmetry and definition expected for the age of the patient. Minor pyelectasia was noted in both kidneys. The right kidney revealed a medial cyst, measuring 0.76 cm in diameter. The left kidney measured – cm in length. The right kidney measured – cm in length. Pinpoint areas of medullary and lateral diverticula mineral were noted.

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 1.4 cm length x 0.48 cm width in the caudal pole. The right adrenal gland measured 1.6 cm length x 0.49 cm width in the caudal pole.

Spleen

The spleen was normal in overall size with areas of minor capsule asymmetry with mild generalized parenchyma heterogeneity. Intermittent variably echogenic yet nondisruptive splenic nodules were noted. A heterogenous nodule adjacent to the hilus measured 0.98 cm in diameter.

Liver

The liver was subjectively normal in size, structure, and contour. The liver parenchyma was uniform and hypoechoic to the spleen with a mild coarse echotexture. The hepatic and portal vasculature were normal in appearance without signs of congestion. A solitary thinly walled hepatic intraparenchymal cyst was noted in the right liver lobes, containing anechoic fluid. The cyst measured 1.7 cm in diameter.

The gallbladder was non distended in size with moderate nondependent echogenic nonorganized debris. The cystic duct and common bile ducts were normal without evidence of dilation.

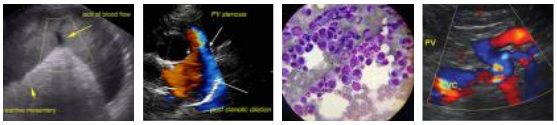
Gastrointestinal

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 gastric body wall measured 0.35 cm.

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. The jejunum wall measured 0.30 cm.

Normal visible colon wall layers were present with semi-formed fecal matter.

Pancreas



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The pancreas was normal in size and contour with isoechoic to heterogeneous parenchyma compared to adjacent omentum. No signs of active inflammation or neoplasia.

Free Abdomen

No overt lymphadenopathy or peritoneal effusion was present.

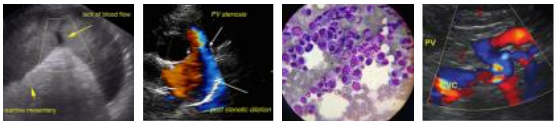
ULTRASONOGRAPHIC FINDINGS

- Compensated chronic mitral valve disease (ACVIM B-1)
- TR- estimated pulmonary pressure gradient not consistent with clinical pulmonary hypertension
- Moderate chronic renal changes, exhibiting minor bilateral pyelectasia and medial left kidney cyst
- Nonspecific yet subjective benign splenic nodules- suggestive of myelolipomas, potential lymphoid hyperplasia, hematopoiesis or similar. Neoplastic criteria is though unlikely.
- Benign liver cyst
- Moderate gallbladder debris (non-mucocele)
- Overtly normal gastrointestinal tract- no overt inflammatory or neoplastic gastrointestinal criteria
- Heterogenous pancreas- suspect age-related pancreatic changes and likely incidental. Minor potential for low grade or chronic pancreatitis

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

The cause of the murmur is chronic degenerative valvular changes with secondary primarily mitral and mild tricuspid valve insufficiencies. The lack of left atrial enlargement implies that the risk of complication secondary to mitral valve insufficiency is low at this time and, without current clinical signs, indicates that medical therapy is not required. However, prognosis at this stage is highly variable and serial sonographic monitoring is recommended. No other clinical issues, such as LV systolic dysfunction, or overt clinical pulmonary hypertension. Recheck echocardiogram is recommended in 6 months or sooner if clinical signs arise.

Largely geriatric abdomen, without evidence of significant visceral, specifically neoplastic criteria. The left and right pyelectasia may be owing to chronic renal changes, potential pelvic scarring possibly owing to previous calculi passage, IV fluid therapy (if applicable). Urine C/S and protein: creatinine ratio on sterile urine sample is recommended. Potential for low grade or chronic pancreatitis may be suspected if evidence of cranial abdominal or subxiphoid discomfort on palpation or previous or



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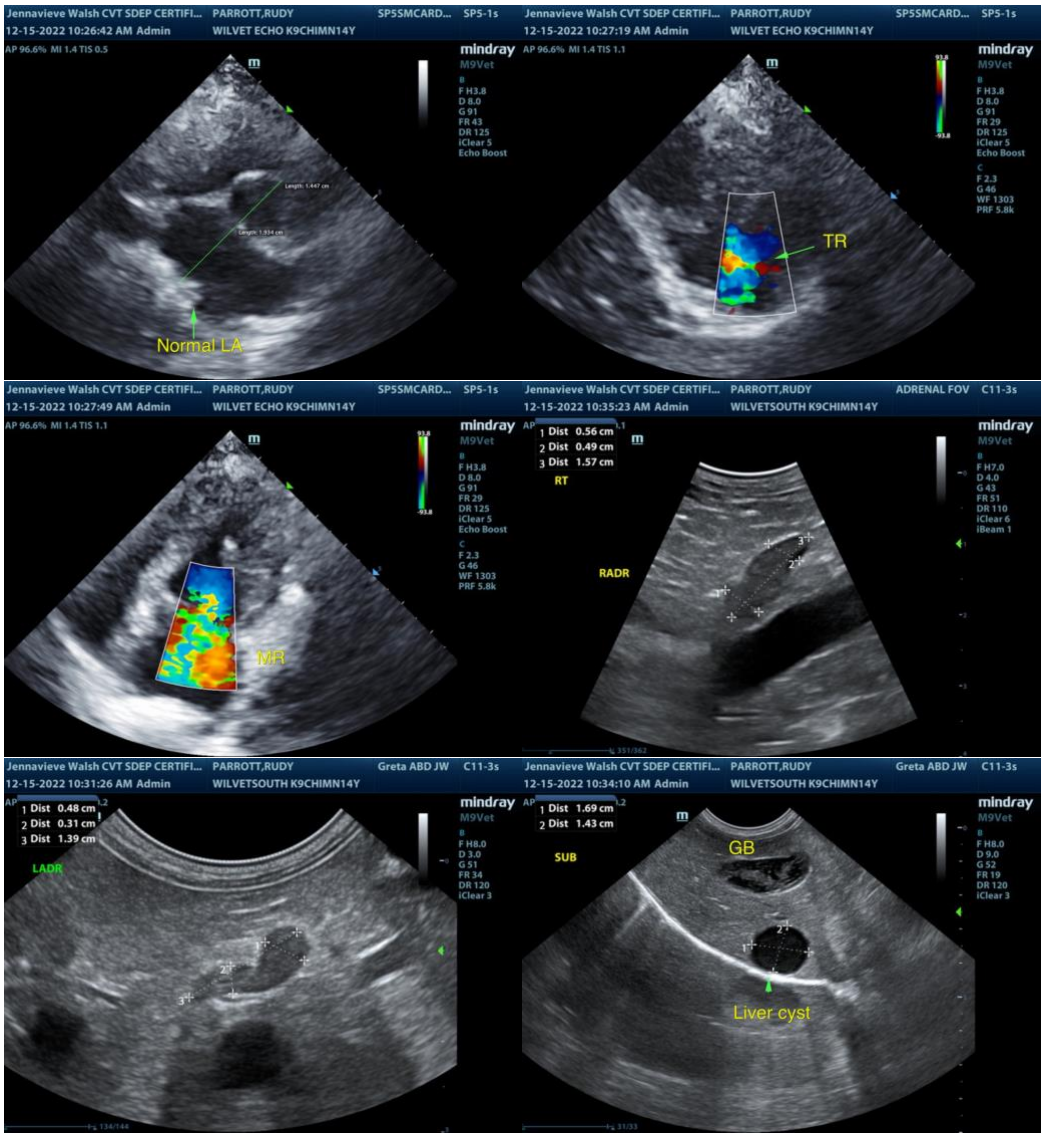
current clinical signs suggestive of pancreatitis. A GI panel to include PLI/TLI/Cobalamin/Folate could be considered if clinically indicated. Correlation with a CBC/chemistry panel and urinalysis may be considered if not recently done.



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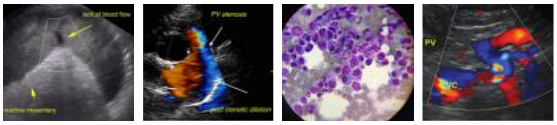

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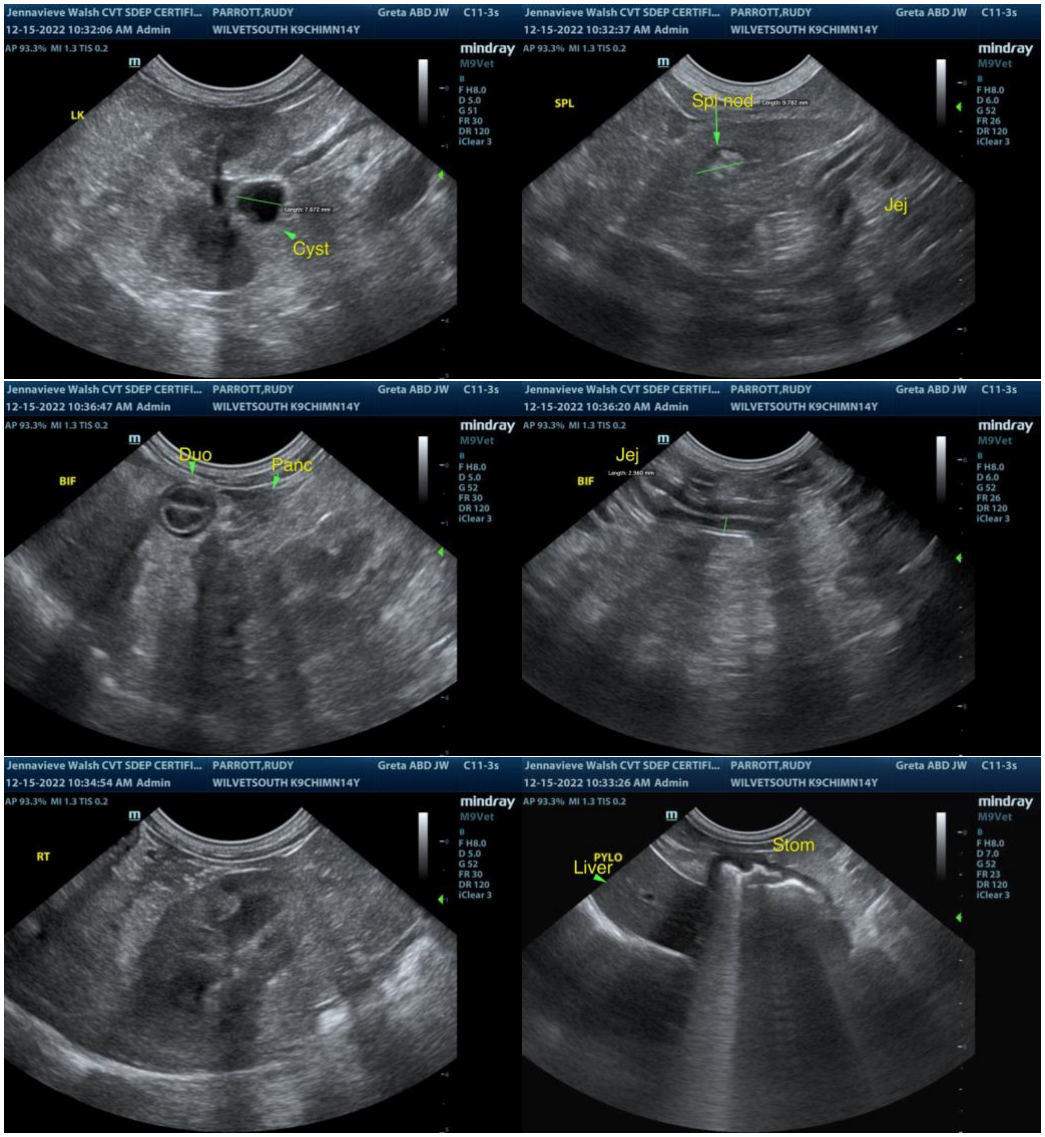

The information and recommendations provided are based on the images presented by the referring veterinarian. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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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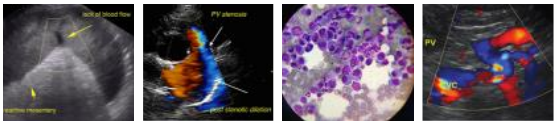

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