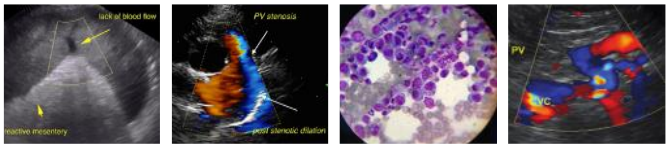
SonoPath
Clinical Sonography & Telecytology
EDUCATIONAL TELECONSULTATION SERVICES™



SonoPath.com
1-800-838-4268 info@sonopath.com

PATIENT

Harry Schuld

SPECIES

Canine

BREED

Rat Terrier

SEX

MN

AGE

15 years

WEIGHT

15.2 lbs.

INTERPRETED BY

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

IMAGING PERFORMED BY

Diane McFadden

HOSPITAL NAME

Animal Care Centers of Flanders

REFERRING VET

Dr. Hargadon

INVOICE

16157

DATE

2/14/23

PRESENTING CLINICAL SIGNS

Previously DX with mitral valve disease and proteinuria. Assess cardiac disease, liver, PLN. On vetmedin 2.5mg bid, enalapril 2.5mg sid, rimadyl 25 mg x 1.2

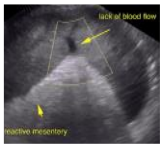
Abnormal PE/Chem/CBC/UA Results: 2/2/23: ALT 281; USPG 1.019

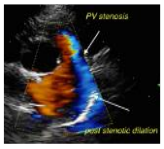
ULTRASONOGRAPHIC EXAMINATION OF THE HEART & ABDOMEN

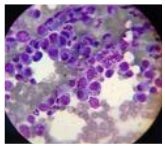
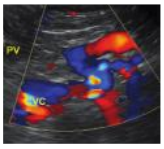
CANINE CARDIAC PARAMETERS	MR VMAX (m/s)	TR VMAX (m/s)	LA/AO (Boon method)	LA/AO (Heart Base; Swe)	FS (%)	EF (%)	EPSS (cm)
NORMAL PARAMETER	4.5-5.5	<2.7	1.3	<1.3	28-40	40-100	<0.6
PATIENT	6.0		1.4	1.3	56	88.3	0.2
CANINE CARDIAC PARAMETERS	**HR** (BPM)	**AV VMAX** (m/s)	**PV MAX** (m/s)	**BODY WEIGHT** (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	190	1.6	1.1		2.5	2.3	

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 endocardiosis. No evidence of valvular prolapse was noted. Doppler indicated measurable moderate eccentric insufficiency with borderline 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. Normal measured LVOT velocity with minor aortic insufficiency was noted on Doppler. The **right atrium** and auricle revealed normal size, structure and content. No evidence of masses was noted or chamber overload. **Tricuspid** valvular assessment demonstrated adequate linear morphology. 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). Normal measured RVOT velocity was present. 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. No arrhythmia was noted.





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Urinary System

The urinary bladder, trigone, cystourethral junction, and visible pelvic urethra to a depth of 2.0 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 was noted.

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

The area of the aortic trifurcation was free of pathology.

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 mild to moderate loss of corticomedullary symmetry and definition expected for the age of the patient. No evidence of pelvic dilation was present. Discrete medullary mineralization was noted. The left kidney measured 4.4 cm in length. The right kidney measured 4.7 cm in length.

Adrenal Glands

The left and right adrenal glands were uniform in size and contour with a uniformly hypoechoic parenchyma. The left adrenal gland measured 1.9 cm length x 0.58 cm width at the caudal pole. The right adrenal gland measured 2.2 cm length x 0.49 cm width at the caudal pole.

Spleen

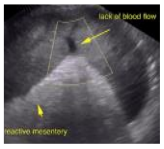
The spleen exhibited primarily finely textured parenchyma which was hyperechoic to the liver and renal cortical parenchyma. Mild generalized parenchyma heterogeneity was present without evidence of nodular changes. The capsule was smooth and regular without apparent expansion. The splenic vasculature 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.

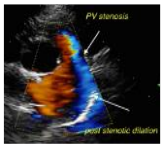
Liver/ Gallbladder

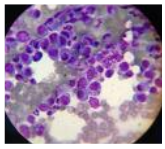
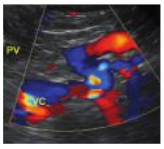
The liver was subjectively normal in size, structure, and contour. The liver parenchyma was mildly nonuniform and hypoechoic to the spleen with a moderate coarse echotexture and subjective mild to benign parenchymal remodeling. The hepatic and portal vasculature were normal in appearance without signs of congestion. The gallbladder was non-distended in size containing primarily anechoic content with minor nonorganized echogenic gallbladder debris primarily in the caudal lumen and area of the gallbladder neck. The cystic and common bile ducts were normal.

Gastrointestinal

The stomach presented intact overtly normal wall layering noted in the fundus and gastric body with subjective mild thickened pylorus wall with indistinct pyloric wall detail. No evidence of mechanical pyloric outflow obstruction or obstructive pyloric mural pathology was noted. The pylorus wall width measured up to 1.1-1.2 cm width.





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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 were evident.

Free Abdomen

No overt lymphadenopathy or peritoneal effusion was present.

ULTRASONOGRAPHIC FINDINGS

- Compensated chronic mitral valve disease (ACVIM B1)
- Minor aortic insufficiency
- Mild to moderate nonspecific chronic renal changes
- Mildly thickened pylorus
- Mild hepatic parenchymal remodeling - low-grade benign hepatopathy
- Minor gallbladder debris (non-mucocele)

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

The lack of LA enlargement or evidence of left heart volume overload indicates that the current and future risk going forward of complications secondary to MR remains low. No other clinical issues such as LV systolic dysfunction or evidence of clinical pulmonary hypertension were noted.

Assessment of systemic BP is recommended given borderline elevated MR velocity and trace aortic insufficiency to assess for/rule out evidence of hypertension. Prognosis remains variable and sonographic monitoring is recommended. Continued Pimobendan is warranted as this medication may help prolong cardiac changes associated with MR. Recheck echocardiogram is suggested in 6 months.

Recheck UPC level of sterile urine sample is suggested if not done recently. Hepatosupportive medications including Denamarin and Ursodiol may prove beneficial.

The mildly thickened pylorus if of unclear clinical significance given lack of reported inappetence, vomiting, etc. No obvious evidence of infiltrative gastric neoplasia was noted, although monitoring for evidence of inappetence/vomiting going forward +/- gastroprotectant protocol and sonographic reassessment of the stomach in 4-6 weeks, if clinical signs are noted, is suggested.

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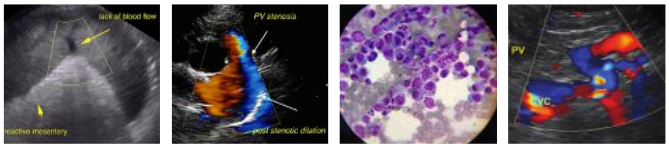

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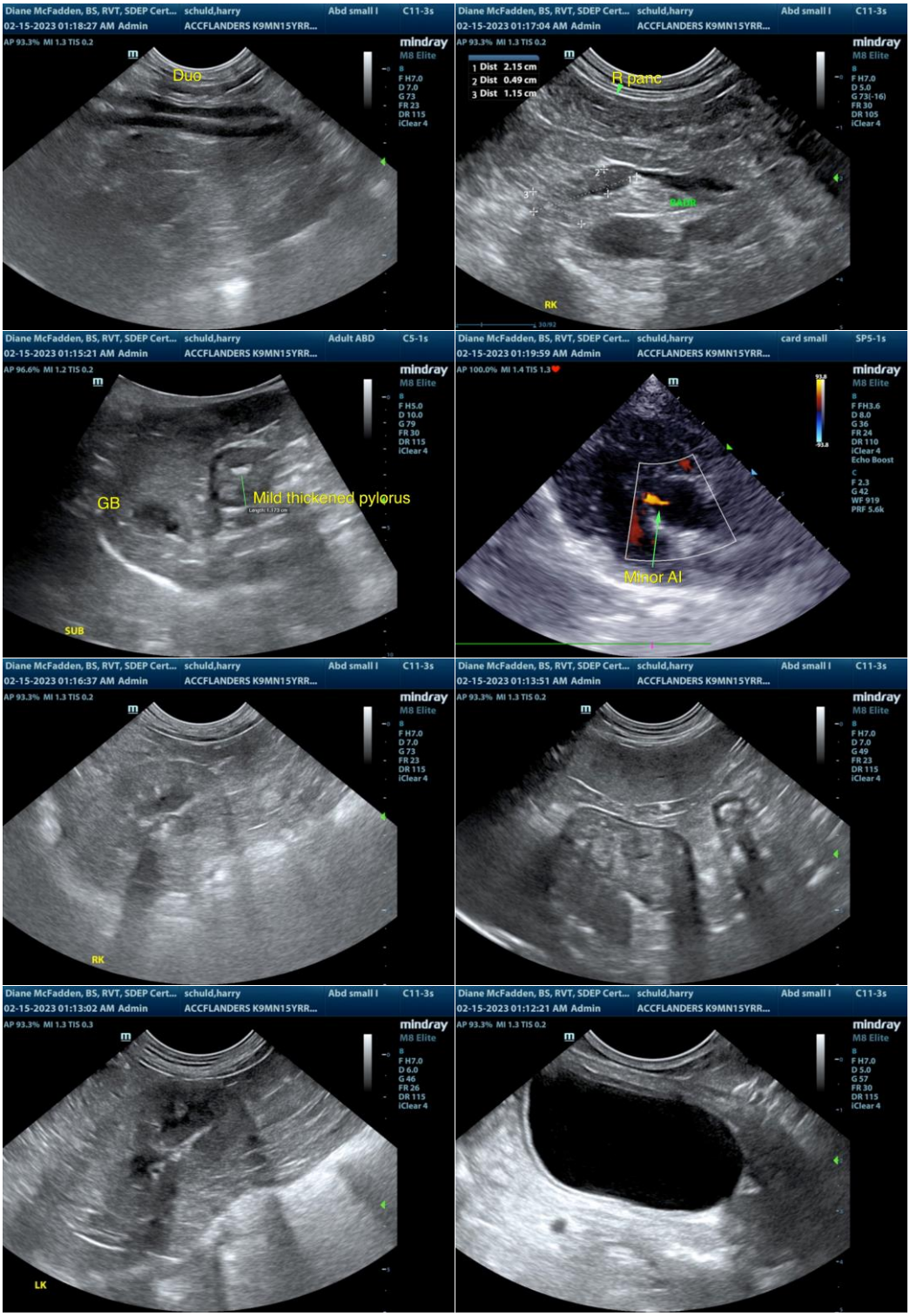

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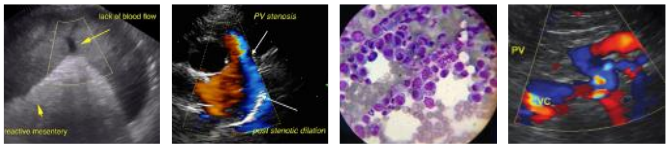

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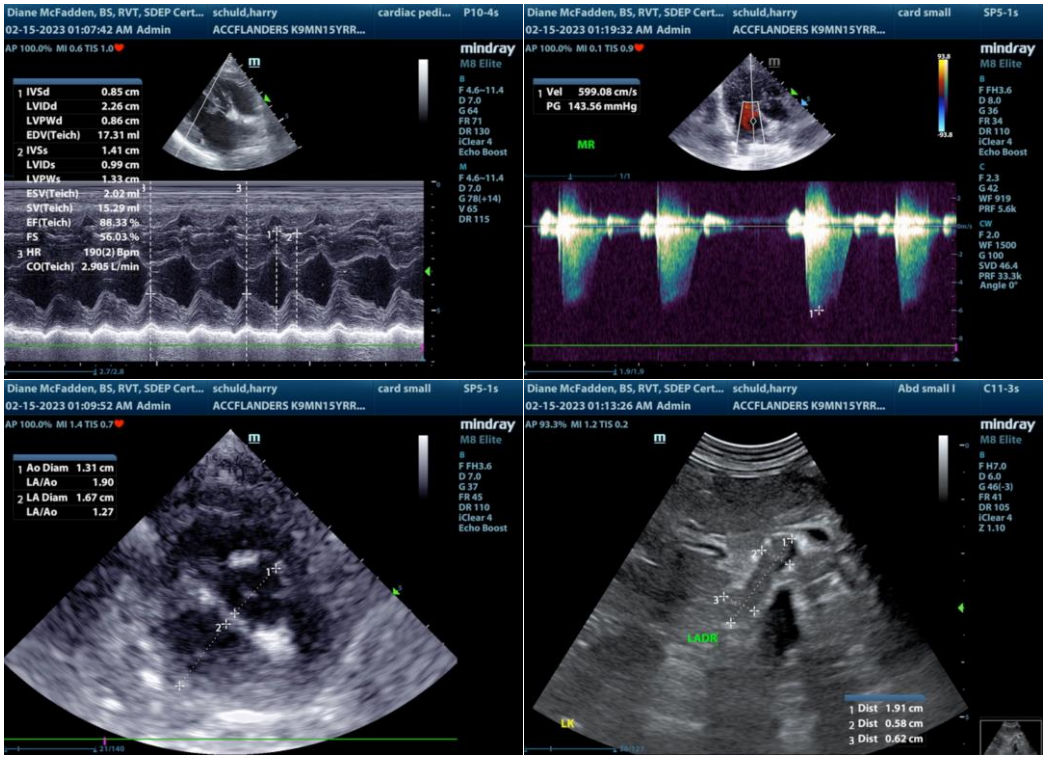

The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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)
info@SonoPath.com