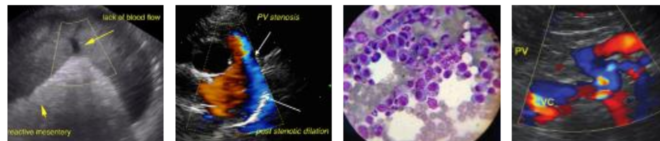
SonoPath
Clinical Sonography & Telecytology
EDUCATIONAL TELECONSULTATION SERVICES™



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

PATIENT
Pippa Ferstrom

SPECIES
Canine

BREED
Boxer

SEX
F

AGE
9yr

WEIGHT
55lb

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

IMAGING PERFORMED BY
Shari Reffi CVT

HOSPITAL NAME
Animal Hospital of Sussex County

REFERRING VET
Dr. Catania

INVOICE
12927ag

DATE
02/08/2023

PRESENTING CLINICAL SIGNS

Pre-anesthetic evaluation for tail amputation. Grade IV/VI L side murmur (per O congenital?). Current meds: "mushroom" supplement

Abnormal PE/Chem/CBC/UA Results: Pending

ULTRASONOGRAPHIC EXAMINATION OF THE HEART

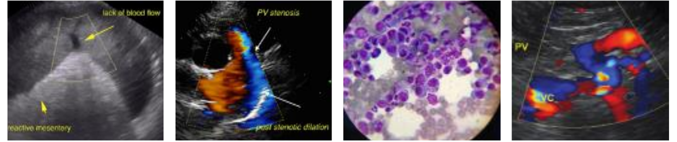
CANINE CARDIAC PARAMETERS	MR VMAX (m/s)	TR VMAX (m/s)	LA/AO (Boon method)	LA/AO (Heart Base; Swe)	FS (%)	EF (%)	EPSS (cm)
NORMAL PARAMETER	4.5-5.5	<2.7	1.3	<1.3	28-40	40-100	<0.6
PATIENT	5.0	<2.0	1.3	1.45	40.5	75	0.2
CANINE CARDIAC PARAMETERS	**HR** (BPM)	**AV VMAX** (m/s)	**PV MAX** (m/s)	**BODY WEIGHT** (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	151	2.2	1.4		3.7	3.7	

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 normal linear structure, extension in systole, and union in diastole with normal kinesis. Mild centralized to eccentric MR on Doppler. The left ventricle presented thicknesses with linear contour and was not dilated nor restricted. No evidence of LV wall hypertrophy. 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 possible mild dynamic to turbulent outflow with normal appearance of the aortic valve. Borderline elevated measured LVOT velocity. The right atrium and auricle revealed mild prominent size compared to the LA without evidence of masses. Tricuspid valvular assessment demonstrated adequate linear morphology and kinesis. Minor TR on Doppler. The right ventricle was of borderline to mild prominent size compared to the LV, normal chordae structure, myocardial echogenicity and thickness. Pulmonary outflow tract assessment revealed normal valve structure, laminar flow, and diameter (approx.1:1 pa/ao ratio). Normal measured RVOT velocity. No visible pericardial or free pleural fluid was noted. The cranial mediastinum and pericardial and extra-cardiac regions were free of masses in the visible window. Consistent to significant arrythmia present.

ULTRASONOGRAPHIC FINDINGS

- Overtly normal cardiac structure with normal LV function-no evidence of DCM criteria
- Mild compensated MR with normal LA
- Borderline to mild prominent RA/RV with minor TR-no evidence of clinical pulmonary hypertension



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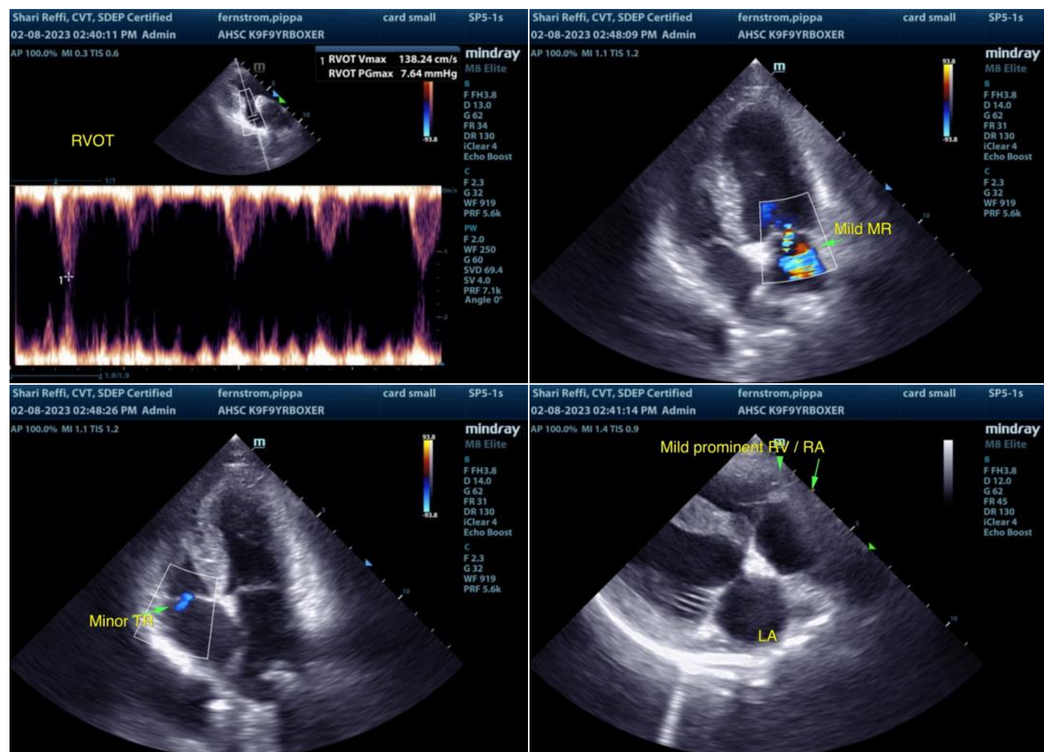
- Borderline increased measured LVOT velocity, overtly normal aortic valve structure-nonspecific
- Consistent to significant arrythmia

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

The murmur in this patient may be secondary to mild centralized to eccentric MR or mild dynamic LV outflow with borderline measured LVOT velocity. Sonographically the appearance of the aortic valve and lack of overt LV hypertrophy was not overtly suggestive of significant aortic stenosis, the lack of LA enlargement indicates that the risk of complications secondary to MR is low. No other evidence of significant valvular insufficiencies as a contributing factor. The hemodynamic effects of the murmur appear to be low given lack of left/right heart chamber enlargement or evidence of significant LV hypertrophy. The primary finding is the consistent to significant arrythmia which although non-specific may raise concern for possible arrhythmogenic right ventricular cardiomyopathy given the breed.

ECG or ideally Holter monitor assessment is strongly recommended prior to potential anesthesia. Prognosis is highly variable and serial sonographic monitoring is required for further prognosis although no evidence of structural cardiac failure is present at this stage. Recheck echocardiogram recommended in 6 months, sooner if clinical signs arise.



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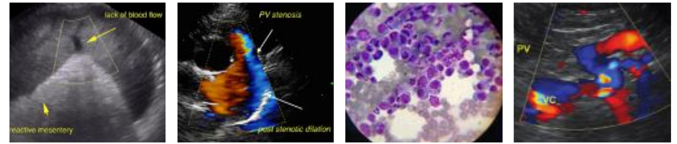

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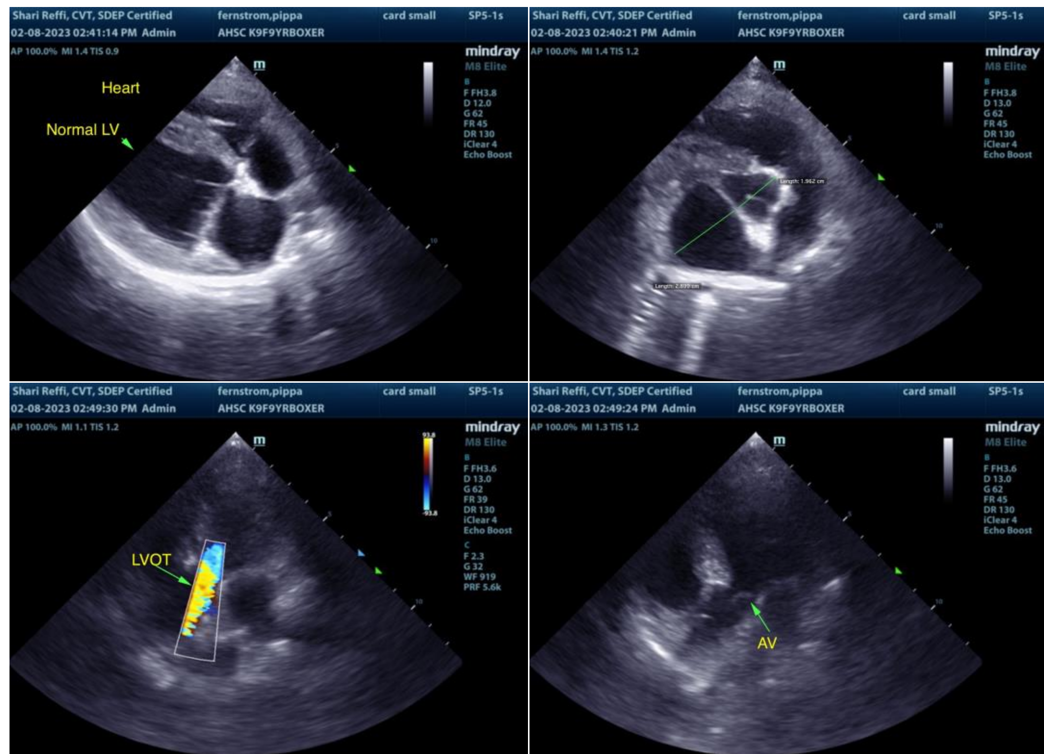

The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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)
mac.daniel@sonopath.com