



PATIENT

Marley Butterfield

SPECIES

Canine

BREED

West Highland Terrier

SEX

Female Intact

AGE

14 weeks

WEIGHT

9.6lbs

INTERPRETED BY

Maggie Machen
Lamy, DVM
DACVIM (Cardiology)

IMAGING PERFORMED BY

Eduardo Rodriguez
III, RCS

HOSPITAL NAME

Mass Veterinary Services

REFERRING VET

Dr. Masloski

INVOICE

32477

DATE

8/22/23

PRESENTING CLINICAL SIGNS

History: Heart murmur noted on puppy visit. Doing well with good appetite and active and playful. On exam: NSR, grade III/VI murmur with PMI left apical area, PSS, lung fields clear, mm pink, moist, CRT<2. *Sedated with propofol for study.

ECHOCARDIOGRAM FINDINGS

2D, m-mode, color flow and Doppler imaging is available.

Left ventricle: The LV diameter is normal with adequate myocardial function. LV wall thicknesses are normal. A small perimembranous ventricular septal defect (VSD) is visualized; 0.23cm diameter. The flow is left to right; max velocity 3.6m/s.

Left atrium: The left atrium is normal.

Mitral valve: The mitral valve is normal with no mitral regurgitation.

Aortic valve/aorta: The aortic valve is normal in morphology and mobility. Normal aortic outflow velocity; laminar flow. No aortic insufficiency.

Right ventricle: The RV appears normal with no evidence of hypertrophy.

Right atrium: Normal RA dimension.

Tricuspid valve: The tricuspid valve appears normal with no tricuspid regurgitation.

Pulmonic valve/pulmonary artery: The pulmonic valve is normal in morphology and mobility. Trivial pulmonic insufficiency. Normal RVOT velocity; laminar flow.

Pericardium/other: No pericardial or pleural effusion noted. No obvious cardiac masses.

Heart rhythm: ECG reveals a sinus rhythm with an average HR of 150bpm.

2-Dimensional Measurements

Ao diam (cm)	1.1
LA diam (cm)	1.3
LA:Ao (Swe)	1.1
IVS thickness (cm)	0.6
LVID diastole (cm)	1.9
PW thickness (cm)	0.6
LVID systole (cm)	1.2
FS (%)	38

Doppler Measurements

PV Vmax (m/s)	
AoV Vmax (m/s)	1.0
MR Vmax (m/s)	NA
TR Vmax (m/s)	NA
TR PG (mmHg)	NA

INTERPRETATION OF THE FINDINGS

The cause of a murmur identified is a perimembranous ventricular septal defect (VSD). The defect is small in dimension, with left to right flow. The max velocity is lower than expected; however, this is likely due to heavy sedation as no right-sided disease is identified. Monitoring is advised. There is no evidence of left heart volume overload or mild relative pulmonic stenosis at this time.

Assessment of progression in the future will help predict long term prognosis, which is generally good with this size defect. Most small congenital shunts are able to live a normal life free of medications; however, periodic monitoring is advised.

RECOMMENDATIONS

- No medications are indicated.
- Omega fatty acid supplementation and mild salt restriction may be of some long-term benefit.
- Anesthetic risk is considered mildly elevated if needed. Cardiac protective drug choices (opioid/benzodiazepine premedication, propofol or alfaxalone induction,



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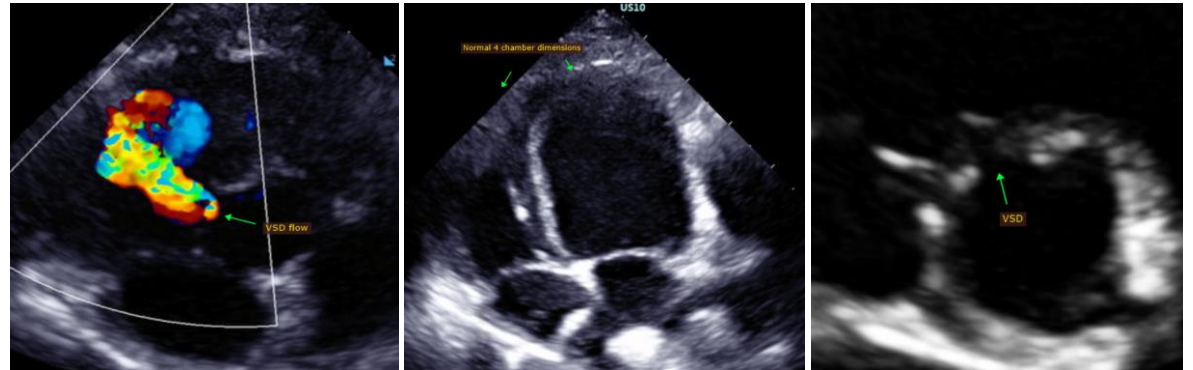
isoflurane gas) are recommended. Pre-oxygenate for 5-10 minutes prior to induction. Monitor for arrhythmias, hypotension, and hypoxia both intra and post-operatively and intervene as necessary. Mild IV fluid restriction is recommended to avoid fluid overload. Avoid heart rate stimulating drugs such as atropine unless clinically indicated.

- Monitor for development of a cough, labored breathing, exercise intolerance or collapse episodes.

PLAN

- Recommend conservative monitoring with a recheck echocardiogram in 1 year, sooner if any development of clinical signs.

IMAGES



INTERPRETED BY

Maggie Machen Lamy, DVM
DACVIM (Cardiology)

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. This report was generated using transcription software, and minor dictation errors may be present. If the clinical or image interpretation does not parallel your findings or if I can be of any further assistance, please contact me.

IMAGING PERFORMED BY

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HOSPITAL NAME

Mass Veterinary Services

Echocardiogram performed by: Eduardo Rodriguez III, RCS
Pet Animal Ultrasound Service (4paus.com)

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