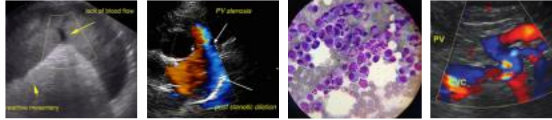


PATIENT
Harvey Moore

SPECIES
Canine

BREED
Pitbull

SEX
Male Intact

AGE
8 years

WEIGHT
55.2lbs

INTERPRETED BY
Maggie Machen Lamy, DVM, DACVIM (Cardiology)

IMAGING PERFORMED BY
Jenna Walsh, CVT

HOSPITAL NAME
Eastgate Veterinary Clinic

REFERRING VET
Dr. Moses

INVOICE
28059

DATE
1/2/23

PRESENTING CLINICAL SIGNS

History: Grade 3-4/6 heart murmur. Assess prior to anesthesia. BP: 240, 256, 244mmHg.

ELECTROCARDIOGRAPHIC FINDINGS

*Note: Single lead ECGs are evaluated as a rhythm strip. Morphology/MEA cannot be definitively commented on.

A single lead ECG is available; 50mm/s, 20mm/mV. The average heart rate is 90bpm (range 64-115bpm). The rhythm is sinus in origin, with a p for every QRS complex and vice versa. The P morphology is positive. The QRS is isoelectric. No ectopic beats, pauses or dysrhythmias observed. ECG diagnosis: Normal sinus rhythm with respiratory variation.

ECHOCARDIOGRAM FINDINGS

2D, m-mode, color flow and doppler imaging is available. Mild mitral valve thickening with no obvious prolapse into the left atrial lumen. Trace central mitral regurgitation. Normal velocity. Normal left atrial dimension. Normal LV diameter with adequate myocardial function. The LV wall thickness is normal. The tricuspid valve appears normal with trace TR. Normal velocity. No right atrial dilation. Mild right ventricular prominence. Moderate elevation of pulmonic outflow velocities at the level of the valve. The PV appears thickened, with mild post-stenotic dilation of the branch PA's. Mild to moderate pulmonic insufficiency. The aortic valve appears to have normal morphology and mobility. No pericardial or pleural effusion noted. No obvious cardiac masses.

CARDIAC CHART

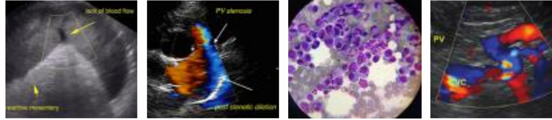
CANINE CARDIAC PARAMETERS	MR VMAX (m/s)	TR VMAX (m/s)	LA/AO (Boon method)	LA/AO (Heart Base; Swe)	FS (%)	EF (%)	EPSS (cm)
NORMAL PARAMETER	4.5-5.5	<2.7	1.3	<1.6	28-40	40-100	<0.6
PATIENT	5.5	2.4	1.3	1.3	36	70	0.25
CANINE CARDIAC PARAMETERS	**HR** (BPM)	**AV VMAX** (m/s)	**PV MAX** (m/s)	**BODY WEIGHT** (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	BELOW	BELOW	BELOW	BELOW
PATIENT	113	1.3	3.5	25.0	2.4	3.8	2.4

*Normal chamber parameters expressed as a mean value (SD)

BODY WEIGHT DEPENDENT PARAMETERS

BODY WEIGHT (kg)	LA (cm)	LVIDd (cm)	LVIDs (cm)
3	1.27 (5.3)	2.46 (2.46)	1.36 (5.5)
5	1.40 (4.5)	2.74 (5.2)	1.60 (4.7)
10	1.50 (3.8)	3.27 (3.5)	2.06 (3.1)
15	1.83 (2.0)	3.71 (2.4)	2.43 (2.1)
20	2.02 (1.9)	4.14 (2.2)	2.80 (2.0)
25	2.18 (2.4)	4.48 (2.9)	3.10 (2.5)
30	2.33 (3.3)	4.83 (3.9)	3.39 (3.4)
35	2.48 (4.3)	5.17 (5.0)	3.69 (4.5)
40	2.62 (5.2)	5.48 (6.1)	3.96 (5.4)
50	2.88 (7.1)	6.07 (8.3)	4.46 (7.4)

Adapted from June Boon, Veterinary Echocardiography, 1998
Rishniw M and Hollis NE, J Vet Intern Med 2000; 14:429-435
Hansson et al, Vet Rad and Ultrasound 2002
Bonagura et al. Echocardiography: principles of interpretation, Vet Clin North Am 15:1177, 1995



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INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

The cause of the murmur is valvular pulmonic stenosis. This is a congenital abnormality of the valve, which is present from birth. A purely valvular stenosis is appreciated without a sub or supravalvular component. The degree of obstruction is moderate based upon the velocity/pressure gradient across the pulmonic valve and minimal secondary hypertrophy and remodeling of the right ventricle. Trace mitral and tricuspid regurgitation may suggest early valve disease and follow up is advised. No additional issues are identified, and the ECG is unremarkable.

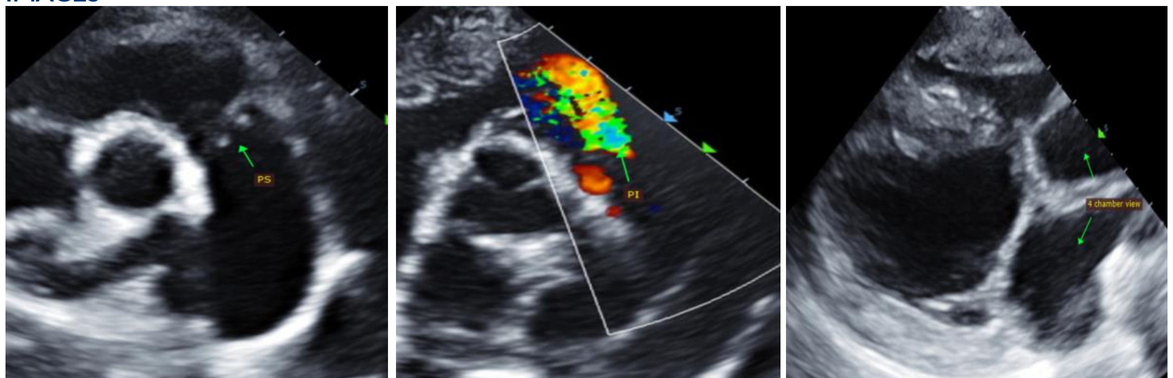
Moderate PS cases fall within a grey zone, as most patients will not experience clinical signs (syncope, right-sided congestive heart failure) throughout their lifetime. While some risk for progression to clinical signs will always remain, given that this case is 8yo without any issues, no medications are warranted at this time. This should be reconsidered if any exertional syncope or lethargy is noted in the future. Surgical intervention is not recommended in this case.

Monitor for development of associated clinical signs (exertional collapse, abdominal distention, cough, labored breathing). Omega fatty acid supplementation may have some long-term benefit, given that these cases are predisposed to development of arrhythmias going forward.

Anesthetic risk is considered mild if needed. Cardiac protective drug choices (opioid/benzodiazepine premedication, propofol or alfaxalone induction, 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.**

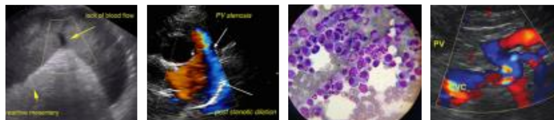
Recommend recheck echocardiogram in 6-12 months to assess for progression, response to medication.

IMAGES



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.



Maggie Machen Lamy, DVM
Diplomate of the American College of Veterinary Internal Medicine (Cardiology)
info@sonopath.com

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