



PATIENT

Coco Hallmark

PRESENTING CLINICAL SIGNS

History: Systolic heart murmur, grade 4/5. Assess prior to spay.

SPECIES

Canine

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; 25mm/s, 10mm/mV. The average heart rate is 110bpm (range 100-125bpm). The rhythm is sinus in origin, with a p for every QRS complex and vice versa. The P and QRS morphologies are positive. No ectopic beats, pauses or dysrhythmias observed.

BREED

Labrador

ECG diagnosis: Normal sinus rhythm with respiratory variation.

SEX

Female

ECHOCARDIOGRAM FINDINGS

2D, m-mode, color flow and doppler imaging is available. Normal mitral valve leaflets with no obvious prolapse into the left atrial lumen. No mitral regurgitation. Normal left atrial dimension. Borderline LV diameter with adequate myocardial function. Increased LV sphericity. The LV wall is normal. The tricuspid valve appears normal with mild tricuspid regurgitation present. Mildly elevated velocity. Mild right atrial dilation. Mild right ventricular hypertrophy and remodeling indicative of pressure overload. Mild right ventricular dilation. Moderate elevation of pulmonic outflow velocities at the level of the valve. The PV leaflets are elongated and tethered. Mild post-stenotic dilation of the main pulmonary artery. Moderate pulmonic insufficiency. The aortic valve appears to be thickened with a normal outflow velocity. Moderate AI. No obvious cardiac shunts are visualized. No pericardial or pleural effusion noted.

AGE

7 months

WEIGHT

47.8lbs

CARDIAC CHART

INTERPRETED BY

Maggie Machen
Lamy, DVM, DACVIM
(Cardiology)

IMAGING PERFORMED BY

Jenna Walsh, CVT

HOSPITAL NAME

South Willamette
Veterinary Clinic

REFERRING VET

Dr. Daugherty

INVOICE

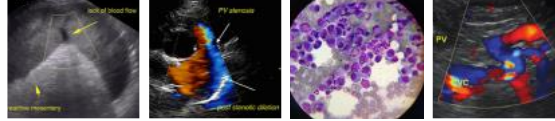
22527

DATE

2/11/22

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	NA	3.0	NM	1.2	43	75	0.4
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	95	1.8	3.9	21.7	1.9	3.9	2.2
*Normal chamber parameters expressed as a mean value (SD)				3	1.27 (5.3)	2.46 (2.46)	1.36 (5.5)
BODY WEIGHT DEPENDENT PARAMETERS				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



PATIENT

Coco Hallmark

SPECIES

Canine

BREED

Labrador

SEX

Female

AGE

7 months

WEIGHT

47.8lbs

INTERPRETED BY

Maggie Machen
Lamy, DVM, DACVIM
(Cardiology)

IMAGING PERFORMED BY

Jenna Walsh, CVT

HOSPITAL NAME

South Willamette
Veterinary Clinic

REFERRING VET

Dr. Daugherty

INVOICE

22527

DATE

2/11/22

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

Complex degenerative heart disease is present. The cause of the murmur is elevated flow velocity through the pulmonary artery consistent with moderate pulmonic stenosis. There is also mild tricuspid regurgitation noted which reflects mild tricuspid valve dysplasia. Additionally, the aortic valve is thickened with a significant leak. This is suspected to be causing mild LV changes at this time, which certainly warrant follow up. No other congenital abnormalities were visualized; however, small abnormalities are easily missed in congenital cases. Highly recommend referral in this case to ensure that no additional issues are present. The ECG is unremarkable with a normal sinus rhythm.

Moderate PS cases fall within a grey zone. There are many patients that will not experience clinical signs (syncope, right-sided congestive heart failure) throughout their lifetime, however risk for progression to clinical signs will always remain. A diagnostic angiogram and potentially balloon valvuloplasty can be considered (particularly in the event of development of clinical signs) as the gold standard therapeutic option for this condition and may improve long term outcome. If the client is interested, referral for evaluation and discussion with a local Cardiologist should be considered. Whether or not referral/surgery is elected, medical management with atenolol is recommended going forward to decrease heart rate and lessen the obstruction.

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

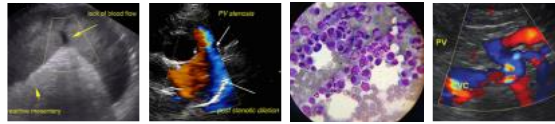
Breeding this animal is not advised due to the genetic link of this disease.

Anesthetic risk is mild to moderate at this time. Avoid heart rate stimulating drugs such as atropine or glycopyrrolate unless absolutely necessary. Avoid vasodilators such as acepromazine. Mild IV fluid restriction is advised. Cardiac protective drug choices (opioid/benzodiazepine premedication, propofol or alfaxalone induction, isoflurane gas) are recommended. Pre-oxygenate for 5-10 minutes prior to induction and recover in O2 if possible. Monitor for arrhythmias, hypotension, and hypoxia both intra and post-operatively and intervene as necessary.

PLAN

Consider referral for evaluation/surgical consultation. Institute atenolol 25mg tabs, give ½ tab PO q12. Recheck HR in 5-7 days; target is stressed in hospital rates not to exceed 130bpm.

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



PATIENT

Coco Hallmark

SPECIES

Canine

BREED

Labrador

SEX

Female

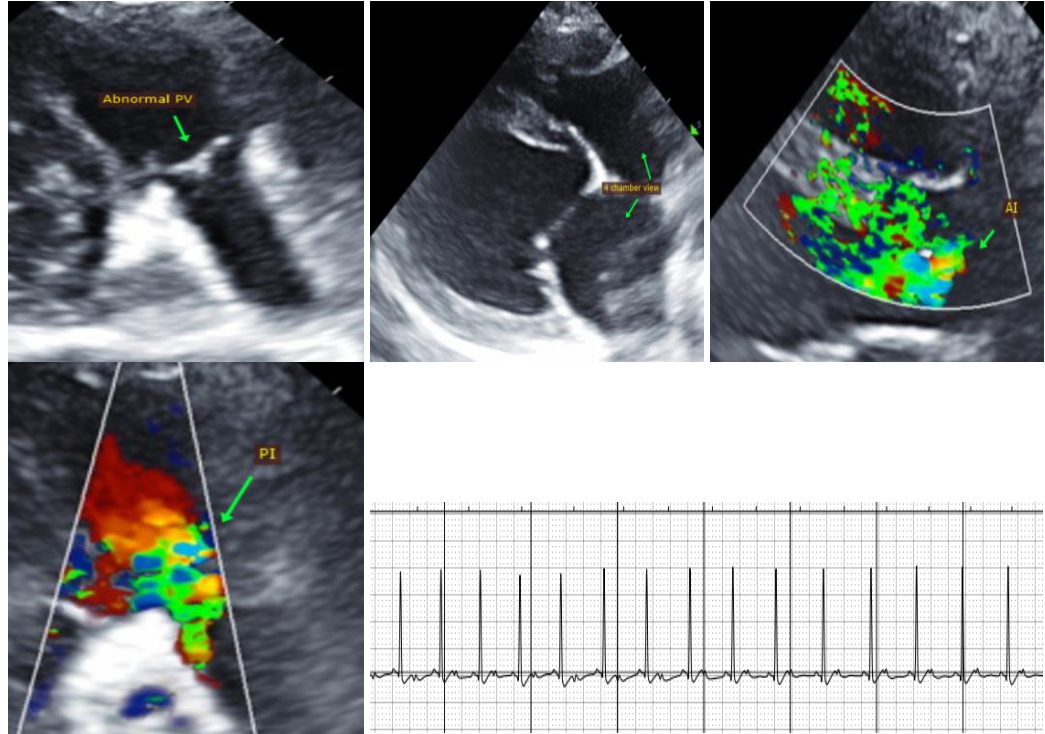
AGE

7 months

WEIGHT

47.8lbs

IMAGES



INTERPRETED BY

Maggie Machen Lamy, DVM, DACVIM
 (Cardiology)

IMAGING PERFORMED BY

Jenna Walsh, CVT

HOSPITAL NAME

South Willamette
 Veterinary Clinic

REFERRING VET

Dr. Daugherty

INVOICE

22527

DATE

2/11/22

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