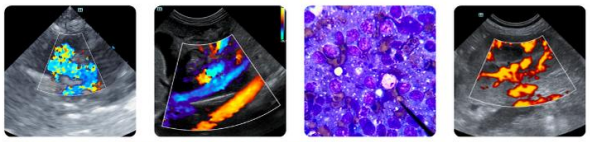

PATIENT

Goldie Ferreira

SPECIES

Canine

BREED

Chow Chow

SEX

Female Intact

AGE

1.3 months

WEIGHT

19lbs

INTERPRETED BY

Maggie Machen Lamy, DVM, DACVIM (Cardiology)

IMAGING PERFORMED BY

Gudrun Gunther, DVM

HOSPITAL NAME

New Frontier Animal Medical Center

REFERRING VET

Dr. Watts

INVOICE

47073

DATE

3/3/26

PRESENTING CLINICAL SIGNS

History: Heart murmur.

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. Trace 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 thickened with moderate tricuspid regurgitation present. 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. The PV leaflets are elongated and tethered. Mild post-stenotic dilation of the main pulmonary artery. Mild pulmonic insufficiency. The aortic valve appears to have normal morphology and mobility. Normal LVOT velocities. No AI. No obvious intra or extra-cardiac shunts are visualized. No pericardial or pleural effusion noted.

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	5.0	4.4	1.3	1.3	50	84	0.14
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	120	1.8	3.8	8.6	1.8	2.2	1.1
*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)
**Note: All measurements based upon multi-modal images and methods. An average value is reported.*				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)
Adapted from June Boon, Veterinary Echocardiography, 1998				25	2.18 (2.4)	4.48 (2.9)	3.10 (2.5)
Rishniw M and Hollis NE, J Vet Intern Med 2000; 14:429-435				30	2.33 (3.3)	4.83 (3.9)	3.39 (3.4)
Hansson et al, Vet Rad and Ultrasound 2002				35	2.48 (4.3)	5.17 (5.0)	3.69 (4.5)
Bonagura et al. Echocardiography: principles of interpretation, Vet Clin North Am 15:1177, 1995				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)

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

The cause of the murmur is elevated flow velocity through the pulmonary artery consistent with moderate pulmonic stenosis. No sub or supravalvular components were identified at this time, making a purely valvular stenosis most likely. The degree of obstruction is moderate based upon the maximum velocity/pressure gradient across the pulmonic valve and the secondary remodeling of the right ventricle. Moderate tricuspid regurgitation is also noted with tricuspid valve dysplasia. Unfortunately, this concurrent issue does reflect a more guarded prognosis. No additional congenital abnormalities were visualized.

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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. It should also be noted that the obstruction can worsen up to a year of age. 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, Atenolol is recommended once 6-months-old 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.

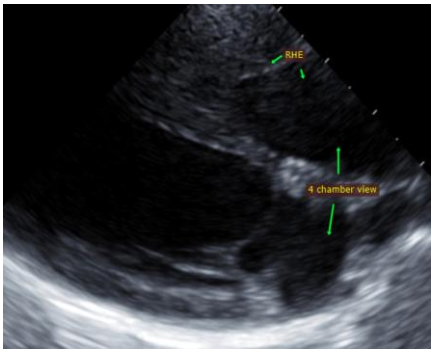
Anesthetic risk is mild to moderate at this time. **Avoid heart rate stimulating drugs such as atropine or glycopyrrolate unless absolutely necessary**. Avoid vasodilators such as acepromazine. Mild IV fluid restriction is advised. Cardiac protective drug choices (opioid/benzodiazepine premedication, 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.

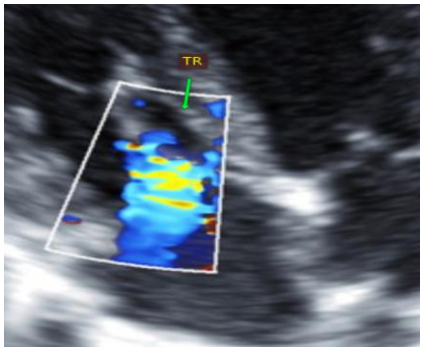
PLAN

Consider referral for evaluation/surgical consultation. Once 6 months old, 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. Up-titrate to effect.

Recommend recheck echocardiogram annually to assess for progression, response to medication.

IMAGES





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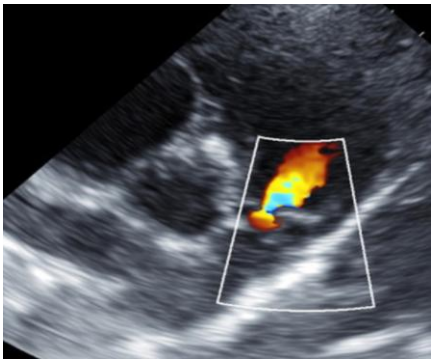

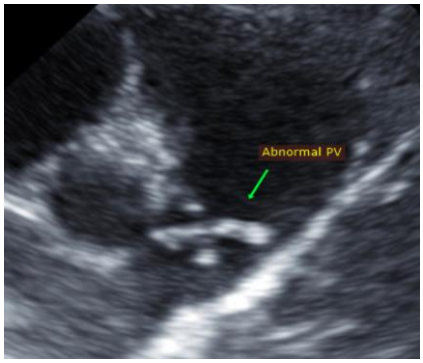

The information and recommendations provided are based on the images presented by the referring veterinarian. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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