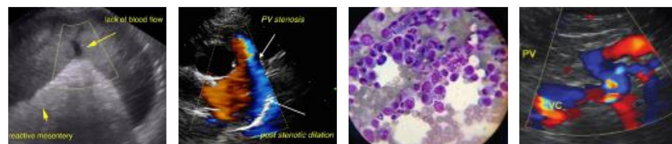
SonoPath
Clinical Sonography & Telecytology
EDUCATIONAL TELECONSULTATION SERVICES™



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

PATIENT
Maggie Rotondi

SPECIES
Canine

BREED
Newfoundland

SEX
Female

AGE
8 months

WEIGHT
93lbs

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

IMAGING PERFORMED BY
Jessica Miller

HOSPITAL NAME
Newton Veterinary Hospital

REFERRING VET
Dr. Bladek

INVOICE
23978

DATE
5/3/22

PRESENTING CLINICAL SIGNS

History: Murmur.

ECHOCARDIOGRAM FINDINGS

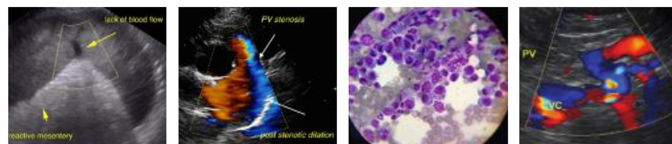
2D, m-mode, color flow and doppler imaging is available. Continuous flow detected with color Doppler in the pulmonary artery in the region of the ductus arteriosus. Spectral supports continuous flow; however, max velocity is not visualized. Moderate volume overload of the left heart with adequate systolic function. Mild LV hypertrophy consistent with pressure overload. Moderate LA dilation. Both leaflets of the mitral valve appear thickened and dysplastic with abnormal closure. Moderate eccentric MR. Normal velocity. Trace TR with mild tricuspid valve thickening. Normal velocity. The LVOT velocity is severely elevated with both a subaortic and valvular obstruction suspected. The pulmonic outflow velocities are only mildly elevated; however, the valve appears abnormal as well. MPA and branches are mildly dilated. 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	5.1	2.0	NM	1.7	34	62	0.6
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	150	6.1	2.5	42.2	5.5	6.1	4.0
*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

Complex congenital heart disease is present with abnormalities associated with all 4 valves. Additionally there is a patent ductus arteriosus (PDA) identified. A PDA is a congenital condition where a blood vessel present in the fetus remains open after birth. When patent, this allows blood to recirculate through the lungs inappropriately and volume overloads the left heart chambers as is seen here. There is also concurrent mitral valve dysplasia with mitral regurgitation. Additionally, severe stenosis is noted through the LVOT/aortic valve, which has led to mild LV hypertrophy. Finally, the tricuspid and pulmonic valves appear abnormal/dysplastic as well,



PATIENT
Maggie Rotondi

SPECIES
Canine

BREED
Newfoundland

SEX
Female

AGE
8 months

WEIGHT
93lbs

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

IMAGING PERFORMED BY
Jessica Miller

HOSPITAL NAME
Newton Veterinary Hospital

REFERRING VET
Dr. Bladek

INVOICE
23978

DATE
5/3/22

although to a much lesser extent. **Given the complexity of issues, highly recommended immediate referral to a local Cardiologist for advanced imaging and lifelong monitoring.**

Given the complexity of the issues, the patient will always be at risk for progression to CHF, arrhythmias, PDA reversal due to development of pulmonary hypertension, exertional syncope, and/or sudden death at home in the future. Monitor sleeping respiratory rates at home to screen for progression to CHF.

Gold standard therapy for the PDA is surgical closure of the vessel. This can be done interventionally or through a thoracotomy, and consultation with a local Cardiologist is recommended if sought. Success rates for the procedure are generally high; however, this abnormality must be assessed in light of current mitral valve dysplasia and aortic stenosis both which will likely limit prognosis. If surgical approach/referral is declined, it is difficult to know if medications will be beneficial. Pimobendan may be reasonable, although this is somewhat contraindicated with aortic stenosis. Given that the patient is asymptomatic, if referral declined I would not institute medications at this time.

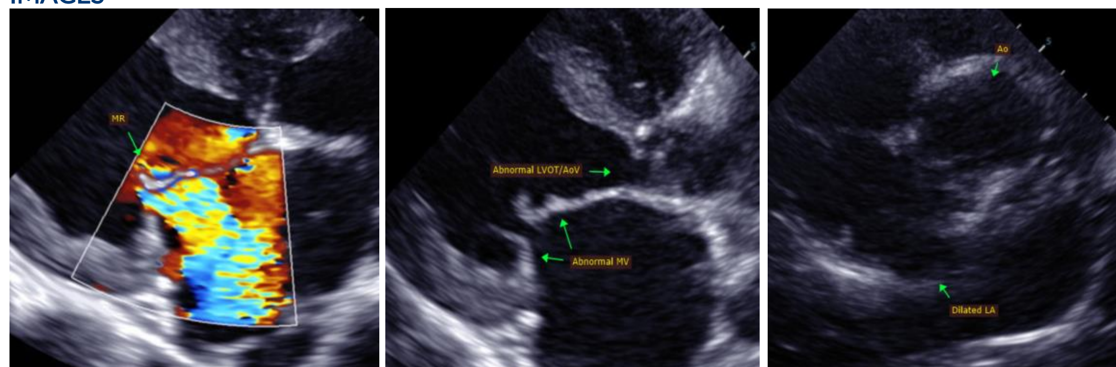
Anesthesia is not advised.

Monitoring of sleeping breathing rates is recommended as the best way to screen for progression to CHF at home. Mild activity restriction is advised. Monitor at home for breathing changes, worsening cough, fainting episodes, exertional dyspnea.

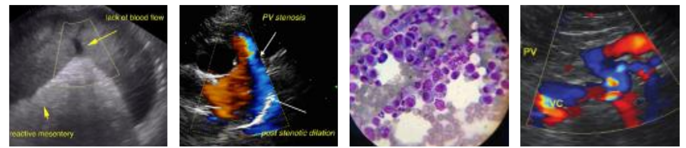
PLAN

Highly recommend referral for surgical discussion, advanced imaging and lifelong management. If declined, recommend recheck echocardiogram in 6 months.

IMAGES



SonoPath
Clinical Sonography & Telecytology
EDUCATIONAL TELECONSULTATION SERVICES™



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

PATIENT
Maggie Rotondi

SPECIES
Canine

BREED
Newfoundland

SEX
Female

AGE
8 months

WEIGHT
93lbs

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

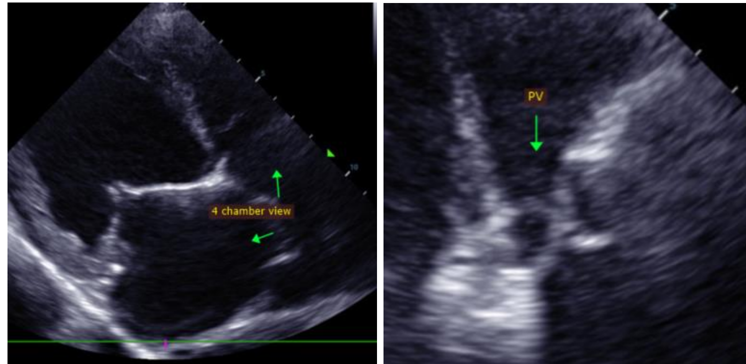
IMAGING PERFORMED BY
Jessica Miller

HOSPITAL NAME
Newton Veterinary Hospital

REFERRING VET
Dr. Bladek

INVOICE
23978

DATE
5/3/22



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