



PATIENT

Phoebe Buhr

PRESENTING CLINICAL SIGNS

History: Moderate to severe murmur. No current clinical signs. Cardiomegaly on rads.

SPECIES

Canine

BREED

Chihuahua

SEX

Female

ECHOCARDIOGRAM FINDINGS

2D, m-mode, color flow and doppler imaging is available. Continuous flow detected with color Doppler in the distal pulmonary artery in the region of the ductus arteriosus. High velocity shunt primarily L-R (5m/s). Moderate volume overload of the left heart with adequate systolic function. The LV is mildly dilated and spherical in appearance; hyperdynamic function. Moderate LA dilation. Trace mitral regurgitation. The right heart is normal in appearance without significant dilation or hypertrophy. Mildly elevated pulmonic outflow velocities. There is mild pulmonic insufficiency. The PV appears abnormal and tethered, consistent with valvular stenosis. No aortic insufficiency with a normal aortic valve. Normal aortic outflow velocity. No effusions seen. No cardiac tumors appreciated.

CARDIAC CHART

AGE

6 years

WEIGHT

5lbs

INTERPRETED BY

Maggie Machen Lamy,
DVM, DACVIM
(Cardiology)

IMAGING PERFORMED BY

Lindsey Daniel,
DVM

HOSPITAL NAME

Affordable Vet
Services

REFERRING VET

Dr. Duncan

INVOICE

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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	NA	NM	1.8	32	62	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	130	2.1	2.8	2.3	2.3	3.3	1.9
*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)
<i>*Note: All measurements based upon multi-modal images and methods. An average value is reported.</i>				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. There is a suspect shunt present (PDA likely, cannot rule out AP window) which has primarily left to right flow. This is leading to significant volume overload of the left heart. Moderate LA dilation is noted, indicating risk for progression to CHF in the future. There is also a visually abnormal pulmonic valve, with a tethered stenotic morphology and pulmonic insufficiency. The velocity through the valve is mildly increased, indicative of a mild stenosis. This does not appear to be hemodynamically significant however, as the RV morphology is reasonably normal. No obvious additional issues are identified.



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Given the complexity of disease and possibility of surgical intervention, **referral for evaluation by an attending cardiologist is highly recommended.** If this option is sought, I would not institute any medications at this time. If this is not an option, consider institution of Pimobendan as below. It is important to note however, that medications are based upon what is thought to be the biggest risk (LV volume overload) and there is some risk in treating without further diagnostics.

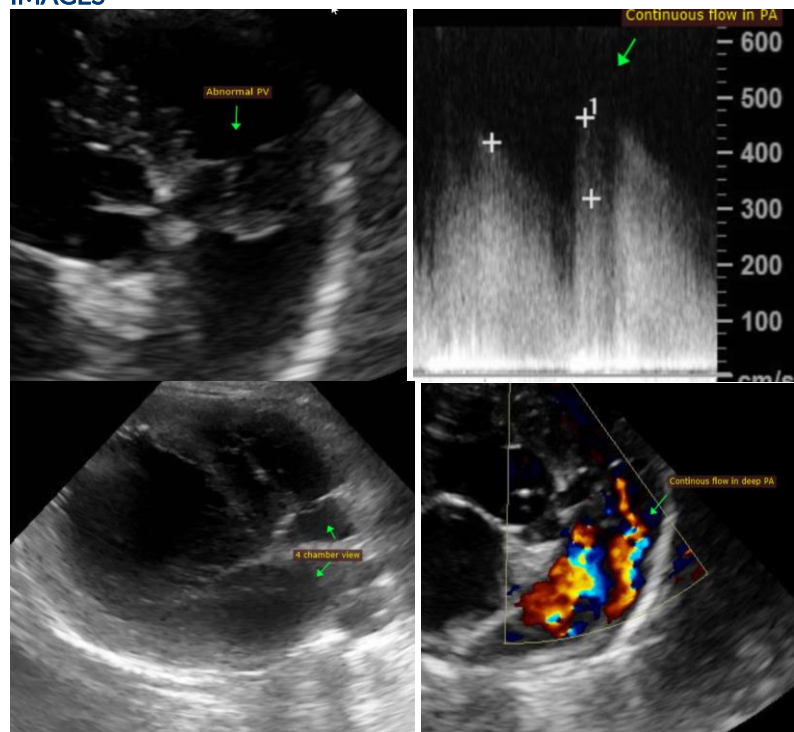
This patient is at high risk for progression to CHF, development of arrhythmias, PDA reversal due to development of pulmonary hypertension, exertional syncope, and/or sudden death at home. If left open, a cardiac shunt will no question shorten lifespan in this young dog, with CHF expected in the next 6-12 months. Monitor sleeping respiratory rates at home to screen for progression to CHF. Activity restriction is advised lifelong. Omega fatty acid supplementation may be of some long-term benefit.

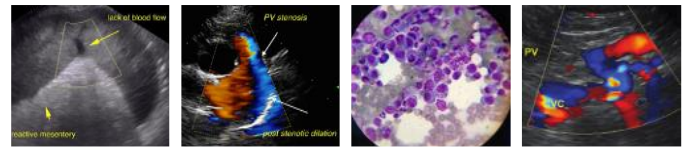
PLAN

Referral to a Cardiologist highly recommended. Screening BP and ECG recommended. If referral is declined, institute Pimobendan 0.3mg/kg PO q12h.

Recommend recheck exam and echocardiogram in 6 months to screen for progression, sooner if clinical signs arise (progressive cough, labored breathing, syncope, etc.).

IMAGES





PATIENT

Phoebe Buhr

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.

SPECIES

Canine

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.

BREED

Chihuahua

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

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Female

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