



PATIENT
 Cara Loved Again Pet
 Discute

SPECIES
 Canine

BREED
 Miniature Pinscher
 MiV

SEX
 Female Spayed

AGE
 4 years

WEIGHT
 7.6lbs

PRESENTING CLINICAL SIGNS

History: Presented 3/2/23 for crusted pinnal lesions bilaterally lesions were 2-4 mm. Murmur, grade 5/6 Heartworm test negative in house Heart Rate and Respiratory Rates 150 heart rate , respirations normal.

-Radiographs: Cardiomegaly generalized. Moderate left atrial enlargement, VHS 12.8, lungs clear.

RADIOGRAPHIC FINDINGS *NOTE: Images submitted for supplemental cardiac information only.
 Globoid cardiomegaly without obvious evidence of CHF.

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. High velocity shunt primarily L-R (max 5m/s). Moderate to severe LV dilation with evidence of volume overload and mild dysfunction. The LV spherical in appearance. Severe LA dilation. Mild central MR. Normal velocity. No obvious TR. Normal pulmonic outflow velocities; no pulmonic insufficiency. MPA and branch dilation. The PV appears normal. Mildly elevated aortic outflow velocities with no AI. No pericardial or pleural effusion noted. No obvious cardiac masses.

CARDIAC CHART

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

IMAGING PERFORMED BY
 Jenna Walsh, CVT

HOSPITAL NAME
 Four Corners
 Veterinary Clinic

REFERRING VET
 Dr. Whyte

INVOICE
 29530

DATE
 3/10/23

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	4.5	NA	NM	2.2	33	60	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	170	2.1	1.0	3.4	2.4	3.9	2.6
*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)
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				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)



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INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

The cause of the murmur is a patent ductus arteriosus (PDA). This 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 trivial MR; however, these are clinically insignificant at this time. It is important to note that other small congenital defects can be easily missed in these cases, and advanced imaging with a Cardiologist is recommended.

Given severe LA/LV dilation, this patient is at risk for imminent CHF, arrhythmias, PDA reversal due to development of pulmonary hypertension, exertional syncope, and/or sudden death in the future. Monitor sleeping respiratory rates at home to screen for progression to CHF.

Gold standard therapy 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 (**highly recommended**). Success rates for the procedure are generally high, particularly given the asymptomatic status. That being said, this patient has significant chronic volume overload that may not resolve with surgery. This must be considered when determining what course of action is best. As lifelong medications may be necessary. Regardless of whether or not surgery is elected, cardiac support with Pimobendan, ACE-I and Spironolactone is recommended for both short-term and long-term benefit. If surgery is not an option, prognosis is guarded to poor long term and close monitoring is advised.

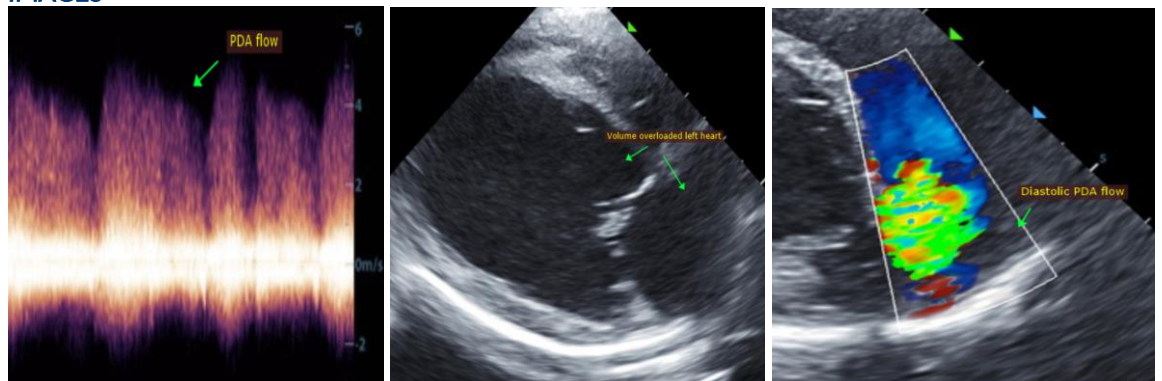
Omega fatty acid supplementation and mild salt restriction may be of some long term benefit. Monitoring of sleeping breathing rates is recommended as the best way to screen for progression to CHF at home. Mild activity restriction is advised. Monitor at home for breathing changes, worsening cough, fainting episodes, exertional dyspnea.

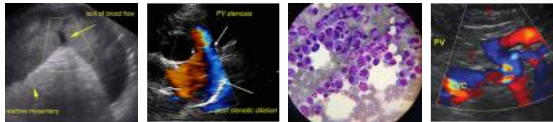
PLAN

Institute Pimobendan 0.3mg/kg PO q12h. Institute Spironolactone 1-2mg/kg PO q12h. Pending BP >130mmHg, institute ACE-I 0.5mg/kg PO q12h. Recommend referral to a local Cardiologist for surgical consultation.

If not an option, reassess structure and function every 6 months lifelong to assess need for additional medications, sooner if clinical signs arise (progressive cough, labored breathing,

IMAGES





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Dacota

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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
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