


PATIENT

Duke Letto

SPECIES

Canine

BREED

Barbet

SEX

Male

AGE

3 months

PRESENTING CLINICAL SIGNS

History: Presented for Puppy visit 2 of 3. Owners have had no concerns with Duke since they got him, although their breeder mentioned that the DVM who did their first vaccines noted a heart murmur. Upon exam it is noted that he is BAR and euhydrated, and has a grade 5-6/6 holosystolic heart murmur with a precordial thrill.

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 with a normal left atrial dimension. Normal LV diameter with adequate myocardial function. The tricuspid valve appears normal with no tricuspid regurgitation. Mild right atrial enlargement; moderate right ventricular hypertrophy consistent with pressure overload. Pulmonic outflow velocities are elevated at the level of the valve consistent with severe stenosis. Outflow profile shows a dynamic and fixed obstruction. The pulmonic valve appears severely thickened, tethered and stenotic. There is significant post-stenotic dilation of the main pulmonary artery and branches. Mild pulmonic insufficiency. The aortic valve appears to have normal morphology and mobility. No obvious cardiac shunts are present. No pericardial or pleural effusion noted.

CARDIAC CHART
WEIGHT

16.8lbs

INTERPRETED BY

 Maggie Machen Lamy,
 DVM, DACVIM
 (Cardiology)

IMAGING PERFORMED BY

 Jacquie Pankatz,
 DVM

HOSPITAL NAME

 Mountain Vista
 Veterinary Hospital

REFERRING VET

Dr. Pankatz

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	5.2		1.3	2.0	48	81	0.05
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		1.6	4.5	7.6	1.4	2.8	1.46
*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)
				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)

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

The cause of the murmur is severe valvular pulmonic stenosis. The degree of obstruction is severe based upon the velocity/pressure gradient across the pulmonic valve and the secondary hypertrophy and remodeling of the right ventricle. There is mild RA dilation indicating the risk for CHF is currently low; however, in the future this will be elevated, and will likely limit lifespan. No

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other congenital abnormalities were visualized, however small shunts or defects can be difficult to identify without a sedated bubble study in patients this young.

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Referral for balloon valvuloplasty should be considered in this patient as the gold standard therapeutic option for this condition, and may improve long term outcome and delay onset of clinical signs (including exertional syncope and right-sided congestive heart failure). If surgery is not elected, this patient's condition will likely limit lifespan, with many severe PS cases developing CHF by mid-life. Regardless, medical management with atenolol is recommended to decrease heart rate and lessen the obstruction as below; however, should not be instituted until 4-6 months of age. Monitor for development of associated clinical signs (collapse, abdominal distention, cough, labored breathing). **Mild exercise restriction is advised.**

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

AGE

3 months

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.

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Plan: Once 4-6 months of age, institute atenolol to effect: 25mg tabs, ¼ tab PO BID to start (up-titrate to desired effect). Goal is to suppress heart rate <120-140bpm even with stress/activity. Baseline chest radiographs and ECG are recommended. Referral for balloon valvuloplasty ASAP if desired.

INTERPRETED BY

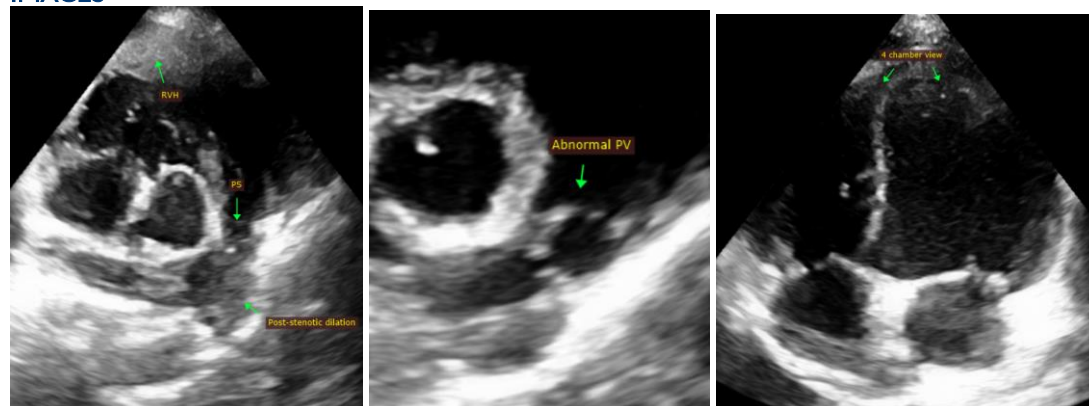
Maggie Machen Lamy,
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(Cardiology)

If surgery is declined, recommend recheck echocardiogram in 6 months to assess for progression, response to medication.

IMAGING PERFORMED BY

Jacque Pankatz,
DVM

IMAGES



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Veterinary Hospital

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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.

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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



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or if I can be of any further assistance please contact me.

Maggie Machen Lamy, DVM

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