



PATIENT

Penny Buehler

PRESENTING CLINICAL SIGNS

History: Grade 2-3/6 left sided heart murmur. Brachycephalic airway disease. Assess prior to anesthesia.

SPECIES

Canine

ELECTROCARDIOGRAPHIC FINDINGS

A six lead ECG is available at 25mm/s; 10mm/mV. The average heart rate is 140bpm (range 107-188bpm). The rhythm is sinus in origin, with a p for every QRS complex and vice versa. The P wave morphology is positive with a normal dimension. Normal PR. The QRS morphology is positive with normal dimension. MEA is normal. No ectopic beats, pauses or dysrhythmias observed.

BREED

French Bulldog

ECG diagnosis: Normal sinus rhythm with respiratory variation.

SEX

Female Spayed

ECHOCARDIOGRAM FINDINGS

2D, m-mode, color flow and doppler imaging is available. Mild mitral valve thickening with no obvious prolapse into the left atrial lumen. No mitral regurgitation. Normal left atrial dimension. Normal LV diameter with adequate myocardial function. The LV wall thickness is normal. The tricuspid valve appears normal with no TR. Mild right atrial dilation. Mild right ventricular prominence with mild RV hypertrophy. Moderate elevation of pulmonic outflow velocities at the level of the valve. The PV appears thickened, with mild post-stenotic dilation of the branch PA's. No pulmonic insufficiency. The aortic valve appears to have normal morphology and mobility. No pericardial or pleural effusion noted. No obvious cardiac masses.

AGE

4 years

WEIGHT

19.2lbs

CARDIAC CHART

INTERPRETED BY

Maggie Machen Lamy,
DVM, DACVIM
(Cardiology)

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	1.3	38	70	NM
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	NM	1.4	3.8	8.7	1.7	3.2	2.0
*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)
				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)

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

IMAGING PERFORMED BY

Dana Alterman,
RDCS, LVT

HOSPITAL NAME

Eubank Animal Clinic

REFERRING VET

Dr. Gardner

INVOICE

32233

DATE

8/8/23

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

The cause of the murmur is valvular pulmonic stenosis. This is a congenital abnormality of the valve, which is present from birth. A purely valvular stenosis is appreciated without a sub or supra valvular component. It is important to note that a congenital coronary anomaly is also



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common in this breed, which can further exacerbate the finding. Regardless, the degree of obstruction is mild to moderate based upon the velocity/pressure gradient across the pulmonic valve and minimal secondary hypertrophy and remodeling of the right ventricle. No additional issues are identified, and the ECG is unremarkable.

SPECIES

Canine

Moderate PS cases fall within a grey zone, as most patients will not experience clinical signs (syncope, right-sided congestive heart failure) throughout their lifetime. While some risk for progression to clinical signs will always remain, given that this case is 4yo without any issues, no medications are warranted at this time. This should be reconsidered if any exertional syncope or lethargy is noted in the future. Surgical intervention is not recommended in this case.

BREED

French Bulldog

SEX

Female Spayed

Monitor for development of associated clinical signs (exertional collapse, abdominal distention, cough, labored breathing). Omega fatty acid supplementation may have some long-term benefit, given that these cases are predisposed to development of arrhythmias going forward.

AGE

4 years

Anesthetic risk is considered mild if needed. Cardiac protective drug choices (opioid/benzodiazepine premedication, propofol or alfaxalone induction, isoflurane gas) are recommended. Pre-oxygenate for 5-10 minutes prior to induction. Monitor for arrhythmias, hypotension, and hypoxia both intra and post-operatively and intervene as necessary. Mild IV fluid restriction is recommended to avoid fluid overload. **Avoid heart rate stimulating drugs such as atropine unless clinically indicated.**

WEIGHT

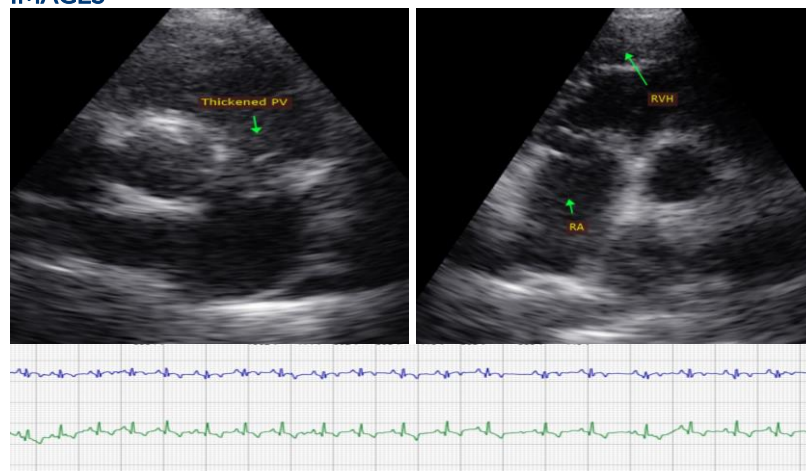
19.2lbs

Recommend recheck echocardiogram in 1 year to assess for progression, response to medication.

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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.

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

DATE

8/8/23

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