



PATIENT

Finlay Klema

PRESENTING CLINICAL SIGNS

History: Newly adopted. Was cleared at shelter for wellness check. Came in for vaccine exam and a grade 4/6 heart murmur was noted.

SPECIES

Canine

RADIOGRAPHIC FINDINGS *NOTE: Images submitted for supplemental cardiac information only.
Mild RH cardiomegaly. Bulge in the region of the great vessels. No obvious evidence of CHF.

BREED

Chihuahua Mix

ELECTROCARDIOGRAPHIC FINDINGS *Note: Single lead ECGs are evaluated as a rhythm strip. Morphology/MEA cannot be definitively commented on.
A single lead ECG is available; 25mm/s, 10mm/mV. The average heart rate is 150bpm (range 107-188bpm). P waves are difficult to identified throughout; however, a sinus origin is suspected. P for every QRS complex and vice versa. The P and QRS morphologies are positive. No ectopic beats, pauses or other dysrhythmias observed.
ECG diagnosis: Normal sinus rhythm with respiratory variation.

SEX

Male Intact

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. Normal left atrial dimension. Normal LV diameter with adequate function. The LV wall is normal. The tricuspid valve appears normal in form with trivial tricuspid regurgitation present. Mild right heart prominence. Elevated pulmonic outflow velocities, suspected to be at the level of the valve. The PV appears thickened although not extensively visualized. Mild to moderate post-stenotic dilation. Moderate pulmonic insufficiency. The aortic valve appears to have normal morphology and mobility. Normal outflow velocity. No obvious congenital shunts. No pericardial or pleural effusion noted.

AGE

3 months

WEIGHT

6.9lbs

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	1.5	1.6	50	92	0.2
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	1.06	2.0	3.1	1.6	1.8	0.9
*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)
				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

Kim Liedberg

HOSPITAL NAME

SVS Imaging WI

REFERRING VET

Dr. Beyer

INVOICE

22993

DATE

3/8/22

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INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

The diagnosis is pulmonic stenosis (PS). The valve itself is suspected to be the issue; however, the max velocity through the region is not able to be accurately assessed. The right heart is prominent with at least mild post-stenotic dilation, which likely suggests at least mild to moderate disease. No additional obvious issues are identified. The ECG is unremarkable, with a respiratory sinus arrhythmia.

Any congenital case should ideally be offered referral to an attending Cardiologist as the gold standard, in order to confirm the presumptive diagnosis and assess for other small defects that are difficult to identify. This often requires advanced diagnostics such as a bubble study and may alter treatment and prognostic information. Given a disease of questionable severity, this should be considered. Surgical intervention may be a possibility should the disease progress and the patient's body size allow.

Use of Atenolol is typically based upon severity of disease; however, this certainly would not be initiated if indicated until the patient is at least 4 months of age. If referral is elected, reassessing the disease once 4-6 months old would be recommended prior to initiating Atenolol. Alternatively, reassessing the echocardiogram can be elected.

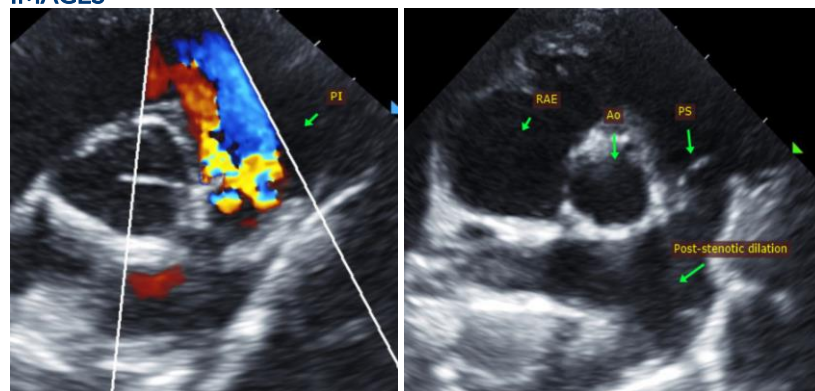
Prognosis is highly dependent on severity, which can increase up to 1 year of age. Close follow up is advised as this puppy ages.

Monitor at home for symptoms including exercise intolerance, difficulty breathing, abdominal distention and/or syncope (fainting). Mild activity restriction is advised lifelong.

Anesthetic risk is considered mild if needed. Avoid heart rate stimulating drugs such as atropine or glycopyrrolate. Avoid excessive vasodilation/hypotension. Pre-oxygenate for 5-10 minutes prior to induction. A reasonable protocol would be as follows: premedicate with opioid/benzodiazepine, propofol or alfaxalone induction, isoflurane maintenance. Monitor ECG, BP as is standard.

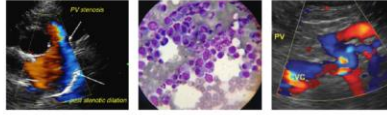
PLAN

Recommended referral for advanced evaluation at 4-6 months of age. If declined, recommend recheck echocardiogram in 6 months to reassess severity and need for medical management.

IMAGES

IMAGING PERFORMED BY

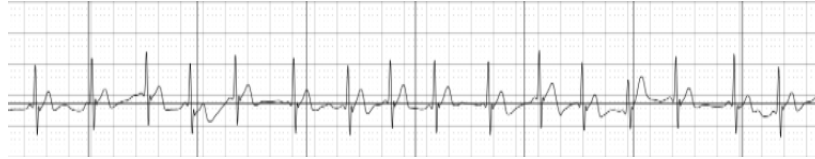
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The information and recommendations provided are based on the images presented by the referring veterinarian. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

BREED

Chihuahua Mix

Thank you for this referral. If the clinical or image interpretation does not parallel your findings or if I can be of any further assistance, please contact me.

SEX

Male Intact

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

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