



PATIENT PRESENTING CLINICAL SIGNS

Venom Spadoni

History: Grade 3/6 murmur since puppy.

SPECIES

RADIOGRAPHIC FINDINGS *NOTE: Images submitted for supplemental cardiac information only.
Right-sided cardiomegaly. No obvious evidence of CHF.

Canine

ECHOCARDIOGRAM FINDINGS *Image quality significantly limited by abnormal chest conformation/cardiac window.

BREED

Bulldog Mix

2D, m-mode, color flow and doppler imaging is available. Mild thickening of the mitral valve with no obvious prolapse into the left atrial lumen. No obvious mitral regurgitation. Normal left atrial dimension. Normal LV diameter with normal myocardial function. The LV wall appears normal. Mild subaortic narrowing is suspected, although not extensively visualized. The tricuspid valve appears mildly thickened with no significant TR. Mild right atrial dilation. Significant right ventricular hypertrophy and remodeling indicative of pressure overload. Right ventricle is mildly dilated. A dynamic RVOT obstruction can be seen, secondary to hypertrophy. Pulmonic outflow velocities are elevated, although the level of the obstruction cannot be visualized. PV is not visualized. There is marked post-stenotic dilation of the main pulmonary artery and branches. Mildly elevated aortic outflow velocity. No obvious aortic insufficiency. No obvious cardiac shunts are present. No pericardial or pleural effusion noted.

SEX

Female

AGE

2 years

WEIGHT

41lbs

CARDIAC CHART

INTERPRETED BY

Maggie Machen
Lamy, DVM, DACVIM
(Cardiology)

IMAGING PERFORMED BY

Rebekah Jakum, CVT
ARDMS/RVT

HOSPITAL NAME

Maple Hills
Veterinary Hospital

REFERRING VET

Dr. Banzhof

INVOICE

25804

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8/16/22

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			NM	1.0	35	66	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	150	3.0	4.6	18.6	2.0	2.3	1.5
*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



PATIENT INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

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The cause of the murmur is severe valvular pulmonic stenosis. The degree of obstruction is severe based upon the appearance of the right heart and velocity through the region. The pulmonic valve is not visualized and a valvular versus sub/supra-valvular stenosis cannot be determined. In this particular breed, a coronary anomaly is also a possibility. Regardless, there is mild RA dilation and severe RV hypertrophy, suggest hemodynamic significance. There is also suspect mild subaortic stenosis, which appears comparatively mild. No other congenital abnormalities are visualized; however, these are certainly not ruled out. Image quality is limited in this case due to abnormal chest conformation/cardiac window and referral is strongly recommended for advanced imaging.

Depending on the level of stenosis, balloon valvuloplasty should be considered in this patient as the gold standard therapeutic option for this condition if possible 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. Monitor for development of associated clinical signs (collapse, abdominal distention, cough, labored breathing). Mild exercise restriction is advised.

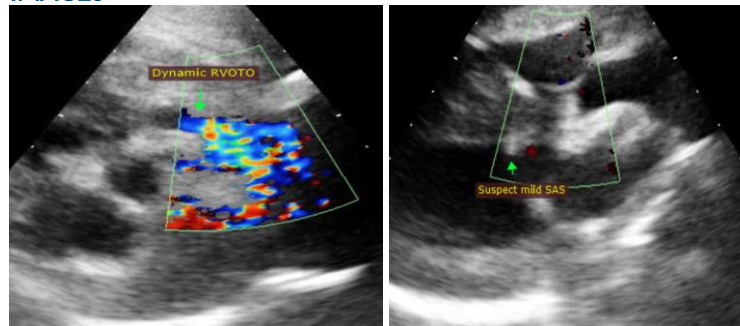
Anesthetic risk is mild to moderate at this time. Avoid heart rate stimulating drugs such as atropine or glycopyrrolate unless absolutely necessary. Avoid vasodilators such as acepromazine. Mild IV fluid restriction is advised. Cardiac protective drug choices (opioid/benzodiazepine premedication, propofol 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.

PLAN

Recommend referral for advanced imaging and surgical discussion. 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 ECG recommended.

If surgery is declined, recommend recheck echocardiogram in 6-12 months to assess for progression, response to medication.

IMAGES



HOSPITAL NAME

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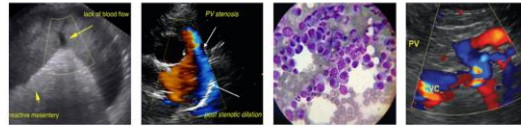
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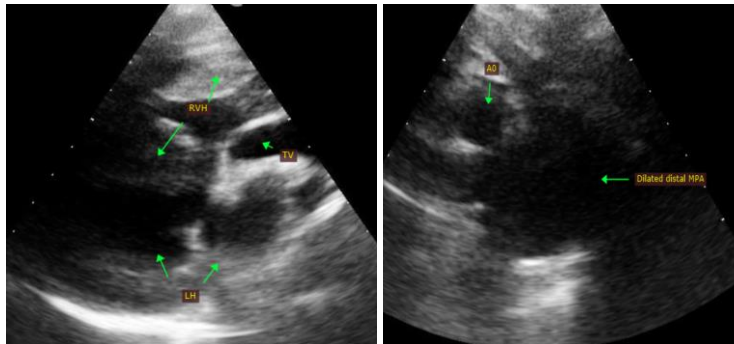
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The information and recommendations provided are based on the images presented by the referring veterinarian. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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
Diplomate of the American College of Veterinary Internal Medicine (Cardiology)