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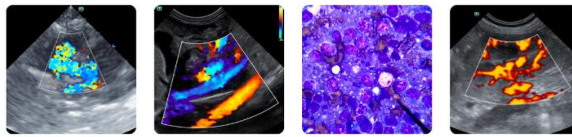

Clinical Sonography & Telecytology
Educational Teleconsultation Services™

SonoPath
FOSTERING THE ART OF VETERINARY MEDICINE™
SonoPath.com info@sonopath.com 1.800.838.4268

PATIENT

Zoe Brown

SPECIES

Canine

BREED

Maltese Mix

SEX

Female Spayed

AGE

5 years

WEIGHT

21lbs

INTERPRETED BY

Maggie Machen Lamy, DVM, DACVIM (Cardiology)

IMAGING PERFORMED BY

Loetitia Saint-Jacques, LVT

HOSPITAL NAME

Mountian View Animal Hospital

REFERRING VET

Dr. Brown

INVOICE

47440

DATE

4/6/26

PRESENTING CLINICAL SIGNS

History: New grade 4/6 L apical holosystolic murmur, precordial thrill, no arrhythmias. BP: 84mmHg. Labs: WNL. CXR: Sliding hiatal hernia. Otherwise, unremarkable thorax with no neoplastic disease or cardiomegaly.

RADIOGRAPHIC FINDINGS *NOTE: Images submitted for supplemental information only.

Mild cardiomegaly. No obvious evidence of CHF.

ELECTROCARDIOGRAPHIC FINDINGS

A six lead ECG is available at 25mm/s; 10mm/mV. The average heart rate is 160bpm with periods of sinus tachycardia. 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. Single VPC is suspected. No APCs, pauses or other dysrhythmias observed.
ECG diagnosis: Normal sinus rhythm with periods of sinus tachycardia and a single VPC.

ECHOCARDIOGRAM FINDINGS

2D, m-mode, color flow and doppler imaging is available. The left ventricular wall is mildly hypertrophied (0.8cm). There is a diffusely hyperechoic endocardium consistent with remodeling. LV chamber is normal. No significant MR. Mild papillary muscle remodeling. The left atrium is normal. The right atrium is normal in size. The right ventricle appears normal. The mitral valve is elongated that prolapses into the LVOT in systole. Trace tricuspid regurgitation seen. Normal velocity. Blood flow through the LVOT is elevated. No obvious aortic insufficiency noted. Normal aortic valve. Normal RVOT velocity. No obvious PS. No evidence of cardiac tumors or additional congenital issues in this scan. No pleural or pericardial effusion seen.

CARDIAC CHART

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	2.5	NM	1.3	43	80	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	3.0	1.3	9.5	1.9	2.1	1.2
*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 *Note: All measurements based upon multi-modal images and methods. An average value is reported.*				5	1.40 (4.5)	2.74 (5.2)	1.60 (4.7)
				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)

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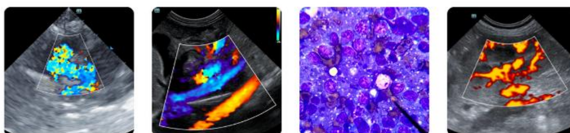

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Adapted from June Boon, Veterinary Echocardiography, 1998	30	2.33 (3.3)	4.83 (3.9)	3.39 (3.4)
Rishniw M and Hollis NE, J Vet Intern Med 2000; 14:429-435	35	2.48 (4.3)	5.17 (5.0)	3.69 (4.5)
Hansson et al, Vet Rad and Ultrasound 2002	40	2.62 (5.2)	5.48 (6.1)	3.96 (5.4)
Bonagura et al. Echocardiography: principles of interpretation, Vet	50	2.88 (7.1)	6.07 (8.3)	4.46 (7.4)

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

The diagnosis is likely mitral valve dysplasia with a secondary LVOT obstruction. There is mild hypertrophy of the LV secondary to pressure overload caused by obstruction to flow. There is no left atrial dilation indicating the risk for complication is currently low, however may progress going forward. No additional issues are identified.

The ECG is largely normal with periods of sinus tachycardia. A single VPC is suspected, which is of little consequence in a stressed dog. No additional issues are seen.

Cases with a hyponymically significant outflow tract obstruction may benefit from Atenolol lifelong. If able to be medicated, given LVH, this is recommended as below. No other medications are necessary at this time.

Omega fatty acid supplementation may be useful for anti-arrhythmic benefits. Mild activity restriction is advised. Monitor at home for any respiratory signs or clinical lethargy/collapse.

Prognosis is guarded until progression and response to atenolol is assessed. This is an uncommon disease in dogs, making it difficult to predict outcome. Patient will the at risk for associated clinical signs including arrhythmias, CHF, and/or sudden death lifelong.

Anesthetic risk is considered mild, however judicious IV fluid rates are advised to avoid fluid overload. Additionally, drugs that stimulate heart rate should be avoided unless clinically necessary (glycopyrrolate, atropine). Avoid vasodilators as this may worsen the obstruction. A reasonable protocol includes opioid/benzodiazepine premedication, propofol induction, isoflurane maintenance.

PLAN

If able, institute titrating dose of Atenolol: 25mg tablets; give ¼ tab once daily. Recheck heart rate in 1-2 weeks with target stressed rate of <140bpm, Increase as needed until target reached. Periodic HR monitoring is recommended. Baseline BP is recommended.

Recommend recheck echocardiogram in 1 year to assess for progression, sooner if clinical issues arise.

IMAGES

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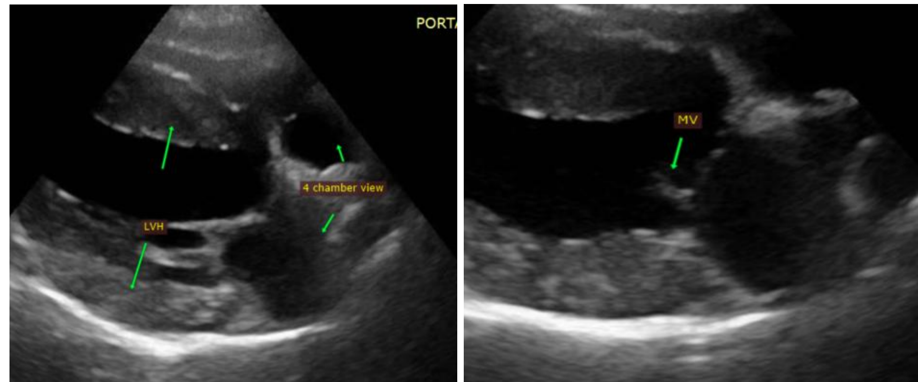

The information and recommendations provided are based on the images presented by the referring veterinarian. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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)
info@sonopath.com