



PATIENT

Dalton Calma

SPECIES

Canine

BREED

Maltese

SEX

Male Neutered

AGE

14 years

WEIGHT

12.2lbs

INTERPRETED BY

Maggie Machen Lamy,
DVM, DACVIM
(Cardiology)

IMAGING PERFORMED BY

Amy Mayhew, LVT

HOSPITAL NAME

SVS Imaging MI

REFERRING VET

Family Pet Practice

INVOICE

22981

DATE

3/8/22

PRESENTING CLINICAL SIGNS

History: Presented today for coughing past week and recent lethargy. Received 25mg of Trazodone last night. Grade 4/6 heart murmur noted on both sides. HR 140.
-Abnormal PE/Chem/CBC/UA Results: Mild increase in ALKP (352), mild anemia HCT 31.5% remainder of BW NSF.

RADIOGRAPHIC FINDINGS *NOTE: Images submitted for supplemental cardiac information only.
Marked globoid cardiomegaly. No obvious evidence of CHF.

ECHOCARDIOGRAM FINDINGS

2D, m-mode, color flow and doppler imaging is available. Mild diffuse thickening of mitral valve leaflets with mild prolapse into the left atrial lumen. Mild to moderate mitral regurgitation with minimal left atrial enlargement. Normal LV diameter with adequate function. The tricuspid valve appears mildly thickened with mild tricuspid regurgitation. Borderline velocity. Mild right heart prominence. No obvious cardiac tamponade. The pulmonic and aortic valves are normal in morphology and mobility. Normal pulmonic and aortic outflow velocities with laminar flow. No obvious aortic or pulmonic insufficiency. **Large volume pericardial effusion.** No obvious pleural effusion. The right AV groove appears hypoechoic and irregular, although no definitive masses 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	5.3	2.9	NM	1.6	42	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	0.7	0.8	5.5	2.1	2.4	1.4
*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 clinical signs is large volume pericardial effusion of unknown origin. The cardiac dimensions and function are only mildly abnormal with mild degenerative valve disease. There is mild left atrial enlargement present indicating risk for structural complication is low. While the AV

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groove appears hypoechoic and irregular, although this is certainly not definitive for a mass. It is important to note that extra-cardiac masses are easily missed, and a thoracic CT scan or MRI would be necessary to fully evaluate the surface of the heart.

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Given these findings, no clear cause of the effusion is identified. The next step in this case would be an **immediate diagnostic and therapeutic pericardiocentesis** to determine the type of effusion present and improve clinical status. A hemorrhagic effusion would suggest a small tumor or bleeding disorder, versus a transudate may support neoplasia, etc. Submitting the fluid for cytology and potentially a culture may also be useful, as in an atypical signalment there is no clear answer at this time. There is no clear cause for typical right-sided congestive heart failure seen here, such as severe right heart disease, history of rapid arrhythmias (tachycardia-induced cardiomyopathy), severe pulmonary hypertension, etc. and there is no indication for Lasix or Pimobendan at this time. Given the highly unusual signalment in this case (i.e., Maltese's rarely get pericardial effusion), **referral to a multispecialty center should also be considered**. Pending results of the tap, further systemic evaluation/treatment may become indicated.

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Prior to a tap, no additional cardiac medications are recommended. A screening BP is recommended, as hypotension is suspected.

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Monitor for development of a cough, labored breathing, exercise intolerance or collapse episodes.

WEIGHT

12.2lbs

PLAN

Consider referral as discussed. Immediate pericardiocentesis is highly recommended for both diagnostic and therapeutic purposes, with submission for cytology/culture. If this cannot be done safely in your facility, immediate referral should be recommended. Full systemic evaluation may be indicated. Consider hospitalization, fluid therapy, CXR, etc.

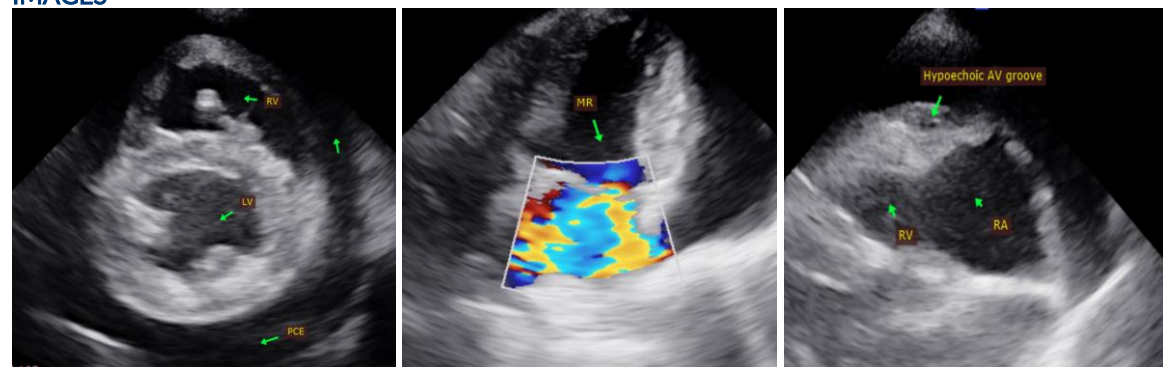
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Recheck echocardiogram pending results of further evaluation.

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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. If the clinical or image interpretation does not parallel your findings or if I

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EDUCATIONAL TELECONSULTATION SERVICES™

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can be of any further assistance, please contact me.

Maggie Machen Lamy, DVM
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