



PATIENT

Reaper Helms

SPECIES

Canine

BREED

Belgian Malinois

SEX

Male Neutered

AGE

4 years

WEIGHT

70lbs

INTERPRETED BY

Maggie Machen Lamy,
DVM, DACVIM
(Cardiology)

IMAGING PERFORMED BY

Amy Mayhew, LVT

HOSPITAL NAME

SVS Imaging MI

REFERRING VET

Dr. Rangl

INVOICE

28192

DATE

1/9/23

PRESENTING CLINICAL SIGNS

History: Recent change to high protein diet due to being thin. Last week, patient became lethargic. BW revealed mildly high renal values. BP was 50mmHg. Brief aus of kidneys were normal. Returned today after supportive care and not much improvement.

RADIOGRAPHIC FINDINGS *NOTE: Images submitted for supplemental cardiac information only.
Normal cardiac silhouette. 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 no prolapse into the left atrial lumen. No mitral regurgitation with a normal left atrial dimension. No LV dilation in diastole; however, the systolic dimension is mildly increased (LVIdDn: 1.59, LVIdSn: 1.21). Moderate to severe systolic dysfunction. The tricuspid valve appears normal with trace tricuspid regurgitation. Normal right atrial and ventricular diameter and morphology; no overt evidence of pulmonary arterial hypertension. The pulmonic and aortic valves are normal in morphology and mobility. Trace PA. No pericardial or pleural effusion noted. No obvious cardiac masses.

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	NM		NM	1.2	12	20	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	0.55	0.5	31.8	2.5	4.1	3.6
*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)

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

Unfortunately, this patient has changes most consistent with occult Dilated Cardiomyopathy (DCM). There is a decline in systolic function, accompanied by LV dilation in systole. There is no significant increase in LV sphericity or dilation in diastole, which may suggest a relatively acute onset. The LA is normal, indicating relatively low risk for complication at this time. In the future

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the risk may increase for development of congestive heart failure, malignant arrhythmias (AF, VT), collapse and/or sudden death. No additional issues are identified.

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Given what is seen here, consider Pimobendan in this case and close monitoring to help give the best prognosis possible. No additional medications are indicated at this time.

BREED

Belgian Malinois

Systolic dysfunction can be primary in nature, such as cardiomyopathy; however, other contributing factors should certainly be considered in this unusual case. Myocarditis must be considered and a troponin level may be helpful. Full systemic evaluation is recommended given the presenting clinical issues, as most dogs with this degree of disease are asymptomatic (ie this is suspected to be secondary rather than a primary issue). The diet was recently changed and if a nontraditional option was administered previously, this could also be considered. Taurine levels may be beneficial; however, regardless of results a Taurine supplement is suggested. A thorough history should also be obtained if possible to rule out any congenital or in utero issues, such as Parvovirus. **Any animal with atypical findings should consider referral to a multi-specialty center, particularly if the systemic malaise does not improved.**

AGE

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Monitor for development of a cough, labored breathing, exercise intolerance or collapse episodes in the future. Monitoring of sleeping breathing rates at home is recommended to screen for progression in the future. Mild activity restriction is advised. Omega fatty acid supplementation and mild salt restriction may be of some long-term benefit.

WEIGHT

70lbs

PLAN

Institute Pimobendan 0.25-0.3mg/kg PO q12h. Institute Taurine supplement 1000mg PO q12h. Consider thyroid panel, cTnI, taurine level as discussed. Full systemic workup should be initiated. Baseline ECG suggest. Consider referral to a multi-specialty center if the patient has any further decline.

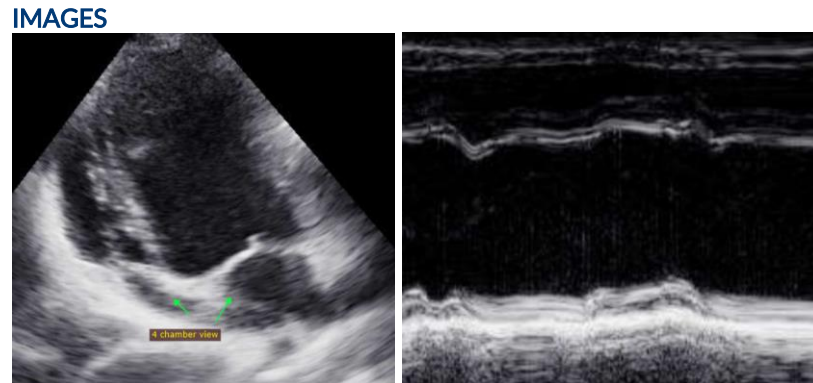
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A recheck echocardiogram is recommended in 3-4 months to assess for progression, sooner if clinical signs arise.

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Amy Mayhew, LVT



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 can be of any further assistance, please contact me.

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svsmobileimaging.com 309 - 737 - 3070



EDUCATIONAL TELECONSULTATION SERVICES™

1-800-838-4268 info@sonopath.com SonoPath.com

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

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