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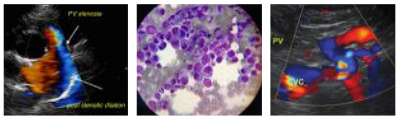

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PATIENT
Barley Mayer

SPECIES
Canine

BREED
Labrador

SEX
Female Intact

AGE
3.31.18

WEIGHT
77.5lbs

INTERPRETED BY
Maggie Machen Lamy, DVM, DACVIM (Cardiology)

HOSPITAL NAME
Madonna Veterinary Clinic

REFERRING VET
Dr. Brockett

INVOICE
31372

DATE
6.15.23

PRESENTING CLINICAL SIGNS

History: Presented on 05/31/2023 lame and lethargic. She was 2 weeks post whelping at that time. Grade 3/6 systolic murmur. Extremely high white count. Initial R/O was uterine infection with secondary sepsis. Abdominal ultrasound with ltd chest found severe metritis plus vegetative endocarditis. Patient seems to be doing well physically. Has good appetite. Still has 3/6 systolic murmur.
-Current medications: 6/1/23 - 340mg enrofloxacin IV once daily, 1200mg Ampicillin sulbactum IV q8h 10mg Pimobendan po q12, 72mg Lasix IV twice daily, Enalapril 20mg po twice daily. did this protocol for 48 hours. 6/3/23 - Amoxi/Clav 500mg po twice daily, Enrofloxacin 204mg po daily, pimobendan 10mg po twice daily, enalapril 20mg po twice daily, Lasix 75mg po daily- patient was not eating well on this protocol. bloodwork showed renal failure. Owner decided to stop pimobendan and enalapril. Patient has been eating since that point and seems happy.
-Sedation used: Not required to complete full diagnostic ultrasound.
-Pertinent previous ultrasound results (CVCA 6/1/23): Severe MV thickening with vegetative lesion associated with both surfaces. Moderate to severe MR, mild to moderate LAE, mild LVE. Remainder NSF. LV: 5.48/3.59, LA: 3.8, LA/AO: 1.6, FS: 34%.
-STAT: Declined at this time.
-Imaging performed by: Stephanie Warga RDCS, RVT.

ECHOCARDIOGRAM FINDINGS

2D, m-mode, color flow and doppler imaging is available. The mitral valve is highly abnormal with a large vegetative lesion spanning both the atrial and ventricular sides. The lesion can be seen prolapsing into the left atrial lumen. Decreased MR velocity. Mild LV dilation with adequate myocardial function. Mild to moderate left atrial enlargement. The tricuspid valve appears normal with no tricuspid regurgitation. Normal right atrial and ventricular diameter and morphology indicating no overt evidence of pulmonary arterial hypertension. 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. 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	5.4	NA	NM	1.5	38	68	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	160	1.4	0.8	35.2	3.6	5.6	3.4
*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)
**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)

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

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

Compared to the prior study, findings are similar. The mitral valve lesion is large and spans both surfaces of the valve. Moderate MR is resulting with mild to moderate LA and LV enlargement. The measurements provided by CVCA are similar to what is seen here without obvious progression or improvement, which is not surprising given the time frame.

Endocarditis (infection of the heart valve) is exceedingly rare; however, is more common in younger large breed dogs. A definitive diagnosis carries a poor prognosis, with only 50% surviving hospitalization and a long-term MST of 2 months. Aortic valve infections carry an even worse outcome, with an MST of weeks. The most common organisms are streptococci or staphylococcus for the MV (Bartonella for the AoV). Based upon these statistics and the current clinical/hematologic changes, recommended immediate hospitalization for broad spectrum IV antibiotic therapy (Unasyn and Baytril or Clavamox and Baytril if hospitalization is declined) and azithromycin for Bartonella. While blood cultures are certainly indicated, they may be negative since antimicrobial therapy is already on board. Additionally, thromboprophylaxis using Plavix is recommended (half the cases will have thromboembolic disease). Even with a normal LA dimension, this may change rapidly and cardiac supportive Pimobendan is also recommended. Antibiotic therapy should be administered IV for as long as possible (while hospitalized) and then PO for at least 6-8 weeks thereafter.

Recommendations should be continued as previously directed by CVCA. It is important to note that all cardiac medications are likely necessary lifelong, including Pimobendan, Lasix and Enalapril.

While it is certainly encouraging that the patient is reportedly doing well at home despite the grave clinical picture, **I would not recommend anesthetizing this case in the near future.** We must first determine if the patient will survive the acute insult and reassessment is recommended in 2 months. Consider recheck at CVCA, as visualizing the lesion comparatively will be of the upmost importance to determine if there has been improvement on antibiotic therapy.

Unfortunately, in addition to a poor prognosis with suspect endocarditis, if the patient survives there is a chance the damage to the valve is permanent and may lead to CHF in the future.

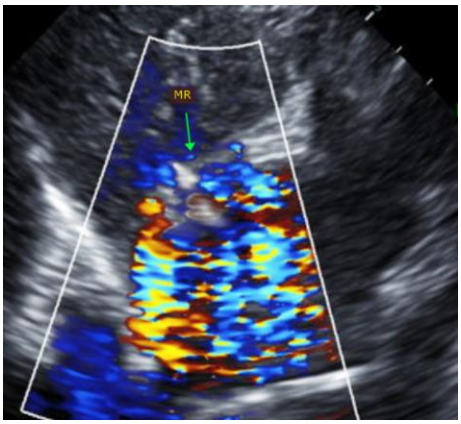
Omega fatty acid supplementation and mild salt restriction may be of some long-term benefit. Monitor for development of progressive labored breathing, exercise intolerance or collapse episodes in the future.

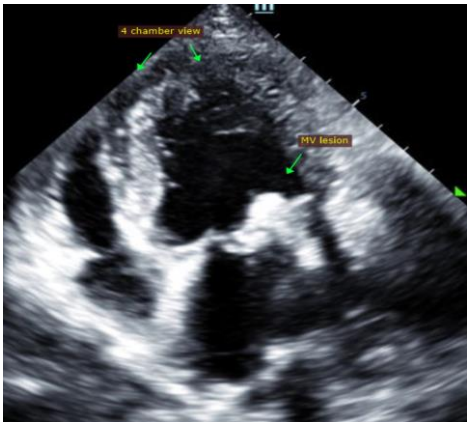
PLAN

Continue Lasix, Enalapril and Pimobendan as dictated by the CVCA report. If renal values showed a lack of tolerance, do not utilize an ACE-I; however, at least low dose Lasix should be continued. Continue antibiotic therapy for at least 8 weeks following the initial insult.

Reassessing an echocardiogram in 2 months (ideally at CVCA), for a more detailed comparison.

IMAGES





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.

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