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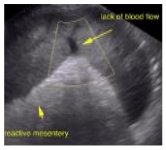
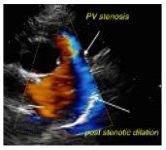
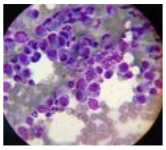
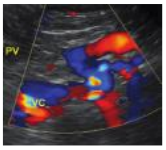

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1-800-838-4268 info@sonopath.com

PATIENT
Julietta Moyet

SPECIES
Canine

BREED
Maltese Mix

SEX
Female Spayed

AGE
13 years

WEIGHT
6.5lbs

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

IMAGING PERFORMED BY
G. Ferrer, DVM

HOSPITAL NAME
Paseos Veterinary Center

REFERRING VET
Dr. Torres

INVOICE
25558

DATE
7/27/22

PRESENTING CLINICAL SIGNS

History: Presented for referral for an echocardiogram evaluation. Congestive heart failure with grade 3/6 murmur. Diet: Hydrolyzed Protein
-Current medications: Theophylline 1/4-tab BID, Cytopoint (10mg), Pimobendan 1mg AM, 1/2mg PM, Coenzyme Q10 1 cap SID.
-Abnormal PE/Chem/CBC/UA Results: PE: Grade 4/ 6 systolic HM CBC: WNL CHEM: BUN 59 (7-25 mg/dL) CREA 1.6 (0.3-1.4 mg/dL).

ECHOCARDIOGRAM FINDINGS

2D, m-mode, color flow and doppler imaging is available. Diffuse thickening of mitral valve leaflets with significant prolapse into the left atrial lumen. Severe eccentric mitral regurgitation with severe left atrial dilation. Normal MR velocity. Mild LV dilation with hyperdynamic myocardial function. The tricuspid valve appears mildly thickened with mild TR. Mild right heart enlargement suggests early pulmonary hypertension. The pulmonic valve is normal in morphology and mobility. The aortic valve is mildly thickened. Normal aortic and pulmonic outflow velocities with laminar flow. Trivial AI and PI. Scant pericardial effusion. No 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	NM	NM	2.6	68	94	0.18
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	200	1.4	1.0	2.9	2.6	3.0	1.0
*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

The cause of the murmur is chronic degenerative valve disease causing severe mitral and mild tricuspid regurgitation. Severe left atrial enlargement indicates the risk for spontaneous congestive heart failure is elevated. Early pulmonary hypertension is noted, which is likely secondary to chronic LA pressure elevation. The aortic valve is thickened, and a baseline blood pressure is recommended. No additional issues are identified.

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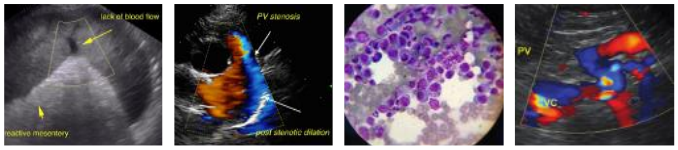

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In light of the history and severity of disease on echocardiogram, there is concern for early congestive heart failure (**reflected in pericardial effusion),** and medications are warranted lifelong as below. The history also notes congestive heart failure, yet diuretic therapy is not being utilized at this time and should be initiated ASAP. It is concerning that the renal values are elevated prior to therapy suggesting underlying CKD; however, we must attempt to stabilize the situation. Theophylline can be used if needed for breathing comfort; however, the patient's heart rate is quite high and this stimulant may be contributing to tachycardia. Consider discontinue and assess response to additional medications.

Monitoring of sleeping respiratory rates will be paramount to screen for congestive heart failure at home. Cough suppression to improve QOL can also be considered (hydrocodone, 0.2-0.4mg/kg up to q4-6h PRN) for any residual mechanical cough in the face of normal sleeping respiratory rates. The average survival time of canine patients with active pulmonary edema is 8-9 months on medications, however they generally are able to maintain a good quality of life for that period. Patient will always be at risk for recurrent CHF, development of arrhythmias/LA tear, syncope and/or sudden death in the future.

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

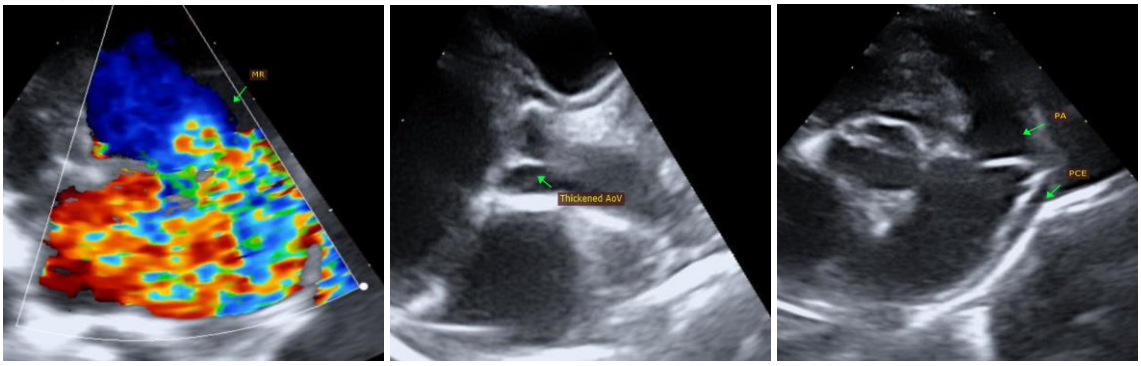
PLAN

Baseline BP recommended. Administer Pimobendan 0.3mg/kg PO q12h. Administer low dose Furosemide 1mg/kg PO q12h. Consider discontinue Theophylline. Utilize Hydrocodone or alternative cough suppression if needed.

Monitor SRRs at home. Monitor renal values and BP in 10-14 days, then every 3-4 months while on diuretics. Do not utilize ACEI due to azotemia. Consider hydrocodone if needed for QOL.

Recommend conservative monitoring with a recheck echocardiogram in 6 months, sooner if any development of associated clinical signs occurs in the interim.

IMAGES



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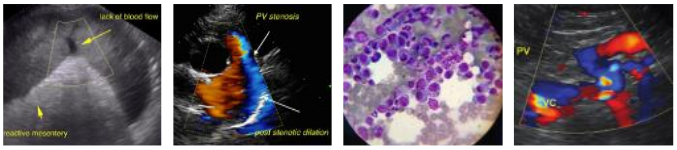

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The information and recommendations provided are based on the images presented by the referring veterinarian. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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)
info@sonopath.com