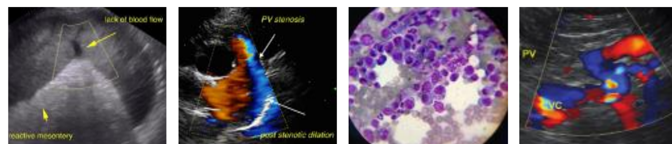

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1-800-838-4268 info@sonopath.com

PATIENT
Pooshito Rodriguez Malave

SPECIES
Canine

BREED
Terrier Mix

SEX
Male Neutered

AGE
12 years

WEIGHT
14.8lbs

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

IMAGING PERFORMED BY
Gabriel Ferrer, DVM

HOSPITAL NAME
Paseos Veterinary Cetner

REFERRING VET
Dr. Ferrer

INVOICE
21052

DATE
9/15/21

PRESENTING CLINICAL SIGNS

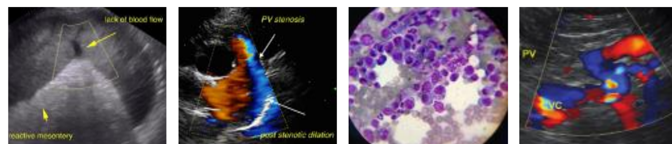
History: Presented for evaluation of coughing with some hacking (patient wakes up at night a lot to cough), syncope episodes and feels congested. Pt has history of heart murmur. Was seen previous for possible CHF in January/Feb of 2021.
-Radiographs: Showed cardiomegaly with elevated Carina. Previous veterinarian tried nebulization for congestions and did not improve.
-Current medications: Patient is currently taking: Enalapril 5mg: 1/2 SID, Vetmedin 2.5 mg: 1/2 BID, Furosemide 20mg 1/2 BID (3mg/kg/day), Spironolactone 25mg: 1/2 BID.
-Abnormal PE/Chem/CBC/UA Results: P: 150 Resp: 40 CRT 2.5 secs Systolic Heart murmur grade 5/6 on left and right side. Lungs were raspy but no obvious crackles. Very sensitive on tracheal palpation with coughing. Blood pressure: 201/141 mean 161 190/101 mean 145 201/156 mean 174.

ECHOCARDIOGRAM FINDINGS

2D, m-mode, color flow and doppler imaging is available. Diffuse nodular thickening of mitral valve. Prolapse into the left atrial lumen with lack of coaptation in systole. Severe eccentric mitral regurgitation with marked left atrial enlargement. MR velocity is normal. Mild LV dilation with hyperdynamic function. The tricuspid valve appears mildly thickened with mild tricuspid regurgitation. The right heart is mildly dilated. The pulmonic and aortic valves appear normal in appearance and mobility. Normal pulmonic and aortic outflow velocities. Mild MPA and branch dilation. No aortic insufficiency noted. Trace pulmonic insufficiency noted. No pericardial or pleural effusion seen. No obvious cardiac tumors.

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	4.3	NA	NM	2.6	60	94	0.16
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	134	0.7	1.0	6.7	3.0	3.9	2.2
*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				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)
Adapted from June Boon, Veterinary Echocardiography, 1998				20	2.02 (1.9)	4.14 (2.2)	2.80 (2.0)
Rishniw M and Hollis NE, J Vet Intern Med 2000; 14:429-435				25	2.18 (2.4)	4.48 (2.9)	3.10 (2.5)
Hansson et al, Vet Rad and Ultrasound 2002				30	2.33 (3.3)	4.83 (3.9)	3.39 (3.4)
Bonagura et al. Echocardiography: principles of interpretation, Vet Clin North Am 15:1177, 1995				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)



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INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

Chronic degenerative valve disease causing severe mitral and mild tricuspid regurgitation. Significant 4 chamber dilation indicates there is an elevated risk for spontaneous congestive heart failure. At least moderate pulmonary hypertension is suspected, which is likely secondary to chronic LA pressure elevation; however, primary respiratory disease is also suspected in a predisposed breed. No additional issues are identified.

Syncope and coughing in this patient are suspected to be cardiogenic in origin. Possible causes of syncope include poor forward blood flow leading to hypoxia, early CHF, pulmonary hypertension (moderate in this case), an arrhythmia and/or blood pressure swings, etc. **A combination of pulmonary hypertension and severe MR/poor cardiac output is suspected**. Should the episodes persist despite the medication changes below (including addition of Sildenafil, further evaluation may be indicated. Additionally, Hydrocodone is strongly recommended given the description of the cough with tracheal palpation. Long term prognosis is guarded to poor, however most dogs are able to maintain a good QOL on medications for an average of 8-12 months. Patient will always be at risk for recurrent CHF, development of arrhythmias/LA tear, syncope, and/or sudden death in the future.

Monitoring of sleeping respiratory rates will be paramount to screen for congestive heart failure at home. Omega fatty acid supplementation and mild salt restriction may also be of some long-term benefit. Monitor for development of a cough, labored breathing, exercise intolerance or worsening collapse episodes in the future.

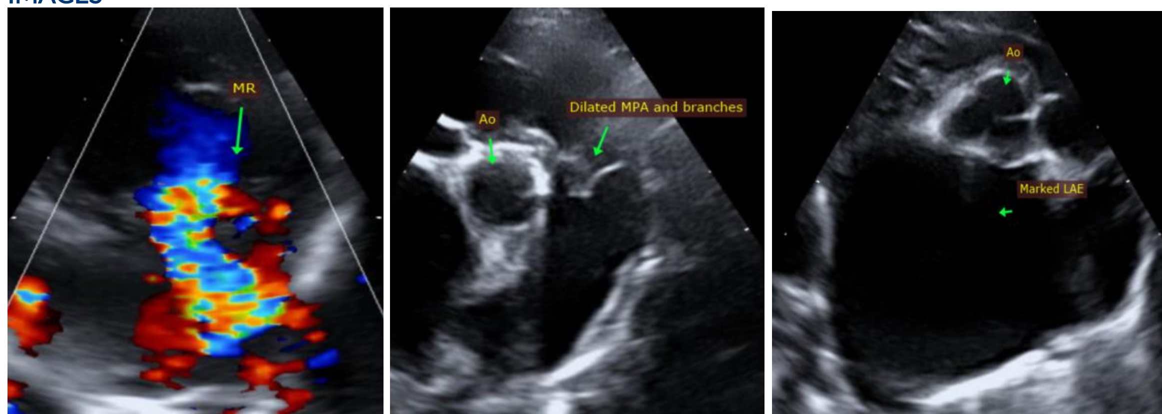
PLAN

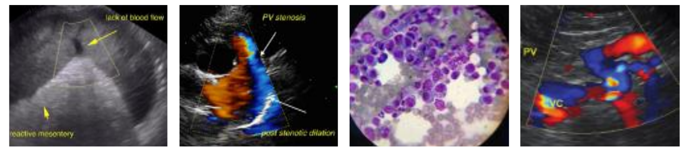
Continue Furosemide and Spironolactone as prescribed. Increase Enalapril to 2.5mg PO q12h. Increase Pimobendan to 2.5mg PO q12h. Institute Sildenafil 1-2mg/kg PO q12h. Highly recommend Hydrocodone with homatropine, 0.2 – 0.4 mg/kg PO up to q4-6 hours PRN for cough (available in 5/1.5mg tablets or 5mg/5ml solution).

Recheck renal panel and BP every 3-4 months. If episodes persists despite above therapy, consider further evaluation as discussed including an ECG.

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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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