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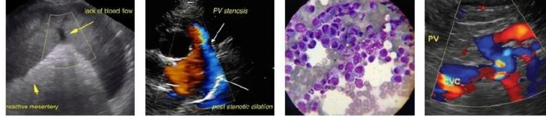


IMAGING PERFORMED BY
pawsonography@gmail.com 530-786-8340

PATIENT
Shy Hill

SPECIES
Canine

BREED
Chihuahua Mix

SEX
Female Spayed

AGE
7 years

WEIGHT
16lbs

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

IMAGING PERFORMED BY
Loetitia St-Jacques, LVT/RVT

HOSPITAL NAME
Valley Veterinary Clinic

REFERRING VET
Dr. Plateman

INVOICE
21342

DATE
10/4/21

PRESENTING CLINICAL SIGNS

History: Presented 9/22/21 for lethargy, not willing to walk, and wobbly. Heart murmur, grade 6/6 noted on exam.
-Pertinent abnormal lab results; Elevated ALK phos and platelets, remainder WNL.

RADIOGRAPHIC FINDINGS *NOTE: Images submitted for supplemental cardiac information only.

Cardiomegaly. No obvious evidence of CHF.

ELECTROCARDIOGRAPHIC FINDINGS

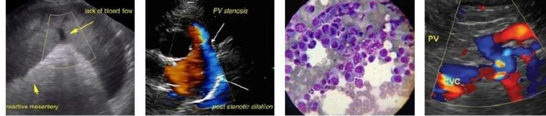
A six lead ECG is available at 50mm/s; 10mm/mV. The average heart rate is 180bpm (range 66-200bpm). The rhythm is sinus in origin, with a p for every QRS complex and vice versa. The P wave morphology is positive with a normal dimension. Normal PR. The QRS is inverted. MEA is shifted right. No ectopic beats, pauses or dysrhythmias observed.
ECG diagnosis: Normal sinus rhythm. Right axis deviation.

ECHOCARDIOGRAM FINDINGS

2D, m-mode, color flow and doppler imaging is available. Diffuse thickening of mitral valve leaflets (anterior>posterior) with significant prolapse into the left atrial lumen. Moderate to severe eccentric mitral regurgitation with moderate left atrial dilation. Normal MR velocity. Mildly increased LV diameter with hyperdynamic myocardial function. The tricuspid valve appears mildly thickened with septal prolapse and mild tricuspid regurgitation. Velocity consistent with mild to moderate pulmonary hypertension. Normal right atrial and ventricular diameter. The pulmonic and aortic valves are normal in morphology and mobility. Normal pulmonic and aortic outflow velocities. No aortic and trace pulmonic insufficiency. No pericardial or pleural effusion noted. No cardiac tumors observed.

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	3.5	NM	1.76	58	89	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	1.3	0.8	7.3	2.3	3.4	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)
**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 moderate to severe mitral and mild tricuspid regurgitation. Moderate left atrial enlargement indicates there is relatively low risk for imminent complication, however risk for progression to spontaneous congestive heart failure in the future is elevated. Mild to moderate pulmonary hypertension is noted which should be monitored going forward. No additional issues are identified. The ECG is unremarkable with a normal sinus rhythm.

Given the risk for progression and results of the EPIC trial, Pimobendan is indicated in this patient as below. Assessment of progression in the future will help predict long term outcome, however prognosis is guarded at this stage (B2).

The presenting clinical signs are unlikely to be related to structural cardiac changes. Syncope by definition is brief in nature with rapid recovery and is typically exertional in origin when cardiogenic. No respiratory changes are noted on exam; however, there is suspicion for underlying airway disease in this patient which should be reassessed should any respiratory changes be noted going forward. A baseline blood pressure is recommended.

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

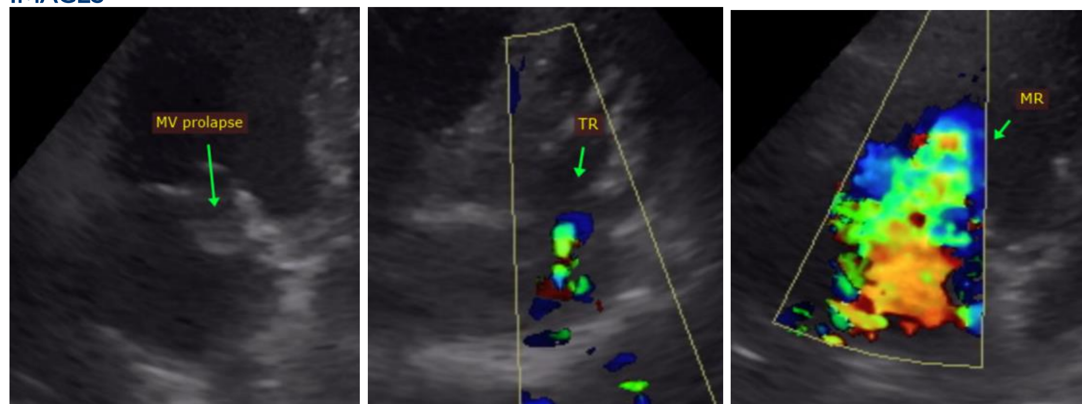
Once on the medication for 3-5 days, anesthetic risk is considered mildly elevated. Cardiac protective drug choices (opioid/benzodiazepine premedication, Propofol or alfaxalone induction, iso or sevo gas) are recommended. Monitor for arrhythmias, hypotension, and hypoxia both intra and post-operatively and intervene as necessary. Judicious IV fluid rates are recommended to avoid fluid overload. Avoid heart rate stimulating drugs such as atropine unless clinically **indicated.**

PLAN

Baseline BP recommended. Institute heart muscle support Pimobendan 0.25-0.3mg/kg PO q12h. Should systemic issues persist, further evaluation is advised.

Recommend monitor for progression with a recheck echocardiogram in 6 months, sooner if any development of clinical signs.

IMAGES



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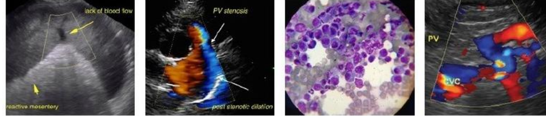

PAWS
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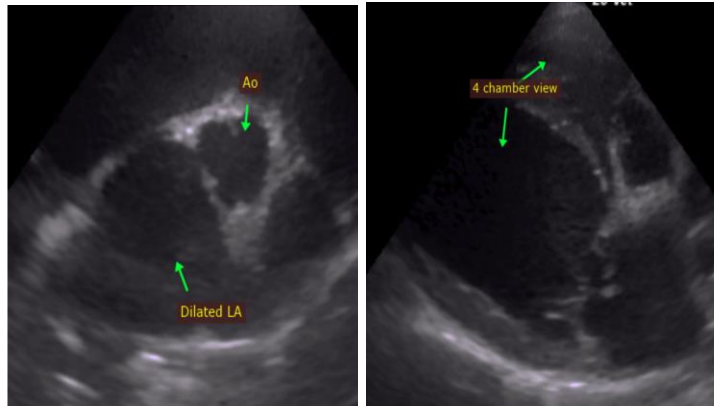

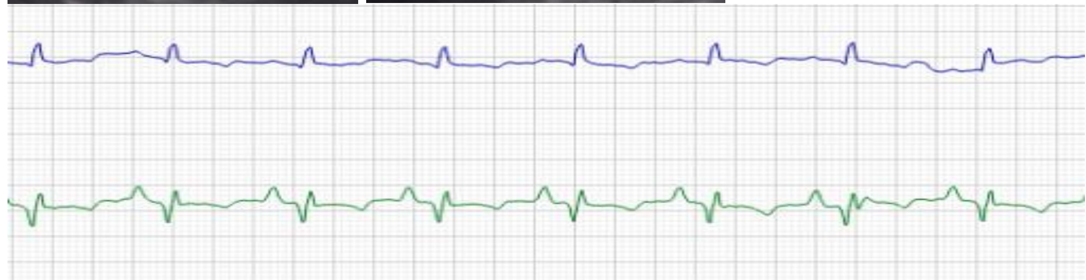

The information and recommendations provided are based on the images presented by the referring veterinarian. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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