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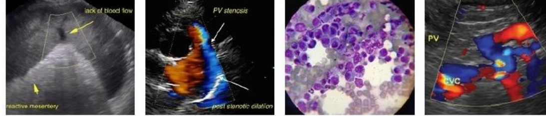


IMAGING PERFORMED BY
pawsonography@gmail.com 530-786-8340

PATIENT
Rock Star Kadenacy

SPECIES
Canine

BREED
Chihuahua Mix

SEX
Male Neutered

AGE
12 years

WEIGHT
22lbs

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

IMAGING PERFORMED BY
Loetitia St-Jacques, LVT/RVT

HOSPITAL NAME
Mountain View Animal Hospital

REFERRING VET
Dr. Kalvoda

INVOICE
30377

DATE
4/20/23

PRESENTING CLINICAL SIGNS

History: Recheck echo. Recent cough, worse with activity. Increased respiratory effort and a distended abdomen. BP: 200/210/200mmHg. Cyanotic during exam.
-Current medications: Prozinc 5 units BID, Cerenia 24 mg SID, cough tablets 102-tab BID, Nat Path Lou Jun Zo Tang powder 1/2 tsp BID
-Abnormal PE/Chem/CBC/UA Results: RBC 9.05. (5.65-8.87) Hemoglobin 22.4. (13.1-20.5) Reticulocytes 117.7. (10-110) Platelets 594 (148-484) Glucose 236. (70-143) BUN 42 (7-27) TP 10.4 (5.2-8.2) Albumin 4.3 (2.2-3.9) Globulin 6.1 (2.5-4.5) ALT 236 (10-125) ALP 1633 (23-212) Total Bilirubin 3.3 Cholesterol 330 (110-320).
-Pertinent previous echo findings (12/2022 MML): Mild MR, mild LAE, no LVE, mild RHE, mild TR, mild PAH: 3.4m/s. LA: 2.3, LV; 2.1.

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

Minimal cardiomegaly. No obvious evidence of CHF.

ELECTROCARDIOGRAPHIC FINDINGS

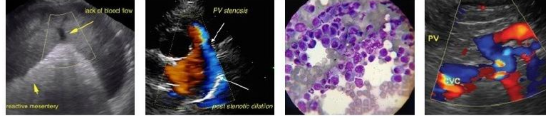
A six lead ECG is available at 50mm/s; 10mm/mV. The average heart rate is 125bpm (range 100-150bpm). The rhythm is sinus in origin, with a p for every QRS complex and vice versa. The P wave morphology is positive with a normal dimension. Normal PR. The QRS morphology is positive with normal dimension. MEA is normal. Tall R waves. No ectopic beats, pauses or dysrhythmias observed.
ECG diagnosis: Normal sinus rhythm with respiratory variation. Tall R waves.

ECHOCARDIOGRAM FINDINGS

2D, m-mode, color flow and doppler imaging is available. Diffuse thickening of mitral valve leaflets with minimal prolapse into the left atrial lumen. Trace mitral regurgitation with minimal left atrial dilation. Normal LV diameter with adequate myocardial function. The LV myocardium is somewhat irregular with hyperechoic regions along the free wall. The tricuspid valve appears thickened with septal prolapse and mild tricuspid regurgitation. Velocity consistent with early pulmonary hypertension. Mild right heart prominence. The pulmonic and aortic valves are normal in morphology and mobility. Normal pulmonic and aortic outflow velocities with laminar flow. Mild aortic and no 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	NM	3.0	NM	1.4	58	92	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	2.0	1.2	10.0	2.3	2.6	1.1
*Normal chamber parameters expressed as a mean value (SD)				3	1.27 (5.3)	2.46 (2.46)	1.36 (5.5)



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BODY WEIGHT DEPENDENT PARAMETERS

**Note: All measurements based upon multi-modal images and methods. An average value is reported.*

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

5	1.40 (4.5)	2.74 (5.2)	1.60 (4.7)
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

Chronic degenerative valve disease persists with overall stability. Trace mitral and tricuspid regurgitation are unchanged with stable right and left heart dimensions. The LV myocardium has a somewhat irregular appearance; however, a normal variant is suspected. Follow up is recommended. Finally, mild pulmonary hypertension appears stable, and no additional issues are identified. The ECG is unremarkable with a normal sinus rhythm.

Given these findings, no cardiac medications are indicated. Cyanosis and abnormal breathing is more likely due to respiratory disease in this patient with mild pulmonary hypertension. Further evaluation through chest radiographs is strongly recommended for a pulmonary evaluation. Continued assessment of progression in the future will help predict long term prognosis, which is highly variable at this stage. Omega fatty acid supplementation and mild salt restriction may be of some long-term benefit. Monitor for development of a cough, labored breathing, exercise intolerance or collapse episodes.

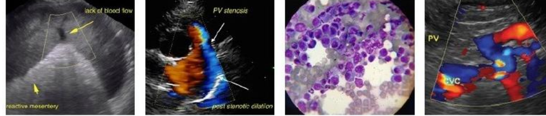
The reported blood pressure is elevated which should be further evaluated, particularly in light of development of aortic insufficiency. If the readings are thought to be accurate and reflective of true pathologic hypertension, treatment with Amlodipine is warranted. If there is any question, consider addressing the systemic issues and reassessing the BP in 1-2 months. Additionally, if deemed accurate, screening for predisposing underlying causes of SHT is recommended (Cushings, PLN, adrenal tumor, etc.), as primary disease is relatively uncommon and a rule out diagnosis.

Anesthetic risk is considered mild if needed. Cardiac protective drug choices (opioid/benzodiazepine premedication, propofol or alfaxalone induction, isoflurane gas) are recommended. Pre-oxygenate for 5-10 minutes prior to induction. Monitor for arrhythmias, hypotension, and hypoxia both intra and post-operatively and intervene as necessary. Mild IV fluid restriction is recommended to avoid fluid overload. Avoid heart rate stimulating drugs such as atropine unless clinically indicated.

PLAN

No cardiac medications are indicated. Further respiratory evaluation through chest radiographs is recommended. Consider treat versus reassess BP as discussed. An IM consultation may be beneficial.

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



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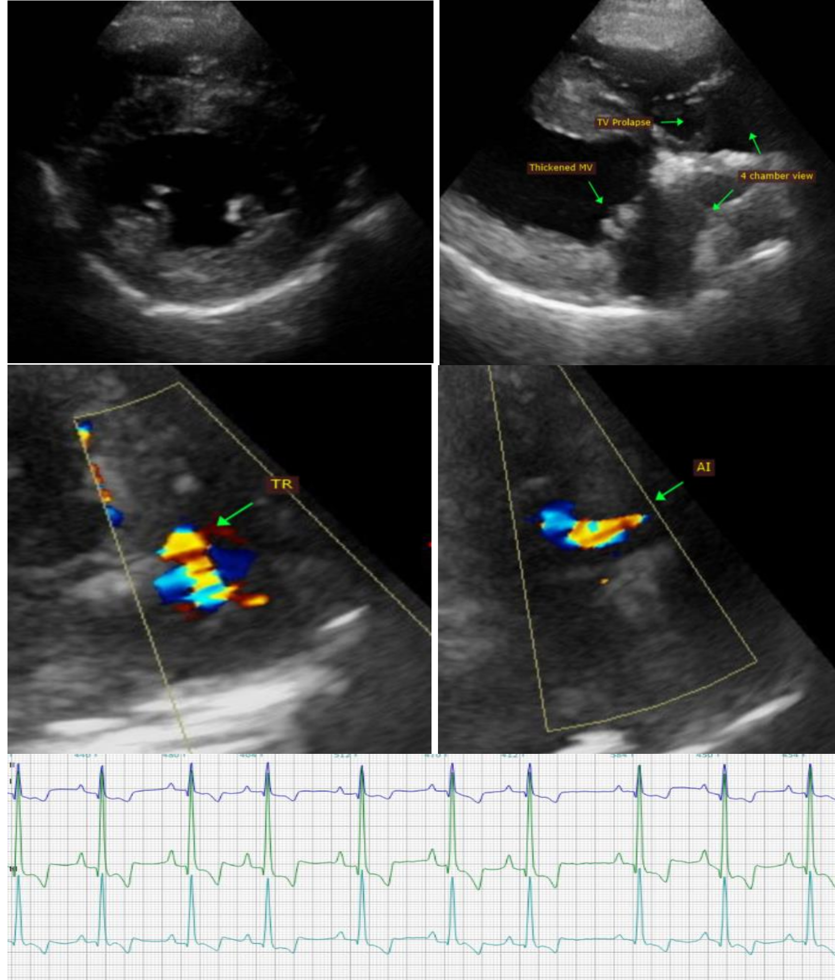
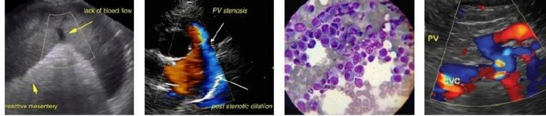
IMAGES



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.

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



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