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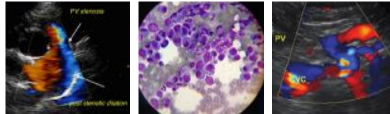

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PATIENT
Dixie Montgomery

SPECIES
Canine

BREED
Coonhound Mix

SEX
Female Spayed

AGE
2.1.08

WEIGHT
68lbs

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

HOSPITAL NAME
Chadwell Animal Hospital

REFERRING VET
Dr. Gold

INVOICE
28916

DATE
2.10.23

PRESENTING CLINICAL SIGNS

History: Recheck echo, Assess prior to anesthesia.
-Current medications: Amlodipine 2.5mg BID, Reglan 10mg BID.
-Blood pressure: 184/125, 184/123, 186/131 and 183/122mmHg.
-Sedation used: Not required to complete full diagnostic ultrasound.
-Pertinent previous ultrasound results (3/202 MML): Mild to moderate MR, no LA or LVE, trace TR: 2.3m/s, dilated aortic root. LA: 2.9, LV: 3.7. SHT noted at that time: 200mmHg.
-STAT: Declined.
-Imaging performed by: Stephanie Warga RDCS, RVT.

ELECTROCARDIOGRAPHIC FINDINGS

A six lead ECG is available at both 25 and 50mm/s; 2mm/mV. The average heart rate is 110bpm (range 75-13bpm). 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 shifted left. VPCs are seen throughout. The majority are singles with an LBBB morphology. A single couplet is observed, instantaneous heart rate: 214bpm. No supraventricular premature beats, pauses or other dysrhythmias observed.
ECG diagnosis: Normal sinus rhythm with single and rare couplet VPCs.

ECHOCARDIOGRAM FINDINGS

2D, m-mode, color flow and doppler imaging is available. Diffuse thickening of mitral valve leaflets with no prolapse into the left atrial lumen. Mild to moderate eccentric mitral regurgitation with no left atrial dilation. Normal MR velocity. Decreased LV diameter with adequate myocardial function. Mild LV hypertrophy. The tricuspid valve appears normal with trace tricuspid regurgitation. Normal velocity. 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. The aortic root and ascending segment are mildly dilated. Normal pulmonic and aortic outflow velocities with laminar flow. Trace 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	6.2	2.5	NM	1.0	43	76	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	120	1.8	0.8	30.8	2.9	3.2	1.8
*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)

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

Compared to the prior study, the structural findings appear similar. Mild to moderate mitral and trace tricuspid regurgitation are unchanged without significant left or right heart enlargement. On the contrary, the LV chamber dimension is decreased comparatively, which may suggest volume depletion. Baseline lab work is strongly recommended. Additionally, mild LV hypertrophy has developed, likely secondary to poorly controlled systemic hypertension. No additional issues are identified.

Given these findings, more aggressive vasodilation may be warranted depending on chronic readings. Consider addition of an ACE-I and/or additional options, depending on systemic evaluation, proteinuria, etc. Consider consultation with an IM Specialist if the hypertension appears refractory.

The ECG does show frequent single VPCs. While single VPCs are typically of low concern, the frequency is quite high, and some polymorphism is noted with a single couplet. In light of poorly controlled systemic hypertension, this alone can lead to development of arrythmias. Reassessment is advised once the blood pressure is stabilized. If a persistent arrythmia is noted, a holter monitor should be considered as the next step. Patient may have risk for acute collapse and sudden death going forward and this should be expressed to the owner.

Given the structural changes seen here, no cardiac specific medications are clearly indicated. Assessment of progression in the future will help predict long term prognosis, which is highly variable at this stage (B1). 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.

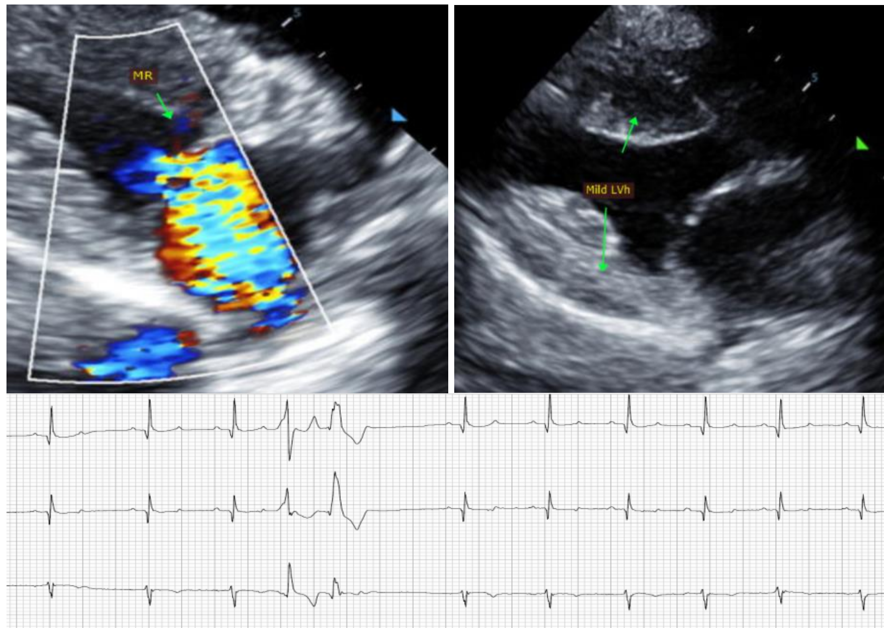
Ideally further BP control and arrhythmia control should be obtained prior to proceeding with anesthesia. With VPCs, anesthetic risk is considered moderately elevated. Avoid ketamine, telazol, Dexdomitor (or other alpha-2 agonists) and acepromazine. Recommend having lidocaine CRI available for use in the event of worsening ventricular arrhythmias under anesthesia (CRI 50—75mcg/kg/min).

PLAN

Further vasodilator therapy is recommended based upon systemic evaluation, IM consultation, etc. Once the BP is consistent <160mmHg, reassess the ECG. If arrythmias persist, consider a holter monitor at that time to determine if treatment is warranted.

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

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
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