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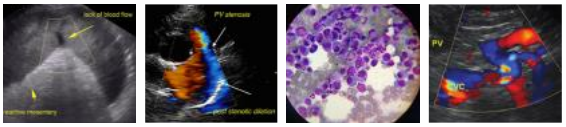


ANIMAL SOUNDS NW
MOBILE VETERINARY ULTRASOUND
IMAGING PERFORMED BY
AnimalSoundsNW.com 541-357-9423

PATIENT
SRI Mathews

SPECIES
Canine

BREED
Dachshund

SEX
FS

AGE
16 years

WEIGHT
5.7kgs

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

IMAGING PERFORMED BY
Jenna Walsh, SDEP Clinical Sonographer

HOSPITAL NAME
Wilvet of Salem

REFERRING VET
Dr. Rando

INVOICE
29067

DATE
2/17/23

PRESENTING CLINICAL SIGNS

History: Recheck echo. Today, O noticed p's respiratory rate was increased and P was hacking. P does have a history of seizures that started about two years ago but then stopped after they switched her oral heart medication to topical. P just started having seizures again since last week P had 2-3 seizures in a span of 2 days, The seizures then came back this week. P has been eating and drinking normally, urinating normally but O does not remember the last time P defecated. Heart Rate and Respiratory Rates Presentation 130 bpm and 120brpm, post furosemide 120bpm and 36brpm
Blood Pressure Measurement: 208/140 (144)
Abnormal PE/Chem/CBC/UA Results: Chem17: creat 0.8, BUN 17, TP 6.9, ALT 305 (H), ALP > 2000 (H), GGT 18 (H) CBC: Hct 52.8, WBC 12.38, Eos 0.04 (L), plt 706 (H),
Pertinent previous echo findings (MML 10/2022): mod MR, mild LAE, mild/mod AI

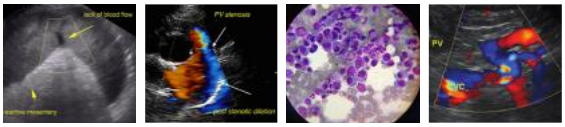
ECHOCARDIOGRAM FINDINGS

2D, m-mode, color flow and doppler imaging is available. Diffuse thickening of mitral valve leaflets with minimal prolapse into the left atrial lumen. Moderate eccentric mitral regurgitation with mild left atrial dilation. Elevated MR velocity. Normal LV diameter with adequate myocardial function. 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 valve is normal in morphology and mobility. The aortic valve is thickened. Normal pulmonic and mildly elevated aortic outflow velocities with laminar flow. Mild to moderate 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	6.8	2.7	1.1	1.4	47	80	0.24
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	110	2.9	0.5		2.6	3.0	1.5
*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)
				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)

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



	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 persists with stable disease. Moderate mitral regurgitation is unchanged with stable left heart dimensions. Lack of significant left atrial enlargement indicates the current risk for complication is low. The aortic leak is noted with mildly increased flow through the region, similar to previous. The blood pressure is now significantly elevated, and if this is a consistent finding vasodilator therapy should be instituted. No concurrent issues such as pulmonary hypertension are noted in this study.

Given these findings, the cough/dyspnea is unlikely to be cardiac in origin and primary respiratory causes should be considered. **Lasix can be discontinued. Baseline CXR are strongly recommended.** Consider further respiratory work up/treatment (hydrocodone, taper course of steroids, Enrofloxacin, TTW/BAL, etc). Chronic respiratory disease can lead to development of PAH over time, and monitoring for signs of significantly elevated pulmonary pressures is recommended (exertional dyspnea or syncope).

The reported blood pressure is elevated, and should be reassessed for persistence once this stressful event has resolved. Ideally obtain serial measurements in a controlled, low stress environment and continue until 3 consecutive readings plateau within 5mmHg of variability. If persistently >180mmHg despite a relatively calm demeanor, recommend institution of amlodipine to effect. 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.

In a dog without significant left atrial enlargement, no cardiac 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.

Anesthetic risk is considered mild if needed (pending HR evaluation). Pre-medicate with a vagolytic. 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.

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

IMAGES

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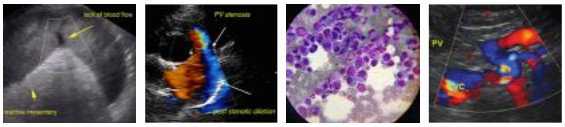

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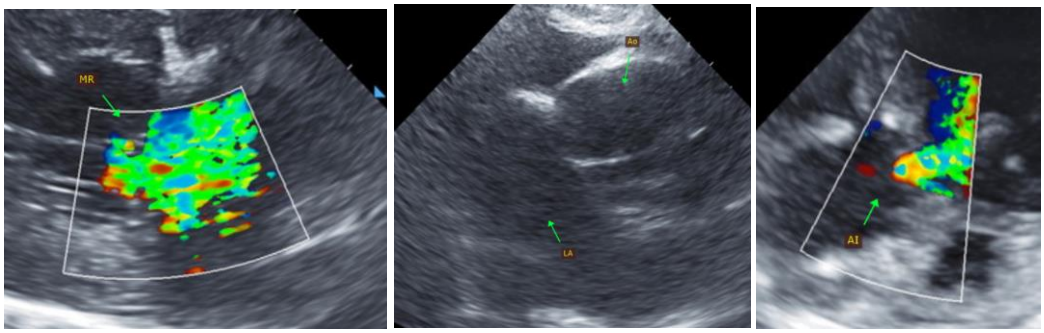

The information and recommendations provided are based on the images presented by the referring veterinarian. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

Thank you for this referral. 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