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Clinical Sonography & Telecytology
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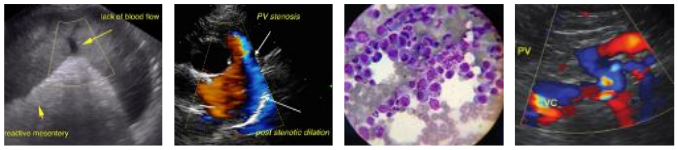

SonoPath.com
1-800-838-4268 info@sonopath.com

PATIENT
Winston Ragsdale

SPECIES
Canine

BREED
Dachshund

SEX
Male Neutered

AGE
12 years

WEIGHT
11.3lbs

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

IMAGING PERFORMED BY
Dana Alterman, RDCS, LVT

HOSPITAL NAME
Eubank Animal Clinic

REFERRING VET
Dr. Cole

INVOICE
28961

DATE
2/13/23

PRESENTING CLINICAL SIGNS

History: Grade 5/6 holosystolic murmur with gallop. Dyspnea. Concern for CHF. Pulmonary edema.
-Radiographs: Showed moderate generalized cardiomegaly.
-Current medications: Vetmedin, Enalapril, Furosemide and Prednisolone. Not on HW prevention.

ELECTROCARDIOGRAPHIC FINDINGS *Note: Single lead ECGs are evaluated as a rhythm strip. Morphology/MEA cannot be definitively commented on.

A single lead ECG is available; 50mm/s, 20mm/mV. The average heart rate is 120bpm (range 110-136bpm). The P and QRS are inverted, suggesting atypical device orientation. The rhythm is sinus in origin, with a p for every QRS complex and vice versa. No ectopic beats, pauses or other dysrhythmias observed.
ECG diagnosis: Normal sinus rhythm with respiratory variation.

ECHOCARDIOGRAM FINDINGS

2D, m-mode, color flow and doppler imaging is available. The mitral valve is severely diffusely thickened with mild prolapse into the left atrial lumen. There is severe eccentric mitral regurgitation present. The MR velocity is normal. There is severe left atrial enlargement. There is a region of dropout in the interatrial septum with suspect flow across (L-R); inconsistent; however, suspicion is high. There is mild left ventricular dilation indicative of volume overload. Left ventricular systolic function is hyperdynamic. There is normal systolic flow velocity across the aortic valve. The aortic valve appears trileaflet with normal mobility. No AI. The main pulmonary artery is mildly dilated. Normal pulmonic outflow velocity with laminar profile. No pulmonic insufficiency. Mild right atrial and right ventricular dilation. The tricuspid valve is thickened with mild to moderate tricuspid regurgitation. The tricuspid regurgitant velocity is consistent with moderate pulmonary hypertension. No pericardial/pleural effusion or cardiac masses are seen. No 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	nm	4.0	NM	2.4	53	85	0.2
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	0.9	0.7	5.1	3.0	3.2	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)
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)
				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)

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

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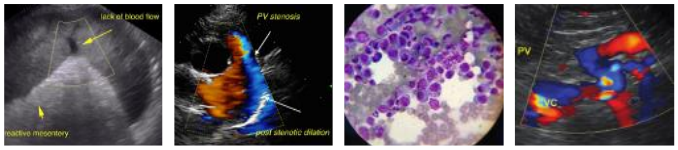

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INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

Chronic degenerative valve disease causing severe mitral and mild to moderate tricuspid regurgitation. Severe left atrial enlargement indicates the risk for spontaneous congestive heart failure is high. There is suspicion of a rupture in the interatrial septum, this may be leading to increased right heart pressures and may put the patient at risk for right-sided CHF. The finding is inconclusive although the suspicion is high. Regardless, continued cardiac support is recommended as below. No obvious indication for Sildenafil at this time given the clinical picture (likely PAH is secondary to increased flow and congestion rather than a primary pathology); however, if exertional syncope or ascites were to develop, I would not hesitate to add the medication. The ECG is unremarkable with a normal sinus rhythm.

Unfortunately with this degree of heart disease and congestion, the prognosis is guarded to poor with an average survival time of <1 year at this point. Most dogs are able to maintain a good quality of life for some time however with medications. Going forward risk will remain for recurrent right or left-sided CHF, collapse episodes and/or development of arrhythmias/sudden death in the future.

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 collapse episodes. Monitoring of sleeping breathing rates is recommended as the best way to screen for improvement/recurrent CHF at home.

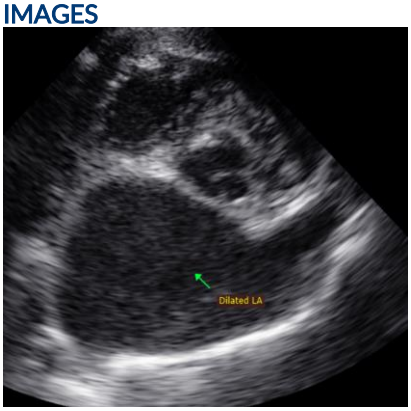
PLAN

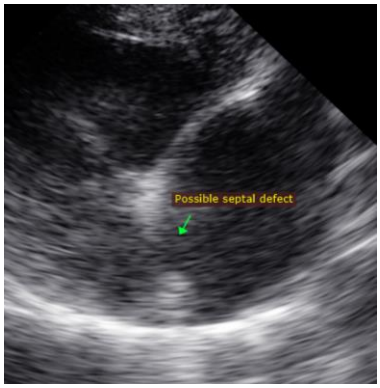
Institute furosemide 1-2mg/kg PO q8h for 5 days, then decrease to q12h if doing well. Institute spironolactone 1-2mg/kg PO q12h. Institute Pimobendan 0.3mg/kg PO q12h. If patient develops any syncope or refractory ascites in the future, consider Sildenafil 1-2mg/kg PO q12h. It is unclear why Prednisone is being administered and this should be reevaluated.

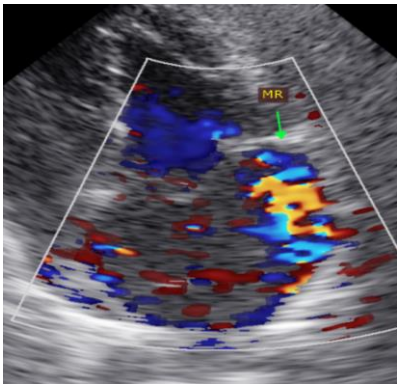
Recheck a kidney panel and BP in 10-14 days. If doing well and BP >130mmHg, institute ACEI 0.5mg/kg PO q12h.

A recheck echocardiogram and ECG is recommended in 4-6 months to screen for progression, sooner if clinical signs arise.

IMAGES







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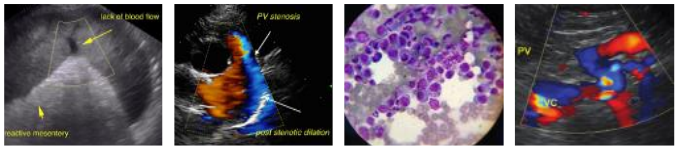

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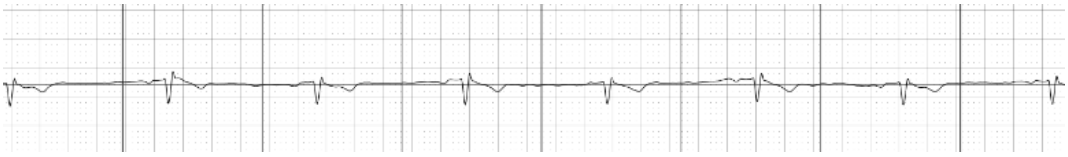

The information and recommendations provided are based on the images presented by the referring veterinarian. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

Thank you for this referral. 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