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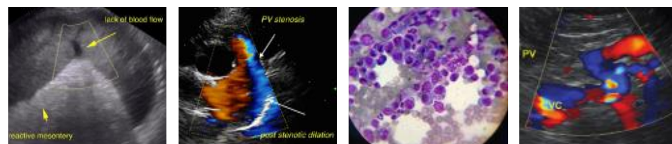
Clinical Sonography & Telecytology

EDUCATIONAL TELECONSULTATION SERVICES™



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

PATIENT
Lana Rodriguez Sanchez

SPECIES
Canine

BREED
Schnauzer

SEX
Female Spayed

AGE
10 years

WEIGHT
17.5lbs

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

IMAGING PERFORMED BY
G. Ferrer, DVM

HOSPITAL NAME
Paseos Veterinary Center

REFERRING VET
Dr. Ortiz

INVOICE
24333

DATE
5/23/22

PRESENTING CLINICAL SIGNS

History: Recheck echo. BW: WNL.
-Current medications: Spironolactone 25mg: 1 tablet in AM and 1/2 PM , Furosemide 20mg: 1 tablet BID, Enalapril 10mg: 1/2 tablet BID, Vetmedin 5mg: 1/2 tablet BID.
-Pertinent previous echo findings (12/2021 MML): Severe MR, marked LAE, mild LVE, mild RHE, moderate TR, mild PAH, PCE suspicious for a tear. LA: 3.8, LV: 4.3/2.5, FS: 42%, TR: 3.2m/s.

ECHOCARDIOGRAM FINDINGS

2D, m-mode, color flow and doppler imaging is available. The mitral valve is diffusely thickened with mild prolapse into the left atrial lumen. Lack of coaptation in systole. There is marked eccentric mitral regurgitation present. The MR velocity is decreased. There is marked left atrial enlargement. There is mild left ventricular dilation. Left ventricular systolic function is mild depressed. There is normal systolic flow velocity across the aortic valve. The aortic valve appears thickened with normal mobility. Normal aortic outflow velocity. Mild aortic insufficiency. The main pulmonary artery is mildly dilated. Moderate right atrial and right ventricular dilation. The tricuspid valve is thickened with septal prolapse and moderate tricuspid regurgitation. Mildly elevated TR velocity consistent with early pulmonary hypertension. No obvious pulmonic insufficiency. Small to moderate volume pericardial effusion. Suspicious hypoechoic lesion associated with the AV groove (2.3 x 1.6cm); however, this is an inconsistent finding. No obvious evidence of pleural effusion.

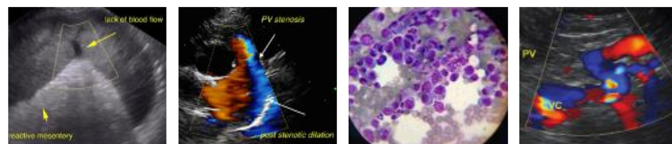
CARDIAC CHART

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	4.4	2.9	NM	>3.0	39	70	0.44
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	174	0.8	1.0	7.9	4.3	4.3	2.6
*Normal chamber parameters expressed as a mean value (SD)				3	1.27 (5.3)	2.46 (2.46)	1.36 (5.5)
				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)

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



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INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

Chronic degenerative valve disease is present with continued progression. Marked mitral and moderate tricuspid regurgitation are unchanged; however, the left heart is progressively enlarged. Pulmonary pressures are similar to previous with progressive right heart enlargement. Finally, a hypoechoic lesion is noted associated with the external surface of the right heart. This is an inconsistent finding (i.e., not apparent in all images); however, follow up and monitoring is advised. It would be unusual to see cardiac neoplasia develop in addition to severe structural disease and my suspicion is this is a normal region simply highlighted by the presence of effusion. No additional structural issues are identified.

Interestingly, the amount of pericardial effusion is similar to the prior study without improvement on mediations. No symptoms are reported in the history; however, more aggressive Lasix therapy is recommended. This likely reflects right-sided CHF. Even without significant pulmonary hypertension, if the patient has any syncope or exertional dyspnea, consider a trial of Sildenafil given this persistent finding. No obvious additional medications are warranted.

Unfortunately, this patient is considered end-stage and the prognosis is poor to grave. It is encouraging that no clinical issues are reported at this time; however, there is high risk for decompensation, fulminant heart failure, development of arrhythmias and/or sudden death at any time.

Monitoring of sleeping breathing rates is recommended as the best way to screen for CHF at home. 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.

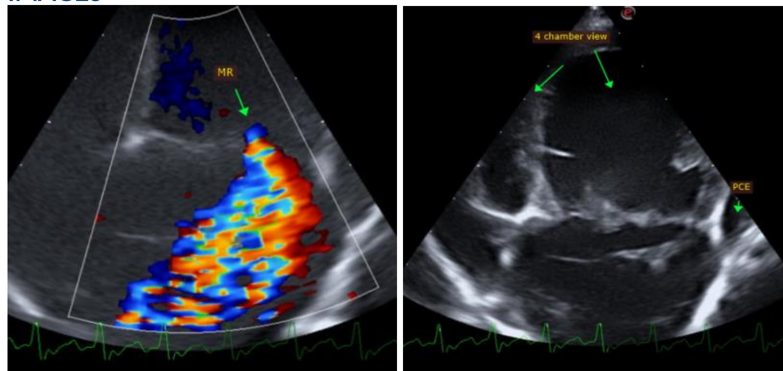
PLAN

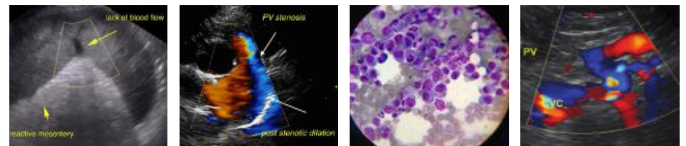
Continue Pimobendan, Enalapril and Spironolactone as prescribed. Increase Furosemide to 20mg PO q8h. If patient experiences any syncopal episodes in the future, a trial of Sildenafil is recommended: 1-2mg/kg PO q12h.

Monitor renal values and blood pressure every 3-4 months lifelong.

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

IMAGES





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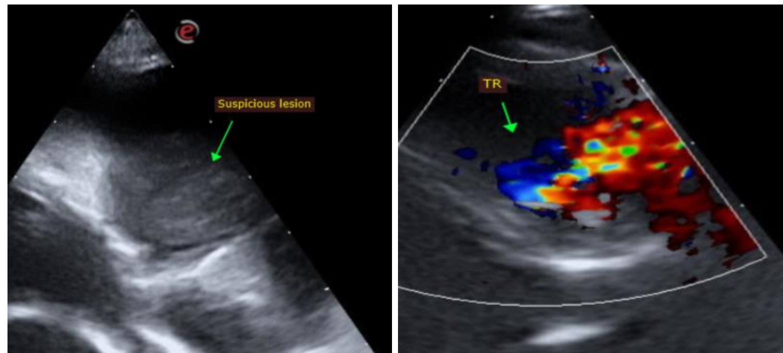

The information and recommendations provided are based on the images presented by the referring veterinarian. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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