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Clinical Sonography & Telecytology
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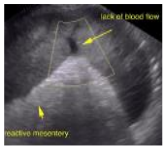
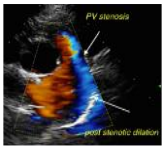
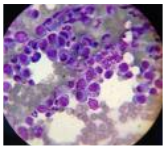
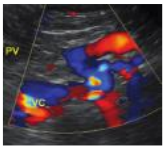

SonoPath.com
1-800-838-4268 info@sonopath.com

PATIENT
Lana Rodriguez

SPECIES
Canine

BREED
Minature Schnauzer

SEX
Female Spayed

AGE
10 years

WEIGHT
19.6lbs

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

IMAGING PERFORMED BY
G. Ferrer, DVM

HOSPITAL NAME
Paseos Veterinary Center

REFERRING VET
Dr. Ortiz

INVOICE
22281

DATE
12/6/21

PRESENTING CLINICAL SIGNS

History: Cardiomegaly on films. History of a heart murmur, grade 5/6. Recent abnormal breathing.
-Current medications: Vetmedin 5mg: 1/2 BID, Enalapril 10mg : 1/2 SID.
-Blood pressure: 141, 135mmhg.

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 severe 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. Mild 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 volume pericardial effusion with suspicion for a clot associated with the lateral wall (see below). No obvious evidence of pleural effusion. No cardiac masses are seen.

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	4.5	3.2	NM	2.8	42	74	0.4
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	160	0.8	0.7	8.9	3.8	4.3	2.5
*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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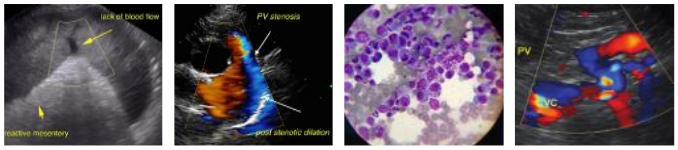

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INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

Chronic degenerative valve disease is present causing severe mitral and moderate tricuspid regurgitation. Marked left atrial dilation indicates the risk for spontaneous decompensation is elevated. Mild pulmonary hypertension is also present, likely secondary to chronic LA pressure elevation. No additional structural issues are identified.

As an imminent complicating factor there is also small volume pericardial effusion, with concern for a clot in the pericardial space. This finding is most consistent with a small left atrial tear (leading to hemorrhage into the pericardial space) A pericardial bleed or other hemorrhagic effusion is considered much less likely. A left atrial tear in addition to severity of disease seen here indicates an unstable patient and hospitalization should be considered.

Ideally, I would treat this patient with aggressive diuretic therapy and supportive care and monitor the amount of effusion in hopes of stabilizing the situation. If the amount of effusion increases or the patient further decompensates pericardial tap may become indicated.

Strict activity restriction is advised until the fluid is able to reabsorb, as there is a high risk for decompensation if the clot/healing is disrupted. If any syncope/decompensation occurs acutely in the future, then the amount should be reassessed.

Unfortunately, even if we are able to stabilize the situation, the long-term prognosis is poor to grave given the severity of disease and complexity of issues, with risk for recurrent spontaneous decompensation, fulminant heart failure, development of arrhythmias and/or sudden death in the future.

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

Baseline CXR recommended if not already performed in the acute phase (ie since the breathing changes). Consider hospitalization for supportive care as discussed, with close monitoring of volume of pericardial effusion/need for centesis, continuous ECG evaluation, blood pressure monitoring, diuretic therapy and O2 support if needed. Institute Pimobendan ASAP 0.3mg/kg PO q12h. Discontinue ACEI in the acute phase.

Once stabilized, discharge on the following: Institute furosemide 1-2mg/kg PO q12h. Institute spironolactone 1-2mg/kg PO q12h; Pimobendan 0.3mg/kg PO q12h.

A renal panel, ECG, blood pressure and (if possible) reassessment of pericardial effusion is recommended in 1-2 weeks following discharge, then every 3-4 months going forward. Once stable and doing well at home, institute ACEI 0.5mg/kg PO q12h.

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

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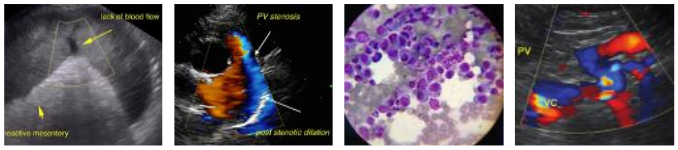

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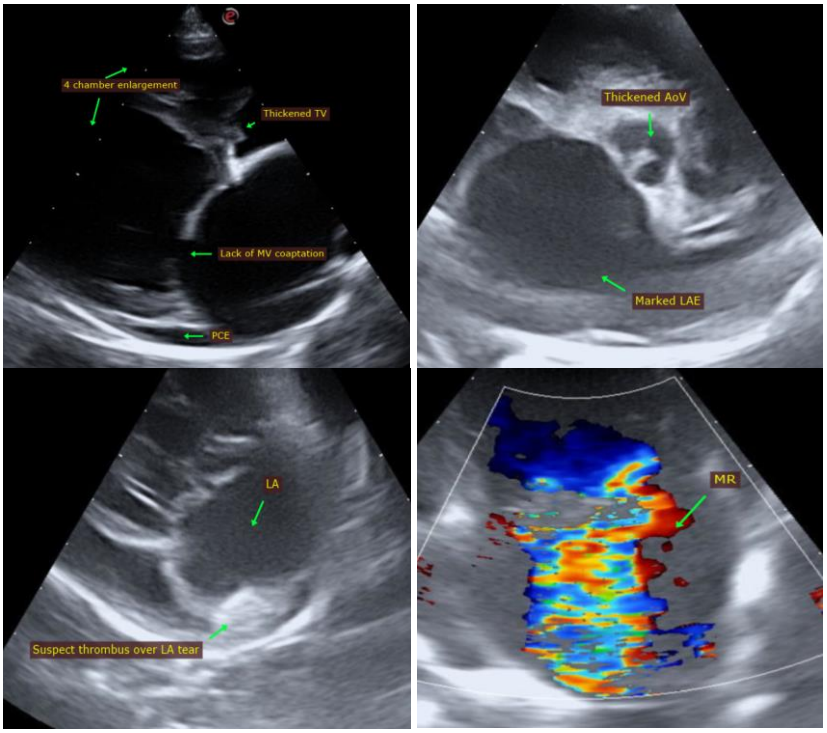
IMAGES



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