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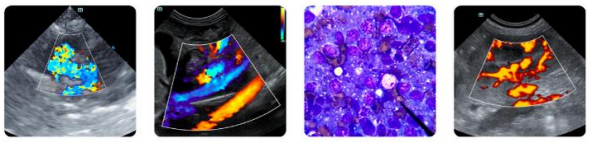


Clinical Sonography & Telecytology
Educational Teleconsultation Services™

PATIENT
Mai Ling Town

SPECIES
Canine

BREED
Shih Tzu

SEX
Female Spayed

AGE
12 years

WEIGHT
11.5lbs

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

IMAGING PERFORMED BY
Karen Ebersole, DVM, DABVP

HOSPITAL NAME
Scanvet

REFERRING VET
Dr. Moore

INVOICE
47508

DATE
4/9/26

PRESENTING CLINICAL SIGNS

History: Rapidly progressive, now grade 6/6 heart murmur. Presented yesterday after collapse during morning walk and long time to get back up. Started on Pimobendan. Collapsed again in afternoon and went to E clinic. Stayed overnight at E clinic for CHF. Lasix injections and Lasix PO (12.5mg BID). Increased to TID after echo. PE: HR 140, RR 42, crackles in lungs bilaterally. QAR. BP: 160 systolic.

RADIOGRAPHIC FINDINGS *NOTE: Images submitted for supplemental cardiac information only.

A single lateral film is included. Mild cardiomegaly with concern for CHF.

ELECTROCARDIOGRAPHIC FINDINGS

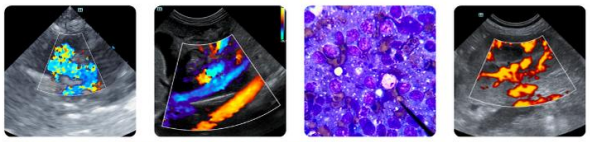
A six lead ECG is available at 25mm/s; 10mm/mV. The average heart rate is 150bpm. The rhythm is sinus in origin, with a p for every QRS complex and vice versa. The P wave morphology is positive with a normal dimension. Normal PR. The QRS morphology is positive with normal dimension. MEA is normal. No ectopic beats, pauses or dysrhythmias observed.
ECG diagnosis: Normal sinus rhythm.

ECHOCARDIOGRAM FINDINGS

2D, m-mode, color flow and doppler imaging is available. Diffuse thickening of the mitral valve leaflets (anterior>> posterior) with mild prolapse into the left atrial lumen. Ruptured chordae tendineae is suspected (see below). Moderate mitral regurgitation with mild to moderate left atrial enlargement. Normal LV diameter with adequate myocardial function. The tricuspid valve appears subjectively normal, with no tricuspid regurgitation. 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. Main pulmonary artery appears normal in diameter. Normal pulmonic and aortic outflow velocities. No pulmonic insufficiency. No aortic insufficiency. No pericardial or pleural effusion noted. No cardiac tumors visualized.

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	5.7	NA	1.5	1.6	33	62	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	140	1.3	0.7	5.2	1.2	2.8	1.9
*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 **Note: All measurements based upon multi-modal images and methods. An average value is reported.*				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)



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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	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)

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

The cause of the murmur is chronic degenerative valve disease causing moderate mitral regurgitation. A ruptured chordae tendineae is suspected. This pathology would explain the acute onset of collapse and CHF in the face of only mild cardiac enlargement. No additional issues are readily apparent. The ECG is unremarkable with a normal sinus rhythm.

Given these findings, this patient is suspected to be in congestive heart failure. Continued full lifelong cardiac support is recommended as below. If the patient is clinically unstable/tachypneic, continued hospitalization is recommended until stable on room air. If the patient does not respond to standard Lasix therapy, a Radiologist review of the films, serial studies, and/or coverage of respiratory infiltrates should also be considered.

Monitoring of sleeping respiratory rates will be paramount to screen for recurrent congestive heart failure at home in the future. The average survival time of canine patients with active pulmonary edema is 8-12 months on medications, however they generally are able to maintain a good quality of life for that period.

Monitor for development of a cough, labored breathing, exercise intolerance or collapse episodes in the future. Omega fatty acid supplementation (500-1000mg once to twice daily) and mild salt restriction may be of some long-term benefit.

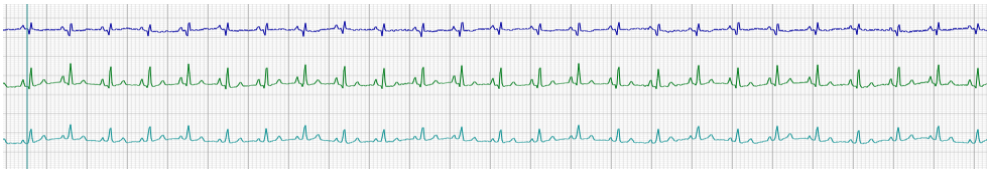
PLAN

Recommend baseline BP. If response is lackluster, consider repeat films with a Radiologist review and potentially coverage of respiratory pathogens. Continue Lasix CRI/O2 support/Pimobendan until stabilized. Discharge on the following oral medications: Lasix 1-2mg/kg PO q12h. Institute Spironolactone 1-2mg/kg PO q12h. Continue Pimobendan 0.25-0.3mg/kg PO q12h.

Monitor renal values and BP in 10-14 days, then every 3-4 months while on diuretics. If doing well and BP is >130mmHG, addition of ACEI 0.5mg/kg PO q12h is recommended at that time.

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

IMAGES



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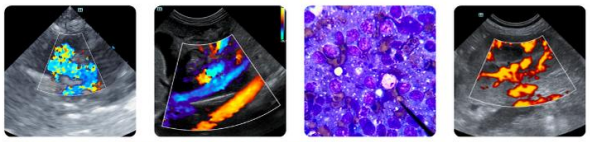

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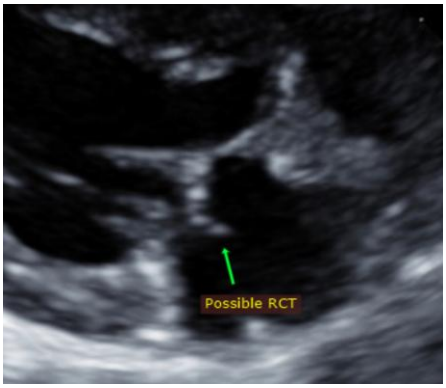

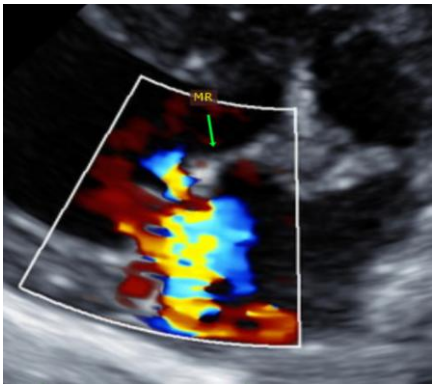

The information and recommendations provided are based on the images presented by the referring veterinarian. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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