



PATIENT PRESENTING CLINICAL SIGNS

Igloo Bermudez

SPECIES

Canine

BREED

Maltese

SEX

Neutered male

AGE

10 years

WEIGHT

17 lbs

INTERPRETED BY

Eric Lindquist, DMV
DABVP, Cert. IVUSS

IMAGING PERFORMED BY

Dr. Ferrer

HOSPITAL NAME

Paseos VC

REFERRING VET

Dr. Ferrer

INVOICE

95121

DATE

1/11/22

Presented for second opinion to evaluate coughing and increased respiratory rate (resting). Cough when excited and when drinking water. O noticed about 40 bpm when resting. Was seen at another veterinarian on June 2021 for possible collapsing trachea and was sent with Temaril P. Dec 4th 2021 was sent with antibiotics. And on Dec 11th a heart murmur was auscultated and was started Vetmedin (2mg BID) Abnormal PE/Chem/CBC/UA Results: Heartworm test: negative P: 120 R: panting Grade 4/6 systolic HM on left and right. Obese 8/9 Sensitive on tracheal palpation with coughing and hacking. Abnormal PE/Chem/CBC/UA Results: Radiographs were taken and report below: RADIOGRAPHIC DIAGNOSIS • Left sided cardiomegaly without evidence of decompensation • Suspect bronchial collapse • Obesity INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS There is evidence of left cardiomegaly – given the history of cardiac murmur, the most likely underlying cause is mitral valve insufficiency due to myxomatous mitral valve degeneration. There are no signs for decompensation. Complementing workup by a cardiac echo appears beneficial for evaluation of cardiac chamber size and function. Based on radiographic changes, cardiac medication appears indicated. Mechanical irritation of the bronchi by the enlarged left atrium might be a trigger for cough. The suspected bronchial collapse can be a source for cough as well. Accompanying tracheitis/bronchitis can exacerbate clinical signs. The obesity is a known predisposing factor for inflammatory lower airway disease, due to impaired pulmonary function and decreased bronchial clearance.

ULTRASONOGRAPHIC EXAMINATION OF THE HEART

The echocardiogram in this patient demonstrated enlarged **left atrial** size based on 3 different LA measurement methods. Chamber volumes and echogenicity were normal. The cranial and caudal **mitral** valve leaflets presented vegetative thickening consistent with endocardiosis. Prolapse of the anterior mitral valve leaflet was noted. Doppler indicated measurable insufficiency. The **left ventricle** presented thicknesses with linear contour and was not dilated nor restricted. The **myocardium** presented normal echogenicity without subjective evidence of significant fibrotic or ischemic disease. **Contractility** of the ventricular walls was adequate and in normal range for this patient evidenced by the fractional shortening measurement and subjective evaluation of the different regions of the myocardium. The **left ventricular outflow** tract demonstrated normal laminar flow and subjective structural integrity. The **right atrium** and auricle revealed normal size, structure and content. No evidence of masses was noted or chamber overload. **Tricuspid** valvular assessment demonstrated adequate linear morphology. The **right ventricle** was of normal size (1/3 diameter of LV), chordae structure, myocardial echogenicity and thickness. **Pulmonic** tract assessment revealed normal valve structure, laminar flow, and diameter (approx.1:1 pa/ao ratio). No visible **pericardial** or free pleura fluid was noted. No echographically detectable evidence of infiltrative disease was visible. The cranial **mediastinum and pericardial regions** were free of masses in the visible window.


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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	1.9	67	94	0.16
CANINE CARDIAC PARAMETERS	HR (BPM)	AV VMAX (m/s)	PV MAX (m/s)	BODY WEIGHT	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				
PATIENT		1.04	0.88	17 lbs	4.1 max	3.58	

ULTRASONOGRAPHIC FINDINGS

Mitral valve prolapse.

Stage B2 valvular disease with moderate left atrial enlargement.

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

There is concern for emerging heart failure in this patient. Pimobendan is recommended at 0.3 mg/kg b.i.d. Ace inhibitor is recommended at 0.5 mg/kg s.i.d. progressing to b.i.d. and Lasix at 1-2 mg/kg b.i.d. Target respiratory rate is less than 20/minute. The patient should be monitored carefully given the mitral valve prolapse. The left atrial size is large enough to be causing cardiac cough. Hycodan therapy could also be considered.

B2/C1: The heart is in a somewhat precarious state with volume overload and a heart that is working to compensate for the valvular insufficiency. Target respiratory rate is < 20 resp/minute after therapy. After initiating therapy, I recommend recheck on the clinical exam, BUN, Creatinine, USG, Chest radiographs & Blood pressure in 5-7 days. Recheck echo in 1 month. Earlier if clinical decompensation is occurring. I do not recommend anesthesia at this time until stabilization has occurred on the recommended medications. Repeat pre-anesthetic echo is ideal if anesthesia is eventually necessary.



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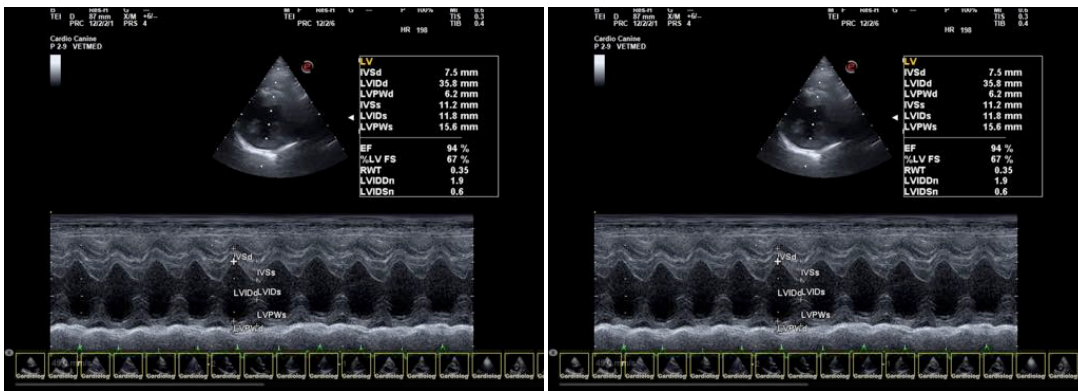
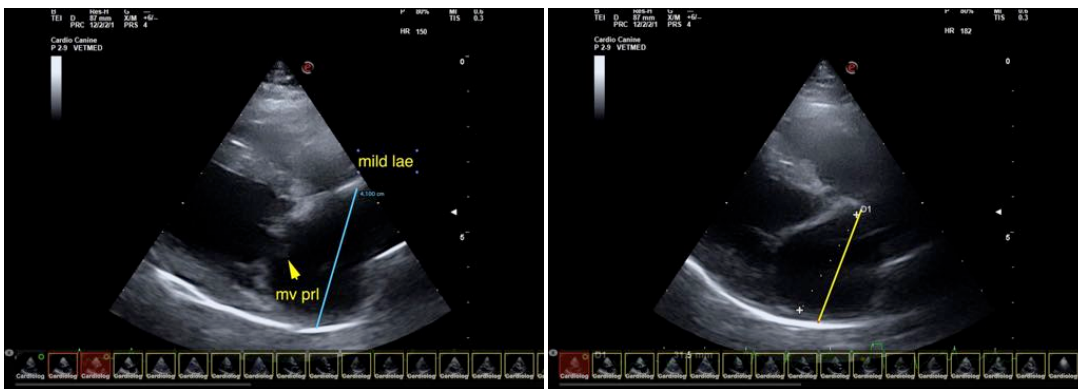
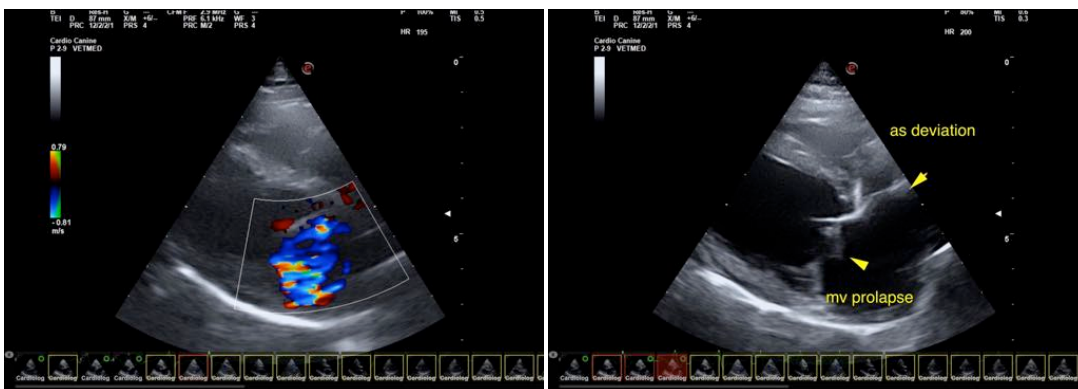
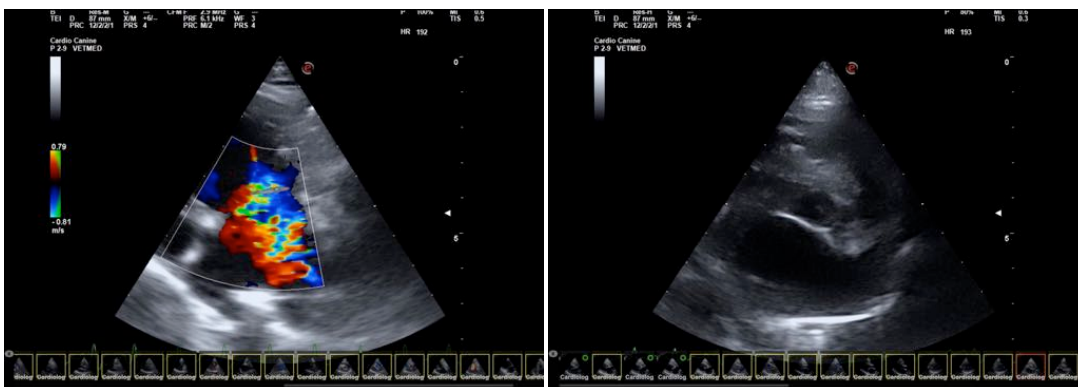
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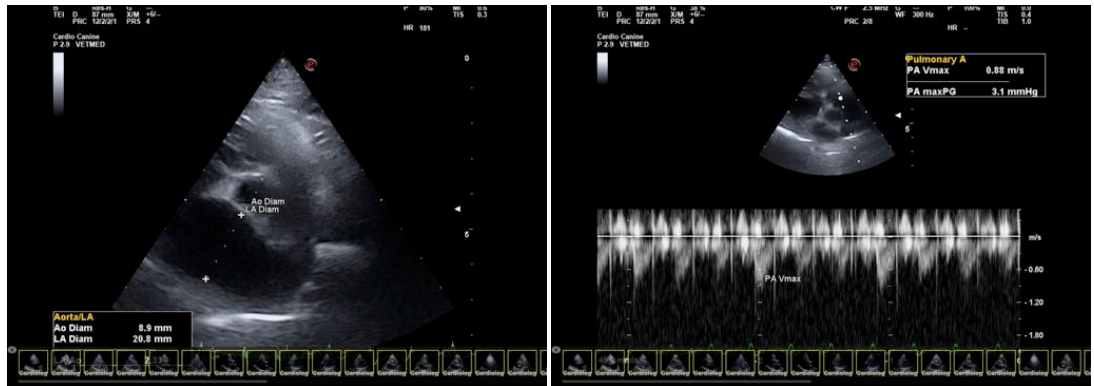
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The information and recommendations provided are based on the images presented by the referring veterinarian. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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.

Eric Lindquist, DMV, DABVP, Cert. IVUSS, CEO of SonoPath.com
info@SonoPath.com