



PATIENT

Little Bear Hewitt

SPECIES

Canine

BREED

Terrier Mix

SEX

Spayed Female

AGE

10 years

WEIGHT

8.7 kg

INTERPRETED BY

Eric Lindquist, DMV
DABVP, Cert. IVUS

IMAGING PERFORMED BY

Dr. Stegemoller

HOSPITAL NAME

North Idaho AH

REFERRING VET

Dr. Stegemoller

INVOICE

97976

DATE

3/31/22

PRESENTING CLINICAL SIGNS

History: History: Presented 3/12 for increased breathing and paroxysmal coughing for 2 days. Patient still had energy but would not have endurance. Eats a homemade diet of chicken, carrots, peas. Was started on medications from another veterinary hospital for heart murmur (enalapril 2.5mg SID, cough suppressant, furosemide 20mg SID). Owner reported was diagnosed with fatty liver disease and heart failure. Thoracic radiographs taken that day and showed a bronchointerstitial pattern and cardiomegaly. Added low-dose steroid, pimobendan, and reduced furosemide dosing. Returned on 3/25 for recheck. Coughing had stopped within 24 hours, patient was more energetic and as owner started to taper off steroid, coughing started to return. Elected to add Temaril-P and reduce furosemide further and recommended echocardiogram. Presented 3/31 for more thorough cardiac work up. Owner reports coughing in the morning and evening and the Temaril P didn't make much difference. Giving 12.5mg furosemide BID, hydrocodone SID, pimobendan SID, enalapril SID.

Abnormal PE/Chem/CBC/UA Results: Abnormal laboratory findings: CBC - WBC 17.61 characterized by neutrophilia (13.56) and monocytosis (1.63), plt 605; Chem - ALP 3819, Lipase 5105, remainder of chem 17 WNL Other diagnostics available (ie. Blood pressure, radiographs, etc): BP WNL, thoracic radiographs being submitted for interpretation

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. Doppler indicated measurable insufficiency. The **left ventricle** revealed volume overload. 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 slight insufficiency. 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. Comet tail lung pattern was noted in this patient.



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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	5.0		>2.0		45	80	0.1
CANINE CARDIAC PARAMETERS	HR (BPM)	AV VMAX (m/s)	PV MAX (m/s)	BODY WEIGHT (kg)	LA 2D short axis Base view (cm)	LVIDd (cm)	LVIDs (cm)
NORMAL PARAMETER	50-100	0.7-1.7	0.7-1.6				
PATIENT			0.6		3.8	3.74	

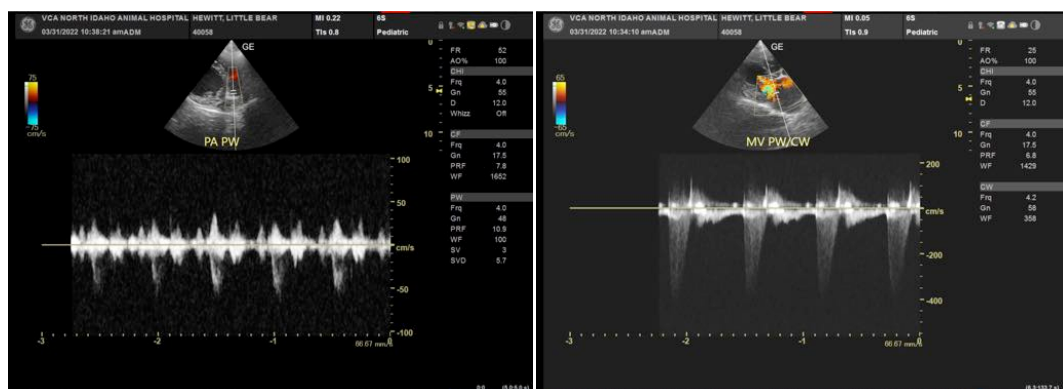
ULTRASONOGRAPHIC FINDINGS

- Left ventricular and left atrial volume overload.
- Severe mitral insufficiency and minor tricuspid insufficiency.
- Comet tail lung pattern.
- Consistent with stage C1 valvular disease.

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

I recommend quadrotherapy in this patient with Pimobendan at 0.3 mg/kg b.i.d., Lasix 2-3 mg/kg b.i.d., ace inhibitor at 0.5 mg/kg s.i.d. progressing to b.i.d. and Spironolactone at 1-2 mg/kg b.i.d.

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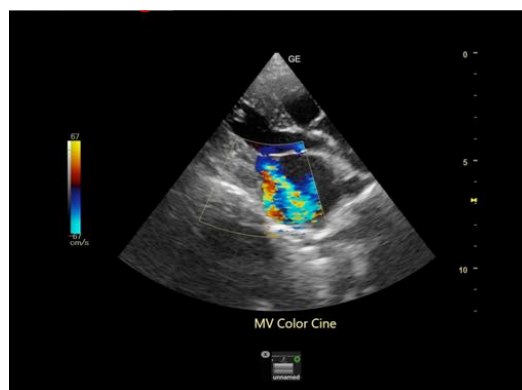
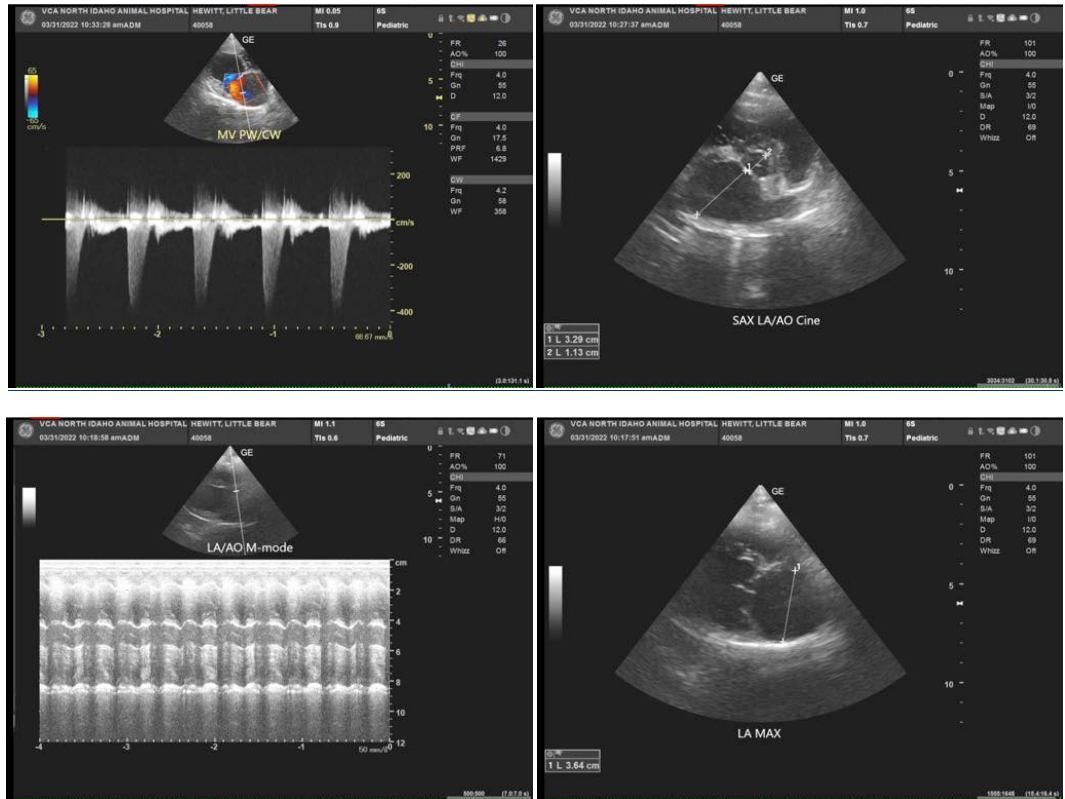
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The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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.



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

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