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Clinical Sonography & Telecytology
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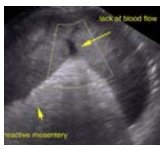
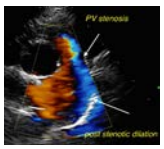
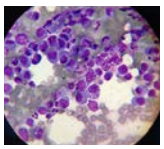
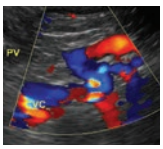

SonoPath.com
1-800-838-4268 info@sonopath.com

PATIENT
Max Monahan

SPECIES
Canine

BREED
Yorkshire Terrier

SEX
Neutered Male

AGE
13 Years

WEIGHT
18 Pounds

INTERPRETED BY
R. McKenzie Daniel, DVM, DABVP (Canine and Feline)

IMAGING PERFORMED BY
Kelly Vazquez

HOSPITAL NAME
Ho-Ho-Kus VH

REFERRING VET
Dr. Dan Eisenberg

INVOICE
33836

DATE
12/30/21

PRESENTING CLINICAL SIGNS

Patient presents for cough and grade 4/6 heart murmur. No reported meds.

ULTRASONOGRAPHIC EXAMINATION OF THE HEART

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	6.0	<2.0	1.9	2.6	55.4	90.1	0.28
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				
PATIENT	120	1.25	0.9		4.8	4.48	

Cardiac Presentation

The echocardiogram for this patient presented moderate to severely excessive **left atrial size** expressed both in the LA/AO and LA max measurements. Deviation of the intraatrial septum towards the right atrium was present, consistent with increased left atrial pressure. The cranial and caudal **mitral** valve leaflets presented vegetative thickening consistent with endocardiosis with subjective abnormal/lack of coaptation owing to left atrial enlargement, yet without evidence of prolapse or chordae tendineae rupture. Doppler indicated measurable insufficiency. The **left ventricle** presented normal thicknesses with linear contour and increased left ventricular volume. 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. Mild tricuspid valve insufficiency present on color doppler. 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.

ULTRASONOGRAPHIC FINDINGS

- Chronic mitral valve disease (ACVIM B2 to possible C)
- Minor TR

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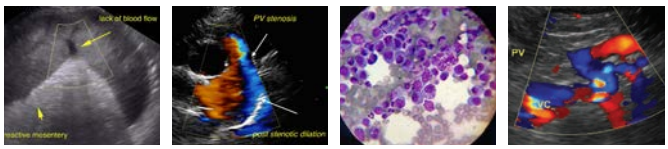

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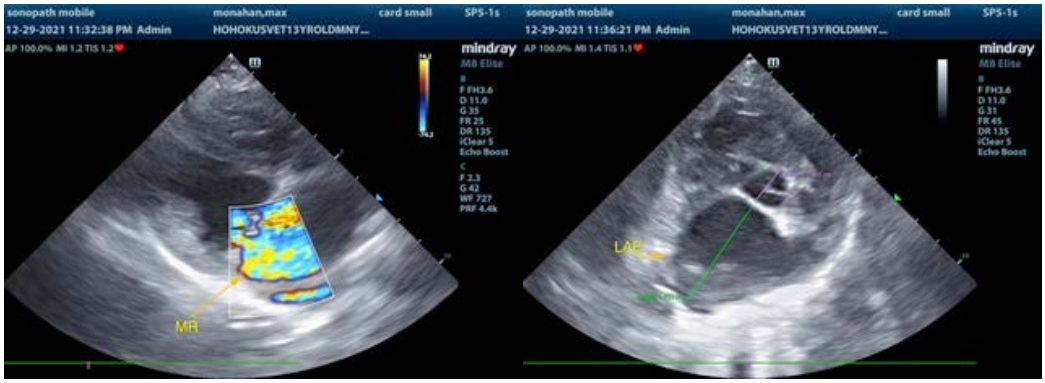
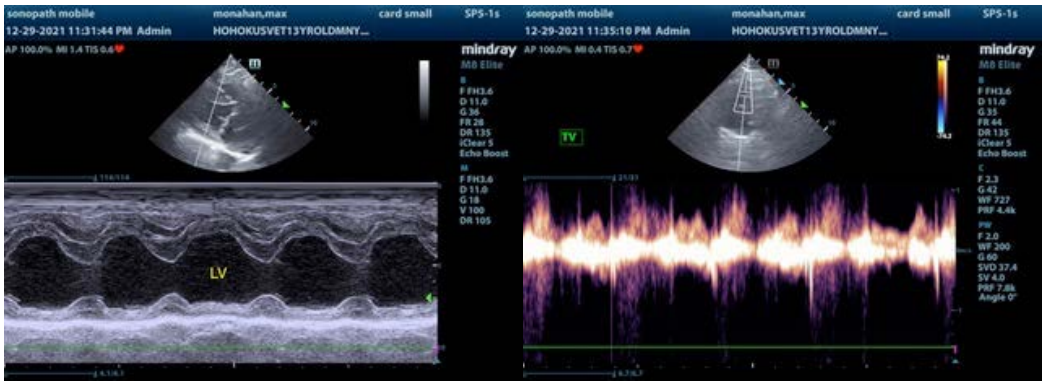
INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

The murmur is secondary to chronic degenerative valvular changes with primary eccentric mitral valve insufficiency and concurrent tricuspid valve insufficiency. The moderate to severe LA enlargement indicates that the current and future risk going forward for complication is elevated if not current evidence of pulmonary edema. The estimated pulmonary pressure gradient based on TR velocity was not overtly consistent with clinical pulmonary hypertension.

The coughing in this patient may be multifactorial in origin with some cardiogenic component potentially owing to mainstem bronchi irritation or compression owing to LA enlargement. Potential for concurrent primary lower airway disease is also possible. Given this presentation, Vetmedin at 0.3 mg/kg PO BID, weak diuretic such as Spironolactone (1-2 mg/kg PO BID) and hydrocodone at appropriate dose is recommended. As needed respiratory support based on 3-view chest radiographs suggested. Recheck echocardiogram suggested in 6 months, sooner if clinical signs consistent with progressive heart disease (i.e., exercise intolerance, increased resting respiration rate, syncope, etc.) are noted.





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.

R. McKenzie Daniel, DVM, DABVP (Canine / Feline Practice)
info@SonoPath.com