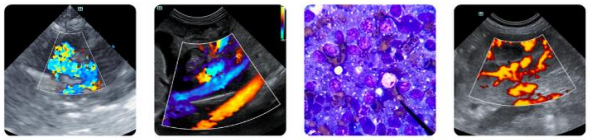

PATIENT

Emma Gould

SPECIES

Canine

BREED

Boxer X

SEX

FS

AGE

15Y

WEIGHT

35lbs

INTERPRETED BY

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

IMAGING PERFORMED BY

Sorbo

HOSPITAL NAME

JM Pet Resort & Veterinary Clinic

REFERRING VET

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INVOICE

75221

DATE

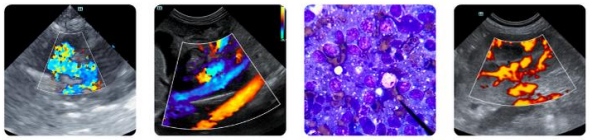
5-29-26

PRESENTING CLINICAL SIGNS

Dec 2020 (first visit): Murmur noted as pre-existing; documented as grade III/VI left systolic. Echocardiogram recommended at initial visit.
Aug 2022: Grade 3 murmur noted.
Apr 2023: No murmur or arrhythmia auscultated (notable exception — may reflect examiner variation).
Jun 2023: Grade 4/6 murmur documented.
Sep 2024: Grade 4 left-sided systolic murmur.
Mar 2025: Grade 4/6 murmur, noted as historical finding; ddx degenerative valve disease, cardiomyopathy.
Feb 2025: Grade 5/6 left systolic murmur documented (Dr. Durville).
Sep 2025: Grade 5/6 murmur with arrhythmia noted; family history of heart disease mentioned by owner. Echo strongly recommended; owner agreed to schedule.
Jan 2026: Grade 5/6 murmur with left precordial thrill, grade 4/6 right-sided murmur, no JVD, no fluid sounds. Echo again strongly recommended.
May 2026 (today): Active diagnosis listed as cardiac murmur; murmur now documented as grade 6/6 by tech intake notes. Echocardiogram and BP measurement ordered.
Pattern: Progressive murmur from ~3/6 in 2020 → 6/6 in 2026, with arrhythmia emerging in 2025. Echo has been recommended repeatedly but never completed.
Abnormal PE/Chem/CBC/UA Results: Exam (cardiovascular-relevant): Precordial thrill noted on left (Jan 2026) Right-sided murmur (4/6) in addition to dominant left-sided murmur (Jan 2026) No JVD, no pulmonary fluid sounds on auscultation (Jan 2026) Pulses described as strong and synchronous throughout Intermittent cough noted with exertion/leash-pulling (mentioned Sep 2025, Mar 2025) — flagged as potentially cardiac in origin Labs CBC has been consistently normal — no anemia Creatinine mildly elevated at 1.7 mg/dL (Sep 2025; ref 0.5–1.6), down to 1.4 (Apr 2025, normal) — relevant if cardiac medications such as ACE inhibitors or diuretics are considered BUN normal across all panels SDMA normal ALP persistently and markedly elevated (830–1606 range across visits)

ULTRASONOGRAPHIC EXAMINATION OF THE HEART

CANINE CARDIAC PARAMETERS	MR VMAX (m/s)	TR VMAX (m/s)	LA/AO (M-mode)	LA/AO (Heart Base; Swe)	FS (%)	EF (%)	EPSS (cm)
NORMAL PARAMETER	4.5-5.5	<2.7	1.3	Up to 1.6	28-40	40-100	<0.6
PATIENT			NM	2.3	49	82	0.2
CANINE CARDIAC PARAMETERS	**HR** (BPM)	**AV VMAX** (m/s)	**PV MAX** (m/s)	**BODY WEIGHT** (lbs)	**LAD** LA MAX 4 Chamber	**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	NM	1.9	0.8	35	5.7	5.2	



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Cardiac Presentation

The echocardiogram in this patient demonstrated moderate to severe increased **left atrial** dimension with concurrent interatrial septal deviation on 2 different LA measurement methods. The cranial and caudal **mitral** valve leaflets presented thickening consistent with degenerative change/endocardiosis with mild valvular prolapse. Doppler indicated measurable significant eccentric insufficiency. Borderline increased measured MR velocity 6.0 m/s. The **left ventricle** presented thicknesses with linear contour and moderate to significant increased LV internal dimension and increased sphericity. 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. Normal measured LVOT velocity. 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. No overt significant TR on 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). Normal measured RVOT velocity. No visible **pericardial** or free pleura fluid was noted. No echographically detectable evidence of cardiac / pericardial tumors was visible. No evidence of arrythmia or hepatic congestion.

ULTRASONOGRAPHIC FINDINGS

- Chronic mitral valve disease with mitral valve prolapse and emerging left heart volume overload (ACVIM B- possible emerging C).

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

The cause of the murmur is chronic degenerative valvular changes with secondary eccentric mitral valve insufficiency. The degree of left atrial/left ventricle enlargement and potential emerging left heart volume overload indicate that the risk of complication secondary to mitral valve insufficiency is significantly elevated with possible early signs of congestion. **Pimobendan** 0.3 mg/kg BID. Lowest effective dose **Furosemide** 1-2 mg/kg BID, **ACEI** is suggested if systemic BP >130. Antitussive medication is indicated if coughing is present. Omega fatty acid supplementation and mild salt restriction may be beneficial. Serial monitoring of resting respiration rate is recommended. Prognosis is considered guarded going forward as this patient will remain at increased risk for CHF. Echocardiographic monitoring indicated with recheck echo suggested in 6 months, sooner if clinically indicated. Elective anesthesia is not advised pending further assessment. Monitoring of renal parameters, systemic BP, and ECG is recommended.

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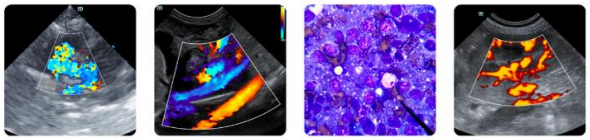

Clinical Sonography & Telecytology
Educational Teleconsultation Services™

SonoPath.com info@sonopath.com 1.800.838.4268

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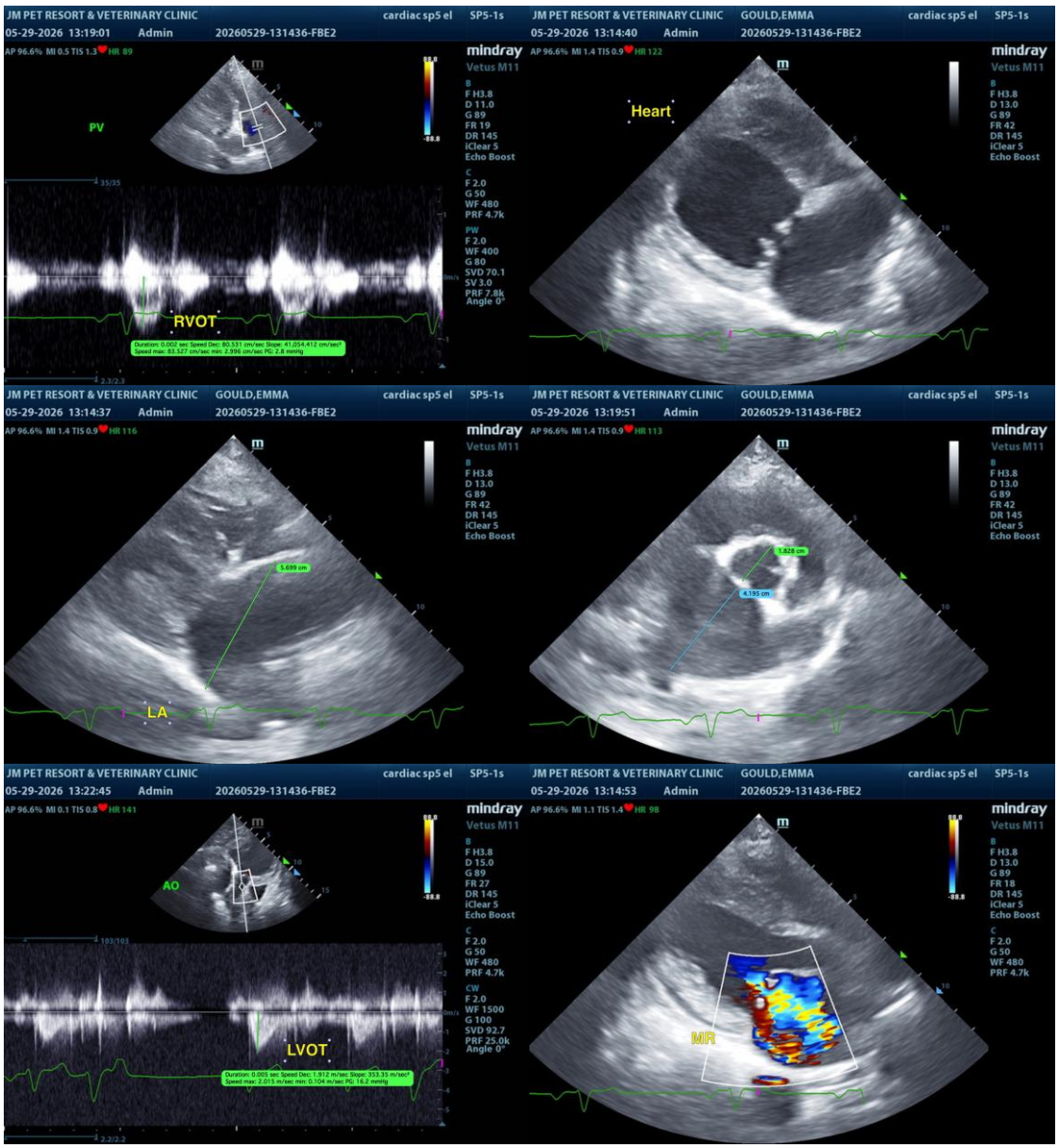

The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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.

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