



PATIENT

Keily Olivares

SPECIES

Canine

BREED

Yorkshire Terrier

SEX

Spayed Female

AGE

12 Years

WEIGHT

4 Pounds

INTERPRETED BY

Sara Brethel, DVM,
DACVIM (Cardiology)

IMAGING PERFORMED BY

Dr. Gabriel Ferrer, DVM

HOSPITAL NAME

Pulse Pet Ultrasound
Services

REFERRING VET

Dr. Mario Roman

INVOICE

35164

DATE

12/31/25

PRESENTING CLINICAL SIGNS

History: Presented as a referral for an echocardiogram to evaluate possible cardiomegaly and anesthesia risk. Pt presented with history of chronic cough and radiographs were taken and showed cardiomegaly. Wanted to further evaluate heart and determine if can undergo an anesthetic procedure.

Abnormal PE/Chem/CBC/UA Results: PE: no HM Radiograph report attached as supporting documents.

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	--	NM	1.8	41.5	--	NM
CANINE CARDIAC PARAMETERS	HR (BPM)	AV VMAX (m/s)	PV MAX (m/s)	BODY WEIGHT (kg)	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	--	0.99	0.72	1.8	2.46	2.0	1.17

**ECG noted during the echo: The rhythm is irregular and it is unclear if the rhythm is primarily sinus. There may be a sinus arrhythmia present, but a 6 lead electrocardiogram is recommended.

Cardiac Presentation

The mitral valve leaflets are mildly thickened with mild mitral regurgitation posteriorly directed. There is no prolapse of the mitral valve leaflets. The left atrial size is moderately increased. Left ventricular internal dimensions during diastole are within normal limits and systolic function is preserved in the face of mitral regurgitation. There is normal right atrial size without tricuspid regurgitation. There is no prolapse of the tricuspid valve leaflets and no evidence of pulmonary hypertension based upon tricuspid regurgitant velocities. The right ventricle subjectively appears normal in structure and function. The aortic and pulmonic valves have normal morphology and the corresponding outflow velocities are within normal limits. There is no evidence of pulmonic or aortic insufficiency. The aorta appears normal. The pulmonary artery and associated branches appear normal. There is no evidence of pleural effusion, pericardial effusion, or intracardiac masses.

ULTRASONOGRAPHIC FINDINGS

- Moderate left atrial enlargement



PATIENT

- Irregular rhythm

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INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

The patient has evidence of moderate left atrial enlargement and irregular rhythm. There is degeneration of the mitral valve. There is mitral regurgitation. This may be causing a heart murmur. Prior to moving forward with elective anesthetic procedures, an electrocardiogram is recommended to further evaluate the patient's rate and rhythm to ensure it is sinus in origin. Some bradycardic rhythms or arrhythmias can also progress underlying cardiac disease in the absence of a heart murmur or in the absence of a loud murmur. As long as the rhythm is sinus, I would also recommend starting this patient on pimobendan at a dose of 0.27-0.32 mg/kg. I would recommend using the liquid Vetmedin due to the patient's size. This is a twice daily therapy. Recheck echo is recommended in 6 months, sooner if the patient is developing cardiovascular clinical signs. The client should start monitoring respiratory rate and effort at home if not already doing so. The resting respiratory rate should be < 35-40 breathes/minute when the patient is resting or sleeping. If the breathing rates are increasing then chest radiographs are recommended.



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.

Sara Brethel DVM, DACVIM (Cardiology)

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