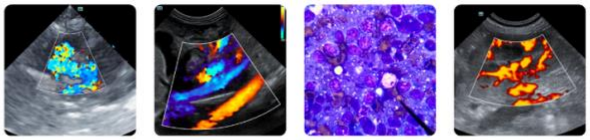


PATIENT

Belle Keilty

SPECIES

Canine

BREED

Terrier X

SEX

Spayed Female

AGE

11 Years

WEIGHT

9.8 kg

INTERPRETED BY

James Wood, DVM, DACVIM (Cardiology)

IMAGING PERFORMED BY

Dr. Iacovides

HOSPITAL NAME

Oakbank AH

REFERRING VET

Dr. Atkinson

INVOICE

37572

DATE

6/17/26

PRESENTING CLINICAL SIGNS

History: A new grade 3-4/6 heart murmur was auscultated.

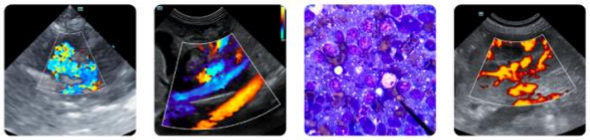
Abnormal PE/Chem/CBC/UA Results: grade 3-4/6 heart murmur was auscultated. Strong synchronous pulses. recent weight loss bcs 5/9.

ULTRASONOGRAPHIC EXAMINATION OF THE HEART

CANINE CARDIAC PARAMETERS	LA long axis	LAmaxN	Ao long axis	LA/AO (Heart Base; Swe, short axis)	LA/AO long axis	LVIDd	LVIDdN
NORMAL PARAMETER		<1.57		<1.6	<2.5		<1.7
PATIENT	5.01	2.48	1.11	2.45	4.5	4.94	2.4
CARDIAC PARAMETERS	**Body Weight (kg)**	**AV VMAX (m/s)**	**PV MAX (m/s)**	**MR VMAX (m/s)**	**TR VMAX (m/s)**	**FS (%)**	**LVIDsN**
NORMAL PARAMETER		0.7-1.7	0.7-1.6			22 - 49%	<0.9
PATIENT	9.8	1.39	0.5	4.13	3.32	44.1	1.13
CARDIAC PARAMETERS	**HR (bpm)**	**MV E (m/s)**	**MV A (m/s)**	**MV E/A (m/s)**	**EF (%)**	**IVSdN**	**LVFWdN**
NORMAL PARAMETER						<0.6	<0.6
PATIENT	1.45	1.7	0.36	4.7	75.2	0.41	0.26

Cardiac Presentation

The mitral valve is moderately thickened. There is mild prolapse of the anterior leaflet and moderate to severe central mitral valve insufficiency. The left atrium is severely enlarged. The left ventricle is severely dilated. The left ventricular end-diastolic wall thicknesses are 4normal. Normal left ventricular systolic function. Transmitral E and A waves suggest a restrictive LV filling pattern, concerning for elevated left atrial pressure. The aortic valve is mildly thickened. Aortic valve insufficiency is not observed. The right atrium is normal in size. The tricuspid valve is mildly thickened, and there is mild eccentric tricuspid valve insufficiency. Subjectively normal RV wall thickness and systolic function. The pulmonary valve is normal in appearance. Normal trans-pulmonary flow profile and velocity. No significant pulmonary valve insufficiency is present. The pulmonary trunk and



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proximal branch pulmonary arteries are normal in size and distensibility. There is no evidence of clinically relevant pulmonary hypertension. No cavitary effusions or cardiac masses are documented.

ULTRASONOGRAPHIC FINDINGS

- MMVD- ACVIM stage B2/C (severe LA and LV enlargement, restricted LV filling)

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

The echocardiogram showed evidence of myxomatous mitral valve disease. Based on this echocardiogram, there is severe left atrial and left ventricular enlargement. The patient would benefit from starting pimobendan (if not already started – target dose at least 0.3mg/kg q12 at this stage) to slow the progression of this disease and delay the onset of CHF. Though there are no reported clinical signs of CHF at this time based on the provided history and examination, thoracic radiographs are recommended to fully rule out CHF and obtain a baseline of the patient's pulmonary parenchyma for comparison should clinical signs develop in the future. If there is concern clinically or radiographically for CHF, furosemide should be started at ~2mg/kg PO q12hr pending assessment of renal function. If so, recheck thoracic radiographs and renal panel with electrolytes in 2 weeks to assess for a response. Given the severity of the left heart enlargement, the addition of an ACEi at 0.3-0.5 mg/kg PO q12 and spironolactone at 1-3 mg/kg PO q24 is recommended provided normal renal function and no other comorbidities that would preclude this therapy. Though the evidence for RAAS blockade prior to CHF is limited, this patient is likely to benefit based on the severe remodeling. A blood pressure is also recommended. If the systolic BP >160mmHg after ACEi therapy, amlodipine should be considered. Elevated BP worsens the mitral regurgitant fraction and leads to faster progression. Recheck in 2 weeks if ACEi/spironolactone and/or furosemide are started for a recheck renal panel with electrolytes and a blood pressure. Recheck every 6 months or sooner if concerns arise for a recheck echocardiogram to monitor for progression, BP and thoracic radiographs (strong recommendation if there is a new cough or increase in the RR).

Monitoring

It is very important to catch any clinical signs concerning for emerging CHF as early as possible. The client should be closely monitoring and ideally tracking the sleeping respiratory rate. The sleeping RR should be between 10-30 breaths per minute or less (ideally in the teens or low 20s). **If the resting RR is trending upward**, consistently>35/min while resting/sleeping AND/OR there is a new or progressive cough, the patient should be seen urgent for evaluation to determine if CHF is developing. *RECHECK ASAP for thoracic radiographs if there is a new cough or increase in RR to detect early CHF and avoid ER presentation**

Sodium Restriction

Moderate sodium restriction may be beneficial in managing this stage of cardiac disease. High-salt treats or diets should be avoided. If interested, further information on moderate sodium restricted diets for dogs with advanced cardiac disease can be found at: https://heartsmart.vet.tufts.edu/nutrition/.

Surgical Options

Historically, degenerative mitral valve disease in dogs has been managed with medical therapy aimed at controlling clinical signs and slowing progression. In recent years, surgical procedures have become available for select patients. Open-heart mitral valve repair is offered only at a small number of centers worldwide, including the University of Florida in the United States and specialized institutions in the

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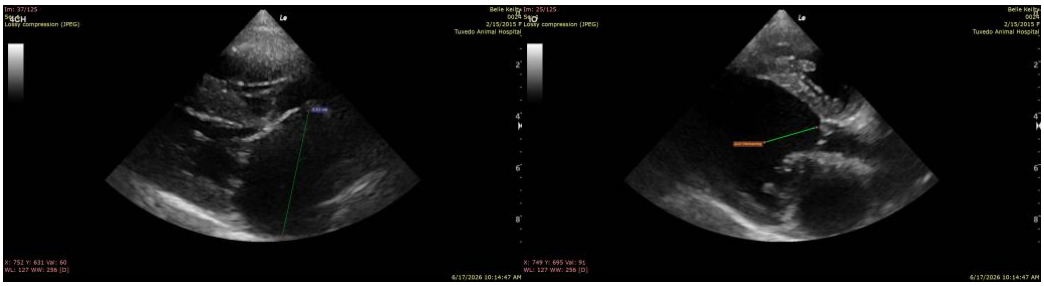
UK and Japan, where the largest number of these procedures have been performed. While great success can be achieved with open-heart surgery, it involves notable cost, invasiveness, and travel to a center that offers these procedures. A less invasive option is transcatheter edge-to-edge repair (TEER), which uses a catheter-based approach to reduce mitral valve regurgitation without the need for open-heart surgery. This procedure is available only at select centers, with Colorado State University having completed the most TEER procedures in dogs to date. In addition, palliative procedures such as left atrial decompression (LAD) can be performed in certain cases, typically once medical therapy has been exhausted. These are not curative but may help relieve symptoms by reducing pressure within the left atrium and lungs, thereby improving comfort and quality of life for patients with advanced disease/end-stage CHF.



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)

info@SonoPath.com