



## PATIENT

Clover Towle

## SPECIES

Feline

## BREED

DSH

## SEX

FS

## AGE

Approx. 6 years

## WEIGHT

9 lbs.

## INTERPRETED BY

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

## IMAGING PERFORMED BY

Dr. Ebersole

## HOSPITAL NAME

Scanvet

## REFERRING VET

Dr. Walsh

## INVOICE

13634

## DATE

1/26/22

## PRESENTING CLINICAL SIGNS

New heart murmur noted when presented for dental. Adopted 6 months ago from the shelter. May be older than estimated age.

Abnormal PE/Chem/CBC/UA Results: PE: Grade 3/6 systolic heart murmur, Grade 3/4 PD. CBC/Chem/T-4: WNL

## ULTRASONOGRAPHIC EXAMINATION OF THE HEART

FELINE CARDIAC PARAMETERS	BODY WEIGHT (kg)	HR (BPM)	IVSd (cm)	LVIDd (cm)	LVWd (cm)	FS (%)	EF (%)
NORMAL PARAMETER	-----	150-240	0.3-0.6	1.0-2.1	0.25-0.6	35-67	80-100
PATIENT	--	NM	0.5	1.77	0.44	62.1	95.7
FELINE CARDIAC PARAMETERS	LA/AO (Boon)	LA/AO HEART BASE (Sisson)	LA 2D 4-chamber long axis AS to FW (Sisson) (cm)	LVOT VEL. (m/s)	RVOT VEL. (m/s)	IVRT (m/)	
NORMAL PARAMETER	<1.5	0.88-1.79	0.7-1.7	<1.6	<1.3	40-60	
PATIENT	1.2		1.24	1.3	0.8	NM	

Adapted from June Boon, Veterinary Echocardiography, 1998  
Sisson D et al. JVIM 1991; 5: 232, Jacobs et al. Am J Vet Res 1985; 46:1705

## Cardiac Presentation

The echocardiogram in this patient demonstrated enlarged **left atrial** size based on 3 separate LA measurements. The cranial and caudal **mitral** valve leaflets presented normal linear structure and kinetics. The **left ventricular** septum and free wall revealed adequate contractility and normal left ventricle volume with evidence of myocardial remodeling and mild subjective increased endocardium echogenicity. This does not appear to be a functional issue at this point and is likely suggestive of some level of myocardial fibrosis or age-related myocardial changes. No evidence of LV free wall or IVS hypertrophy. The **left ventricular outflow** tract demonstrated normal laminar flow and subjective structural integrity. The **right atrium** and auricle revealed increased size and normal content. No evidence of masses was noted or chamber overload. **Tricuspid** valvular assessment demonstrated adequate linear morphology and kinetics. 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, mildly turbulent dynamic flow with normal pulmonary artery diameter compared to the aorta. No visible **pericardial** or free pleura fluid was noted or extra cardiac pathology in the visible planes. The cranial **mediastinum and pericardial regions** were free of masses in the visible window. No evidence of arrhythmogenic disease.

## ULTRASONOGRAPHIC FINDINGS

- Overtly normal cardiac structure and function with mild LV myocardial remodeling
- Subjective Mild turbulent dynamic RVOT systolic flow with mildly elevated RVOT velocity



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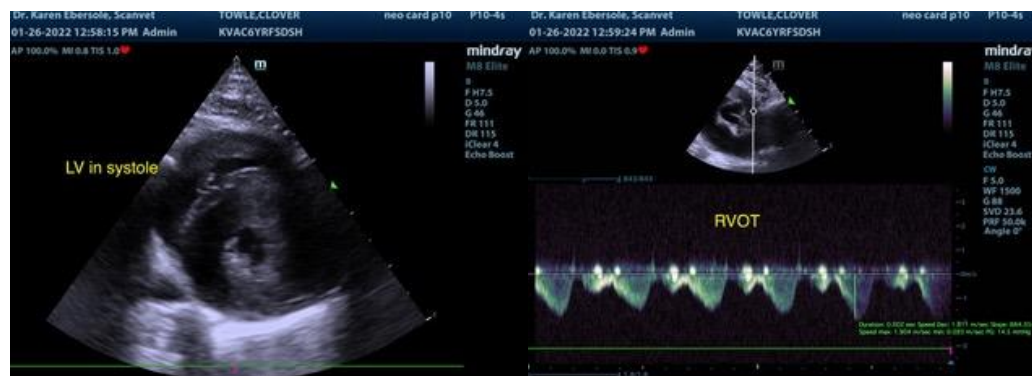
## INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

No overt evidence of significant structural or functional cardiomyopathy, including no evidence of systolic dysfunction or left or right heart chamber enlargement. The only potential source of the murmur that was noted was the mildly elevated RVOT velocity and associated mild turbulent to dynamic RVOT systolic flow. This is essentially a flow murmur and not considered pathologic. Alternative physiologic or flow murmur potentially only elevated at elevated heart rates, assuming no evidence of volume changes (dehydration) or anemia also possible. Given the lack of structural or functional cardiomyopathy, conservative monitoring at this time would be appropriate. No indication for cardiac medications. Anesthetic risk is considered low. Potentially, this patient may be at mild increased risk for fluid overload, therefore, judicious IV fluid use under anesthesia is advised. Screening blood pressure prior to any potential anesthesia is suggested.

Suggested anesthetic protocol may include opioid or Benzodiazepine pre-med, induction with Propofol or Alfaxalone, and appropriate gas anesthesia with avoidance of alpha 2 agonists.

<https://www.antechdiagnostics.com/cadet-braf>

Recheck echocardiogram suggested in 6 months or sooner if clinical signs suggestive of heart disease arise or if murmur intensity progresses.





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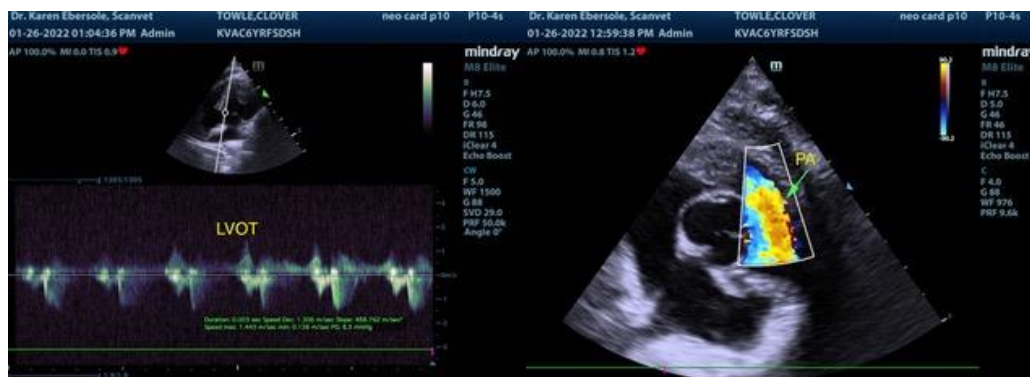
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The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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.

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