



## PATIENT

Bruno Collier

## SPECIES

Canine

## BREED

Poodle Mix

## SEX

MN

## AGE

15 years

## WEIGHT

18 lbs.

## INTERPRETED BY

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

## IMAGING PERFORMED BY

Kelly Vazquez

## HOSPITAL NAME

North Haledon VC

## REFERRING VET

Dr. Mansfield

## INVOICE

14022

## DATE

10/26/21

## PRESENTING CLINICAL SIGNS

History: Murmur, coughing a lot more lately. Current meds: Enalapril 5 mgs BID, Furosemide 25 mgs BID, Pimobendan 2.5 mgs BID.

Abnormal PE/Chem/CBC/UA Results: BUN 56, creat. 2.3 (3/21/21).

## 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	5.5	<2.0	NM	1.8	40.3	72	0.15
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	115	1.6	0.8	--	4.6	3.8	--

## Cardiac Presentation

The echocardiogram in this patient demonstrated moderate **left atrial** size based on 3 different LA measurement methods. Deviation of the intra-atrial septum toward the right atrium indicative of elevated left atrial pressure was present. The cranial and caudal **mitral** valve leaflets presented vegetative thickening consistent with endocardiosis without evidence of either prolapsed or chordae tendineae rupture. Doppler indicated measurable eccentric insufficiency. The **left ventricle** presented thicknesses with linear contour with increased left ventricle 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 systolic laminar flow and subjective structural integrity. Aortic valve insufficiency measuring 4.3 m/s was noted. 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. Color doppler assessment of the tricuspid valve revealed minor insufficiency. 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.



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**ULTRASONOGRAPHIC FINDINGS**

- Chronic mitral valve disease (ACVIM B-2)
- Tricuspid valve insufficiency- estimated pulmonary pressure gradient not consistent with clinical pulmonary hypertension
- Aortic valve insufficiency

**INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS**

The cause of the murmur is consistent with chronic degenerative valvular changes with secondary eccentric mitral valve insufficiency. Concurrent tricuspid and aortic valve insufficiency also present yet not likely audible. The coughing in this patient may be multifactorial in origin with contribution to cardiogenic edema although concurrent lower airway disease or mainstem bronchi compression owing to left atrium enlargement is possible. In addition to current triple therapy, hydrocodone may prove beneficial. Continued monitoring of renal parameters (given the azotemia) as well as systemic blood pressure (given the aortic valve insufficiency) recommended. Baseline monitoring of resting respiration rate recommended. Recheck echocardiogram suggested in 6 months or sooner if clinical signs consistent with heart disease (i.e., increased resting respiration rate, exercise intolerance, syncope, etc.) are noted.

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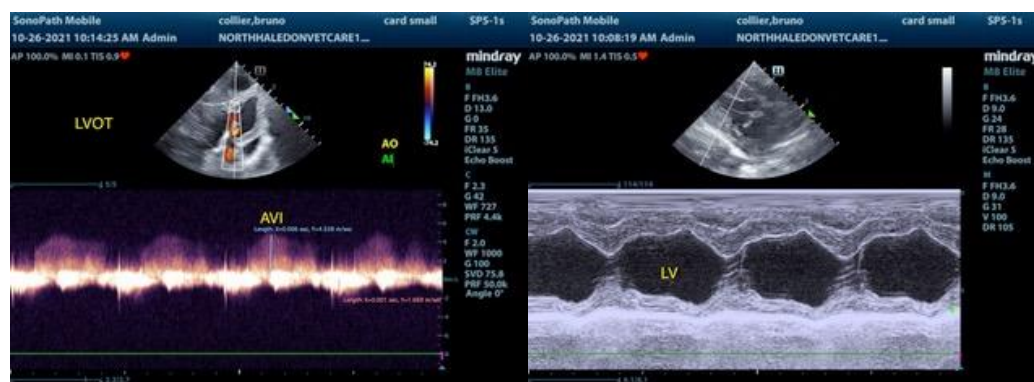
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The information and recommendations provided are based on the images presented by the referring veterinarian. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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