

**PATIENT PRESENTING CLINICAL SIGNS**

Arty Knutson

**SPECIES**

Canine

**BREED**

Boston Terrier

The Patient presents for: Past year in CHF, diagnosed after collapsing on run. Heart meds started. No more collapses, but wheezing/coughing/hacking has gotten worse, particularly in AM. Other dogs were over yesterday and maybe too active. This morning wheezing more. Owner gave all heart meds this morning ~8AM, except Furosemide which he has been out of for ~5 days. History of: CHF No known medical issues or sensitivities Medications: Enalapril 5MG (2x daily), Spironolactone 25MG (2x daily), Furosemide 20MG (2x daily), Pimobendan 7.5MG (2x daily)  
Abnormal PE/Chem/CBC/UA Results: Thoracic radiographs confirm enlarged left atrium and patchy interstitial pattern consistent w cardiogenic pulmonary edema.

**ULTRASONOGRAPHIC EXAMINATION OF THE HEART**

**SEX**

Neutered Male

**AGE**

11 Years

**WEIGHT**

13 kg

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	5.4	3.0	2.3	2.9	53	83.8	0.2
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	BELOW	BELOW	BELOW	BELOW
PATIENT	NM	2.3	1.0		5.7	4.98	

**INTERPRETED BY**

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

**IMAGING PERFORMED BY**

Dr. Callihan

**HOSPITAL NAME**

Animal Emergency Care

**REFERRING VET**

Dr. Bailey

**INVOICE**

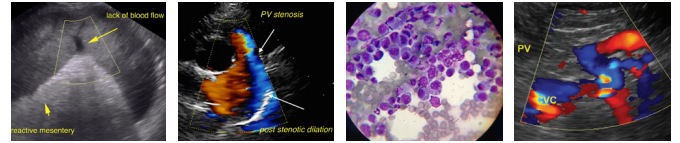
35613

**DATE**

2/13/22

**Cardiac Presentation**

The echocardiogram for this patient presented moderately to severely excessive **left atrial size** expressed in 3 different LA measurement methods. Deviation of the intraatrial septum towards the right atrium noted, consistent with elevated left atrial pressures. The cranial and caudal **mitral valve** leaflets presented vegetative thickening consistent with endocardiosis. Doppler indicated measurable moderate insufficiency. The **left ventricle** presented thicknesses with linear contour with increased left ventricular volume. The **myocardium** presented overall 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. Potential for minor aortic valve insufficiency possible. Mild elevated LVOT velocity. The **right atrium** and auricle revealed overall normal size without evidence of chamber overload. Uniform, primarily spherical mass lesion noted in the right atrial free wall to right atrioventricular groove, measuring approximately 2.2 cm in diameter. **Tricuspid** valvular assessment demonstrated mild thickening with TV 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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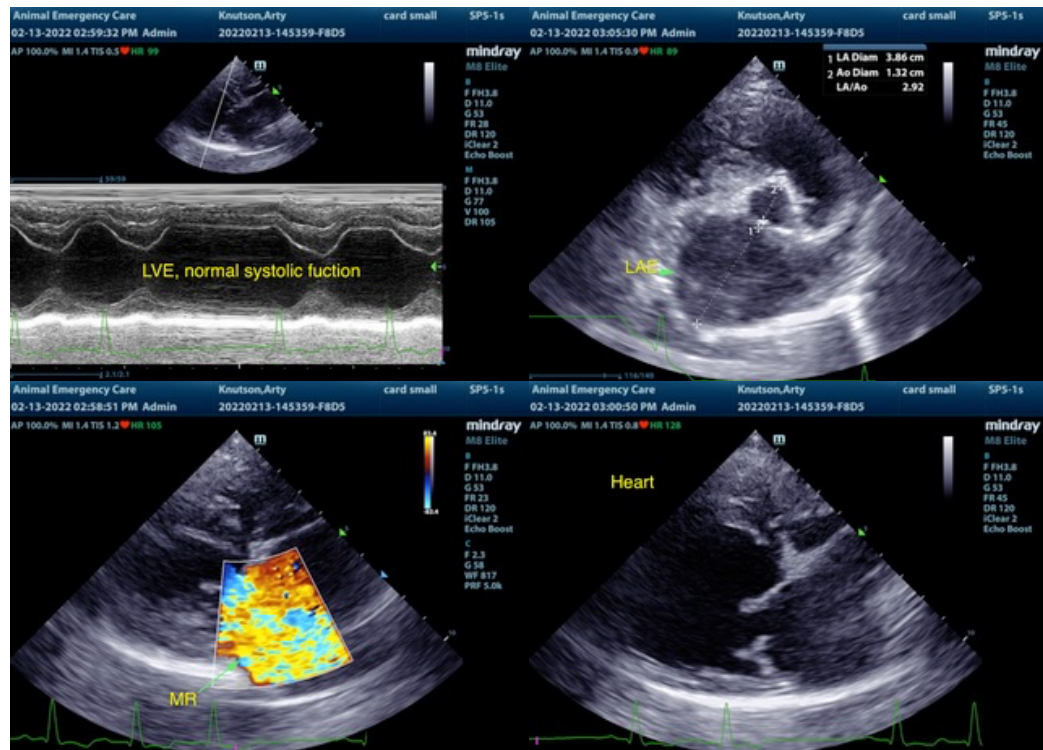
**ULTRASONOGRAPHIC FINDINGS**

- Chronic mitral valve disease – consistent with ACVIM Stage C
- TV insufficiency – estimated pulmonary pressure gradient (approximately 36 mmHg) consistent with mild elevated pulmonary pressure.
- Right atrium/right atrioventricular groove mass

**INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS**

The moderate to severe LA enlargement along with concurrent increased LV volume are consistent with left heart volume overload and indicate the current risk of complication secondary to mitral valve insufficiency is elevated and consistent with radiographic cardiogenic pulmonary edema. Pimobendan 0.3 mg/kg PO BID along with current diuretic therapy at lowest effective does recommended. ACE inhibitor medication may be considered if BP is >130 (not advised if BP is <130).

This patient is at continued risk for episodes of CHF and potential development of malignant arrhythmias. Exercise restriction is advised. Continued monitoring of ECG, BP and renal parameters recommended going forward. Referral for further assessment of the mass in the area of the right atrium and right atrioventricular groove is recommended if possible. Otherwise, sonographic monitoring of the mass along with overall heart with initial recheck in 4 weeks recommended.

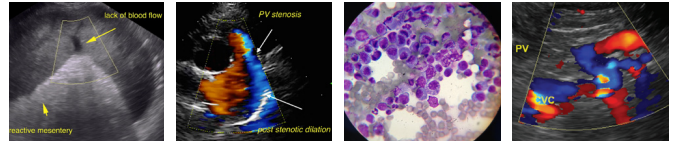


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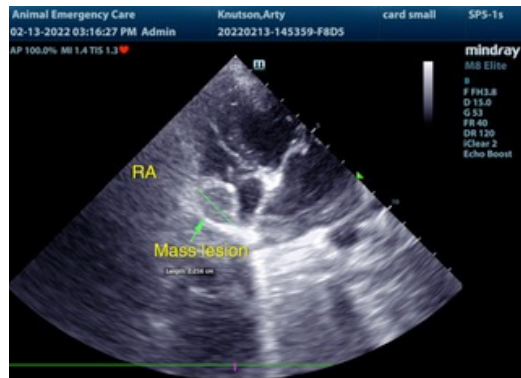
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The information and recommendations provided are based on the images presented by the referring veterinarian. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

**AGE**

11 Years

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.

**WEIGHT**

13 kg

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