



## PATIENT PRESENTING CLINICAL SIGNS

**PATIENT**  
Leo Davis

**SPECIES**  
Canine

**BREED**  
PitBull

**SEX**  
Neutered Male

**AGE**  
1 Year

**WEIGHT**  
25 kg

**INTERPRETED BY**  
Eric Lindquist, DMV  
DABVP, Cert. IVUSS

**IMAGING PERFORMED BY**  
Dr. Callihan

**HOSPITAL NAME**  
Animal Emergency  
Care

**REFERRING VET**  
Dr. Bailey

**INVOICE**  
13022

**DATE**  
12/13/21

History: S: Patient presents for: Owner adopted 2 weeks ago from Texas. Heartworm positive, treated with slow kill regimen (Heartgard + 30 days of Doxycycline). Doxycycline finished a week ago and owner gave another Heartgard then as well. Intermittent hacking cough increasing in frequency past few days. Breathing faster today too, mild runny nose. Good attitude/appetite. Owner worries being too active. Only dog exposure is other dog in house, went to dog park one night but only dog there. Other dog in house not coughing. History of: Heartworm disease No known medical issues or sensitivities Medications: Heartgard and Doxycycline D/C a week ago; Diet = Blue Wilderness chicken grain-free

Abnormal PE/Chem/CBC/UA Results: EENT - Hacking cough on tracheal palpation Lymph nodes - No peripheral lymphadenopathy Thoracic auscultation - Tachypneic; no murmur or arrhythmia; femoral pulses strong and synchronous with heart sounds; lungs clear throughout A: Coughing, tachypnea - Rads = Caudodorsal parynchymal pattern - dilated pulmonary lobar arteries - CBC = Eosinophilia 12%, WBC WNL 13,100

## 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			1.3	1.3	36	66	0.1
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		1.58	1.02	--	4.1	3.52	--

### Cardiac Presentation

The echocardiogram in this patient demonstrated normal **left atrial** size based on 3 separate methods of LA evaluation. The cranial and caudal **mitral** valve leaflets presented normal linear structure, extension in systole, and union in diastole with normal kinesis. The **left ventricle** presented thicknesses with linear contour and was not dilated nor restricted. 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 laminar flow and subjective structural integrity. The **right atrium** and auricle revealed normal size, structure and content. No evidence of masses was noted. **Tricuspid** valvular assessment demonstrated adequate linear morphology and kinesis. The **right ventricle** was of normal size (1/3 diameter of LV), chordae structure, myocardial echogenicity and thickness. The



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immediate post valvular **pulmonary** artery was unremarkable with mild pulmonary artery dilation present. A cluster of adult worms appeared to present, measuring approximately 4.0 cm, primarily in the main branch of the pulmonary artery. Trivial pulmonic insufficiency noted. No visible **pericardial** or free pleura fluid was noted. The cranial **mediastinum and pericardial and extra-cardiac regions** were free of masses in the visible window.

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**ULTRASONOGRAPHIC FINDINGS**

**BREED**

PitBull

- Adult heartworm cluster in the main pulmonary artery. Compensated right heart changes with mild post valvular pulmonary artery dilation

**SEX**

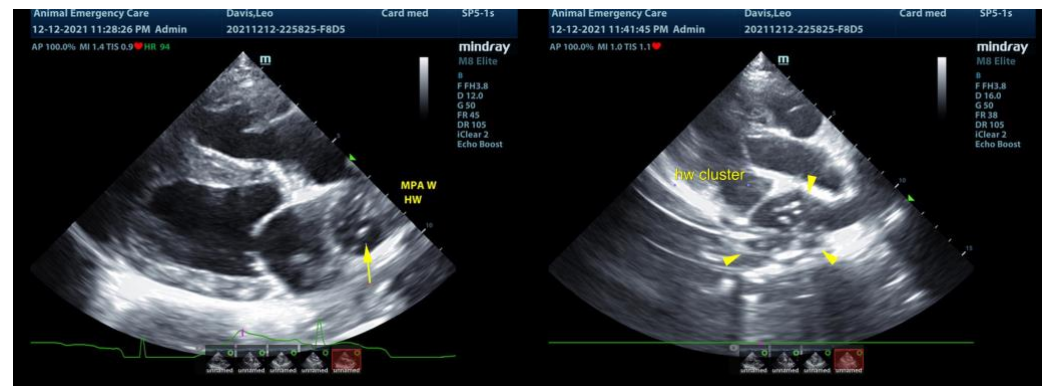
Basket retrieval or slow kill approach recommended. Even though there is coughing in this patient, this is not owing to heart disease, but primary respiratory disease, likely owing to worm burden.

Neutered Male

**INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS**

**AGE**

1 Year

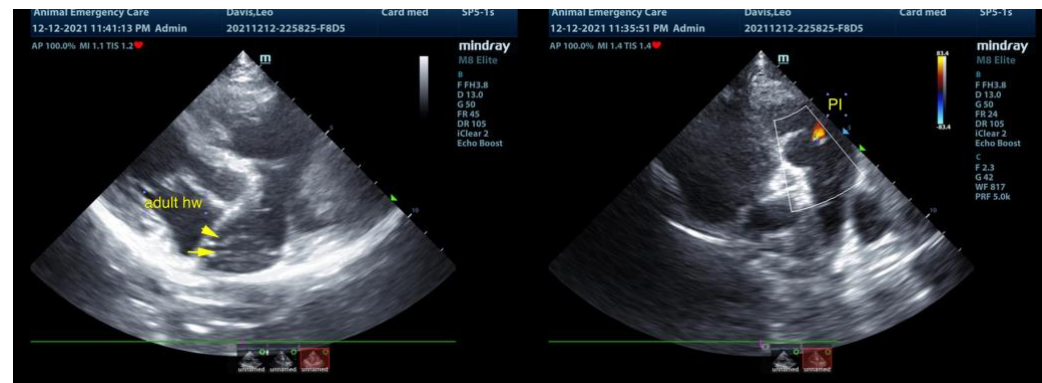


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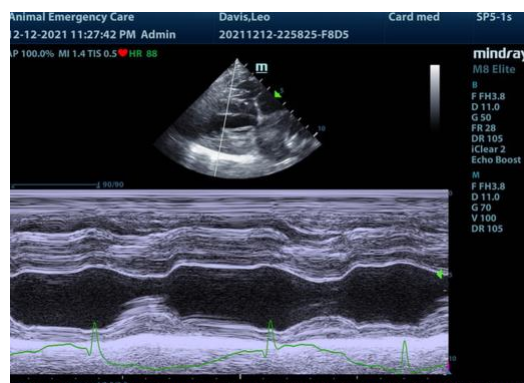
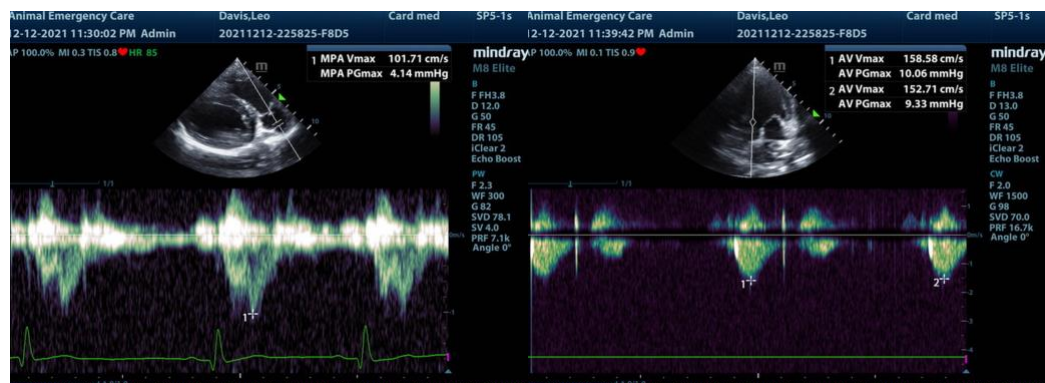
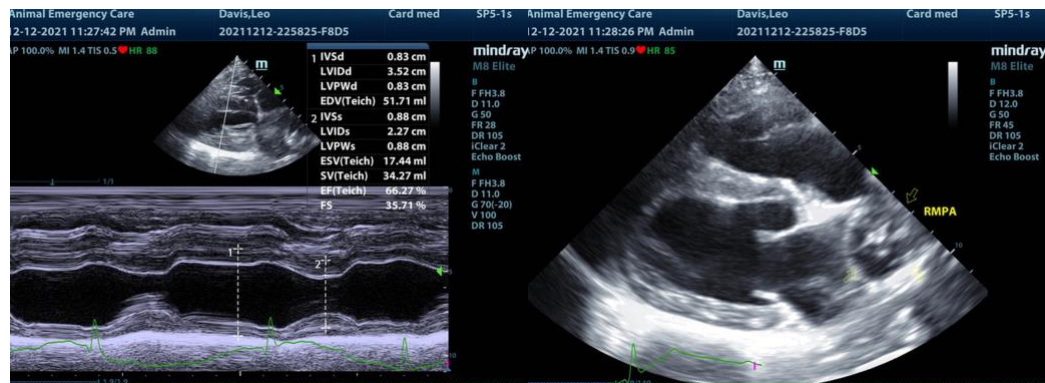
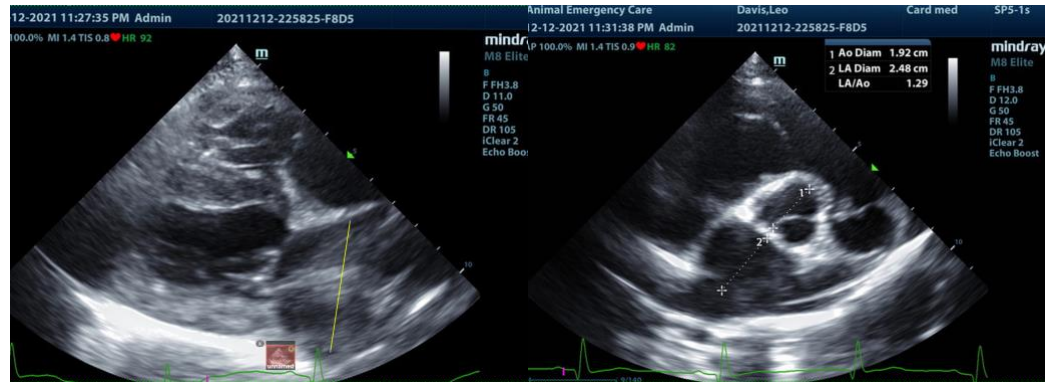
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**The information and recommendations provided are based on the images presented by the referring veterinarian. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.**

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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.

**BREED**

PitBull

**Eric Lindquist**, DMV, DABVP, Cert. IVUSS, CEO of SonoPath.com  
info@SonoPath.com

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