



**PATIENT**

Lily Guidea

**SPECIES**

Canine

**BREED**

Pug

**SEX**

Spayed Female

**AGE**

12 Years 3 Months

**WEIGHT**

19.6 pounds

**INTERPRETED BY**

R. McKenzie Daniel,  
DVM, DABVP (Canine  
/ Feline Practice)

**IMAGING PERFORMED BY**

Rebecca Hamilton

**HOSPITAL NAME**

Animal Care Center of  
Flanders

**REFERRING VET**

Dr. Hallihan

**INVOICE**

14102

**DATE**

03/06/26

**PRESENTING CLINICAL SIGNS**

- worsening cough, R/O heart disease, pulmonary hypertension
- inc. Respiratory noise (brachiocephalic)
- coughing since 11/25, slight Inc. VHS on chest rads 10.6, patchy interstitial pattern lungs
- meds: prednisone 5 mg 1.5 tabs BId - tapering dose, doxy 100 mg 1/2 BID

Abnormal PE/Chem/CBC/UA Results: AlkP Inc 241, triglyc 198, CK 220

**ULTRASONOGRAPHIC EXAMINATION OF THE HEART**

CANINE CARDIAC PARAMETERS	MR VMAX (m/s)	TR VMAX (m/s)	LA/AO (M-Mode)	LA/AO (Heart Base; Swe)	FS (%)	EF (%)	EPSS (cm)
NORMAL PARAMETER	4.5-5.5	<2.7	1.3	Up to 1.6	28-40	40-100	<0.6
PATIENT	--	2.3	NM	1.1	55	86	0.1
CANINE CARDIAC PARAMETERS	HR (BPM)	AV VMAX (m/s)	PV MAX (m/s)	BODY WEIGHT (lbs)	LAD LA MAX 4 Chamber	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	NM	1.4	0.93	19.6	2.5	2.8	--

**Cardiac Presentation**

The echocardiogram in this patient demonstrated normal **left atrial** size based on 2 different LA measurement methods. The cranial and caudal **mitral** valve leaflets presented mild thickening consistent with mild endocardiosis. No evidence of valvular prolapse. 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 or chamber overload. **Tricuspid** valvular assessment demonstrated mild thickening with minor TR on doppler. 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 cardiac / pericardial tumors was visible. No evidence of arrhythmia or hepatic congestion.

**ULTRASONOGRAPHIC FINDINGS**



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- Normal cardiac structure/function.
- Mild mitral valve endocardiosis.
- Minor to mild TV insufficiency.

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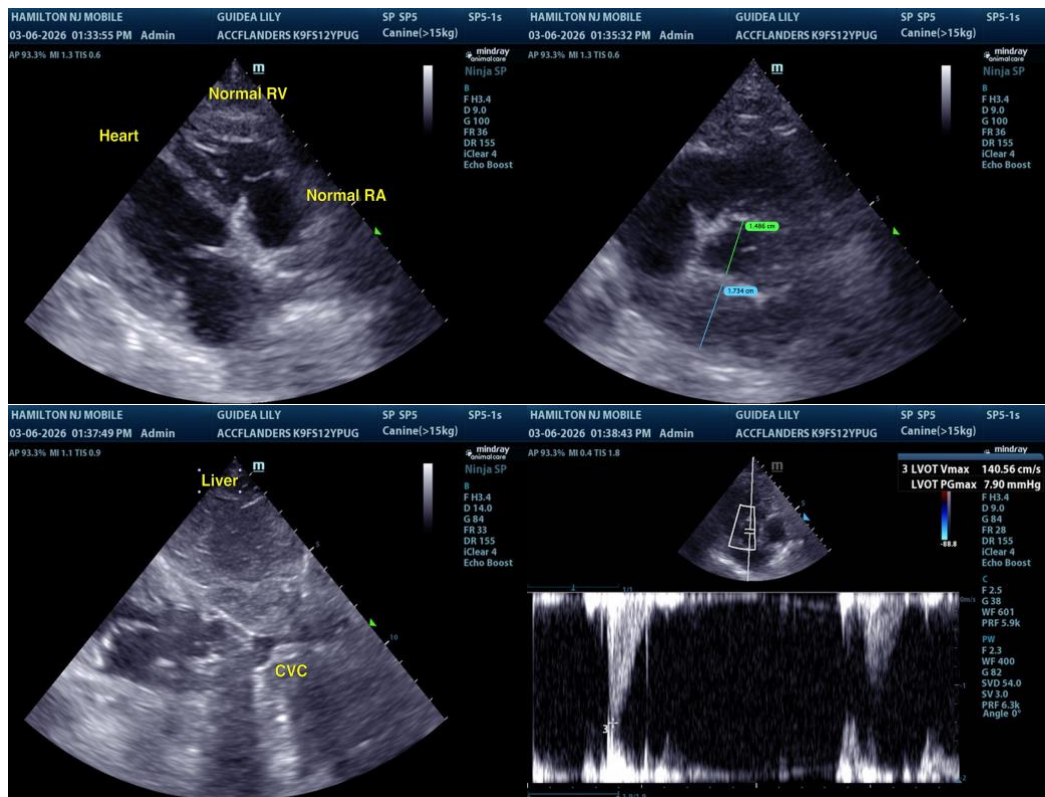
**DATE**

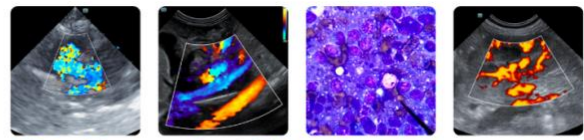
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**INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS**

No evidence of significant clinical issues such as left or right heart chamber enlargement, LV systolic dysfunction or arrhythmia. The measured TR velocity was not overtly consistent with clinical pulmonary hypertension in conjunction with lack of right chamber or pulmonary artery enlargement. The cardiac presentation suggests that the respiratory signs in this patient are likely non-cardiogenic in origin.

Mild mitral valve insufficiency is not definitively visualized and suspected, yet the hemodynamic effects of mitral insufficiency if present are low given lack of LA enlargement. No indication for cardiac medication. Continued respiratory support including therapy for lower airway disease and consideration for antitussive medication (hydrocodone) is recommended. Sonographic monitoring is advised given breed and probable primary lower airway disease. This patient will remain at increased risk for pulmonary hypertension going forward.





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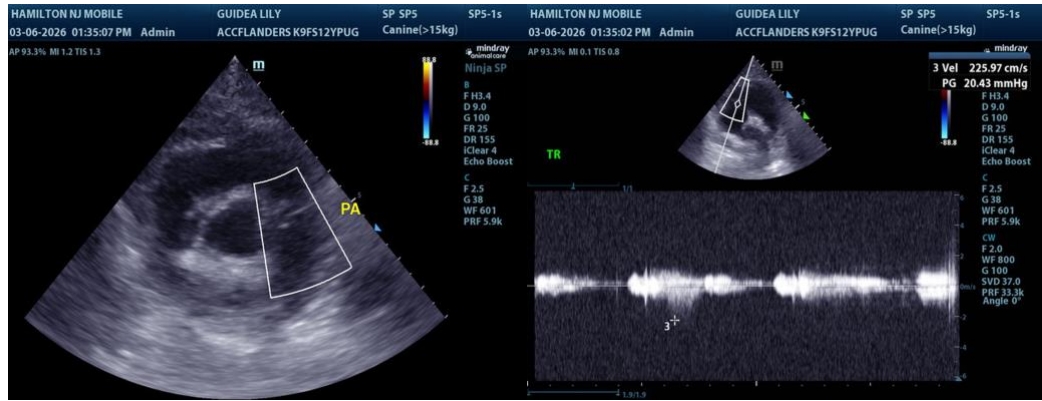
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The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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)

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