



**PATIENT**

Mo Burbank

**SPECIES**

Canine

**BREED**

Pug

**SEX**

Neutered male

**AGE**

14 years

**WEIGHT**

32.5 lbs

**INTERPRETED BY**

Eric Lindquist, DMV  
DABVP, Cert. IVUSS

**IMAGING PERFORMED BY**

JK

**HOSPITAL NAME**

Hamburg VC

**REFERRING VET**

Dr. DenHeyer

**PRESENTING CLINICAL SIGNS**

History: Grade 2/6 murmur, coughing  
Abnormal PE/Chem/CBC/UA Results: BP 144/77(100), 135/87(102), 141/689(93). Xray slight cardiomegaly and bronchial pattern

**ULTRASONOGRAPHIC EXAMINATION OF THE HEART**

The **echocardiogram** presented a prominent **right heart** with mild **right ventricular** hypertrophy and mild **right atrial** enlargement. There was no **tricuspid** insufficiency. No evidence of neoplasia was noted in the right auricle, or elsewhere in the heart. The **pulmonary artery** was uniformly prominent with mildly depressed pulmonic velocity measured on PW Doppler. No overt heartworms were noted in the main or visible deep pulmonary arteries. Yet, theoretically heartworms could be present in the deep pulmonary vasculature out of visible sonographic range. More likely, however, this prominent right heart is due to excessive intra-thoracic pressures caused by chronic respiratory disease or potentially excessive intra-thoracic fat (Pickwickian syndrome). The **left heart** demonstrated a linear **ventricular septum**. Contractility was functionally adequate demonstrated by the FS% measurement. The **mitral valve** revealed insufficiency. However, there was no significant **left atrial** dilation was noted. The **left ventricular outflow** demonstrated normal flow patterns and velocities through the aortic valve. No evidence of tumor, pericardial or pleural effusion was noted. The visible **extra-cardiac** tissues were uniformly linear without evidence of masses, infiltrative or inflammatory mediastinal tissue. No evident arrhythmic activity was noted during the exam. The echocardiogram in this patient revealed chronic bronchial pattern. Rapid view of the **liver** revealed multiple masses with surrounding free fluid.

CANINE CARDIAC PARAMETERS	MR VMAX (m/s)	TR VMAX (m/s)	LA/AO (Boon method)	LA/AO (Heart Base;)	FS (%)	EF (%)	EPSS (cm)
NORMAL PARAMETER	4.5-5.5	<2.7	1.3	<1.6	28-40	40-100	<0.6
PATIENT	> 5.0	2.5	1.1		45		0.1
CANINE CARDIAC PARAMETERS	HR (BPM)	AV VMAX (m/s)	PV MAX (m/s)	BODY WEIGHT	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			0.9	32.5 lbs	3.0	3.0	

**INVOICE**

43164

**DATE**

3/7/23

**ULTRASONOGRAPHIC FINDINGS**

Cor pulmonale with mitral insufficiency, compensated.  
Mild right atrial enlargement.  
Hepatic masses with free fluid, incidental finding.



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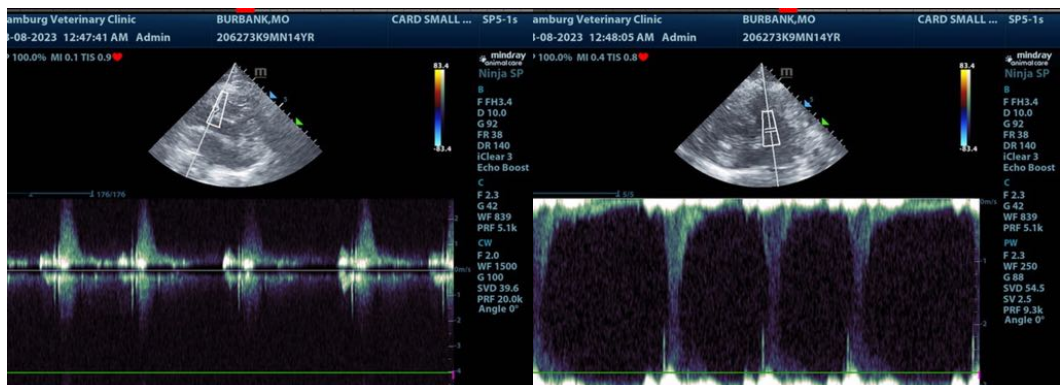
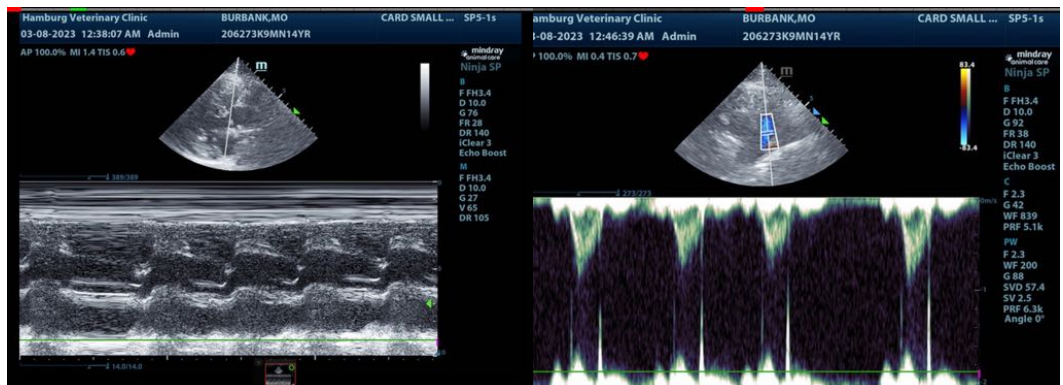
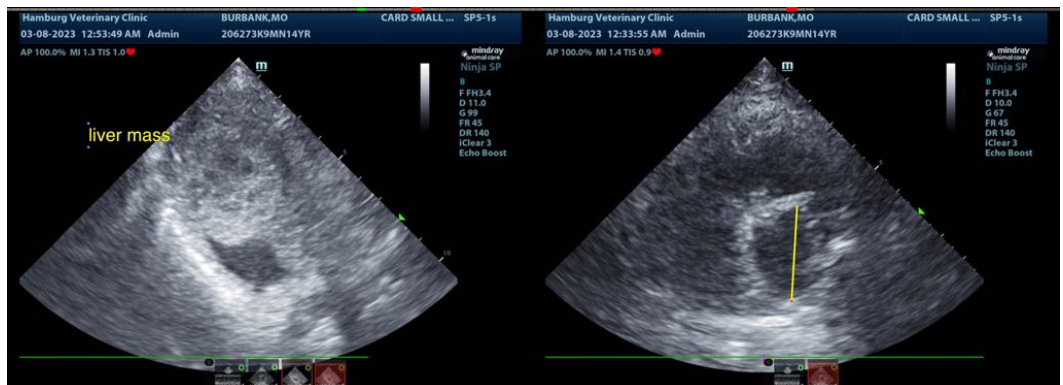
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**INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS**

There was no evidence of volume overload of the left atrium. Full abdominal sonogram is recommended. No cardiac medications are recommended at this time.



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.



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

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