



**PATIENT**

Weiner Sanders

**SPECIES**

Canine

**BREED**

Dachshund

**SEX**

Male Neutered

**AGE**

15 years

**WEIGHT**

13.6lbs

**INTERPRETED BY**

Maggie Machen Lamy,  
DVM, DACVIM  
(Cardiology)

**IMAGING PERFORMED BY**

Megan Spatz

**HOSPITAL NAME**

Boren Veterinary  
Medical Teaching  
Hospital

**REFERRING VET**

Dr. Fentiman

**INVOICE**

29534

**DATE**

3/10/23

**PRESENTING CLINICAL SIGNS**

History: Presented to OSU-VTH ophthalmology service for cataract evaluation. Diagnosed with CHF 2-3 years ago and is being managed on Benazepril (1/2 tab of 12.5mg q24h), Lasix (1 tab of 10mg q24h). He had a single episode of elevated kidney values around 1 year ago and no such episode was noticed afterwards. As per the owner, he is UTD on vaccine and preventatives. He has a history of developing clinical signs vomiting, and anorexia a couple of days after Flurbiprofen. BP: 168mmHg.

**ECHOCARDIOGRAM FINDINGS**

2D, m-mode, color flow and doppler imaging is available. Mild diffuse thickening of mitral valve leaflets with no prolapse into the left atrial lumen. No mitral regurgitation with normal left atrial dimension. Normal LV diameter with adequate myocardial function. The tricuspid valve appears mildly thickened with mild tricuspid regurgitation. Velocity consistent with early pulmonary hypertension. Normal right atrial and ventricular diameter and morphology. The MPA is prominent. The pulmonic and aortic valves are normal in morphology and mobility. Normal pulmonic and aortic outflow velocities with laminar flow. No obvious aortic or pulmonic insufficiency. No pericardial or pleural effusion noted. No obvious cardiac masses.

**CARDIAC CHART**

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	NA	3.0	NM	1.1	60	91	0.3
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	1.5	0.93	6.2	1.4	2.0	0.8
*Normal chamber parameters expressed as a mean value (SD)				3	1.27 (5.3)	2.46 (2.46)	1.36 (5.5)
<b>BODY WEIGHT DEPENDENT PARAMETERS</b>				5	1.40 (4.5)	2.74 (5.2)	1.60 (4.7)
<i>*Note: All measurements based upon multi-modal images and methods. An average value is reported.</i>				10	1.50 (3.8)	3.27 (3.5)	2.06 (3.1)
				15	1.83 (2.0)	3.71 (2.4)	2.43 (2.1)
				20	2.02 (1.9)	4.14 (2.2)	2.80 (2.0)
				25	2.18 (2.4)	4.48 (2.9)	3.10 (2.5)
				30	2.33 (3.3)	4.83 (3.9)	3.39 (3.4)
				35	2.48 (4.3)	5.17 (5.0)	3.69 (4.5)
				40	2.62 (5.2)	5.48 (6.1)	3.96 (5.4)
				50	2.88 (7.1)	6.07 (8.3)	4.46 (7.4)

**INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS**

The only abnormality identified is mild tricuspid regurgitation. A lack of left or right atrial enlargement indicates the current risk for complication is low. The left heart appears normal, without significant MR or structural changes. There is evidence of early pulmonary hypertension which is likely due to respiratory disease in this predisposed patient, although no symptoms are mentioned. No additional issues are noted in this study.



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Given these findings, a **history of CHF is essentially ruled out** and cardiac medications can be discontinued. Given the breed and finding of mild pulmonary hypertension, there is likely some component of underlying airway disease in this senior patient. Monitor for any signs for recurrent respiratory issues, such as a cough or labored breathing, and chest radiographs are strongly recommended in this instance. Signs of PAH progressing include exertional dyspnea or collapse/syncope. Maximizing cough control is the best way to combat development of pulmonary hypertension in the long run, utilizing cough suppressants, intermittent antibiotics/steroid taper for acute flares, bronchodilators, etc. If refractory, advanced evaluation should be considered (TTW/BAL).

Assessment of progression in the future will help predict long term prognosis, which is highly variable at this stage. Omega fatty acid supplementation and mild salt restriction may be of some long-term benefit. Monitor for development of a cough, labored breathing, exercise intolerance or collapse episodes.

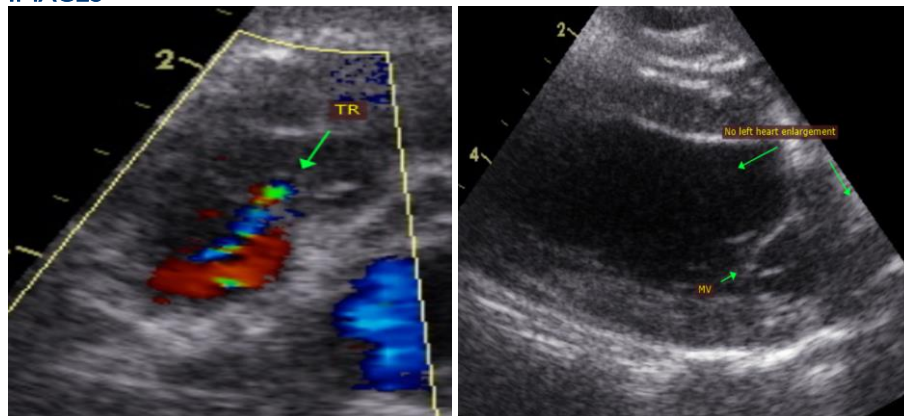
Anesthetic risk is considered mild if needed. Pre-oxygenate for 5-10 minutes prior to induction and recover in O<sub>2</sub> due to potential for hypoxia.

## PLAN

Discontinue Lasix and Benazepril as discussed. Baseline BP is recommended in any senior patient. If any respiratory signs develop, treatment for primary respiratory disease is recommended.

Recommend conservative monitoring with a recheck echocardiogram in 6-12 months, sooner if any development of clinical signs.

## IMAGES



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. This report was generated using transcription software, and minor dictation errors may be present. 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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