



## PATIENT

Tee Tee Reiser

## PRESENTING CLINICAL SIGNS

History: Grade 5/6 murmur. Two syncopal episodes in the past 24h; suspect vaso-vagal. CXR show mild cardiomegaly.

## SPECIES

Canine

## ECHOCARDIOGRAM FINDINGS

2D, m-mode, color flow and doppler imaging is available. Diffuse thickening of mitral valve leaflets with mild prolapse into the left atrial lumen. Mild to moderate anterior-directed mitral regurgitation with mild left atrial dilation. Normal MR velocity. Normal LV diameter with adequate myocardial function. The tricuspid valve appears mildly thickened with mild to moderate tricuspid regurgitation. Velocity consistent with early PAH. Normal right atrial and ventricular diameter. 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.

## BREED

Shih Tzu

## SEX

FS

## CARDIAC CHART

### AGE

14 years

### WEIGHT

5kgs

### INTERPRETED BY

Maggie Machen Lamy,  
DVM, DACVIM  
(Cardiology)

### IMAGING PERFORMED BY

C. Belan, DVM

### HOSPITAL NAME

McKnight 24h Animal  
Hospital

### REFERRING VET

Dr. Malaguti

### INVOICE

24371

### DATE

5/24/22

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	5.1	3.1	1.5	1.4	44	78	0.25
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	126	1.2	5.6	5	1.7	2.3	1.3
*Normal chamber parameters expressed as a mean value (SD)							
<b>BODY WEIGHT DEPENDENT PARAMETERS</b>							
*Note: All measurements based upon multi-modal images and methods. An average value is reported.							
Adapted from June Boon, Veterinary Echocardiography, 1998							
Rishniw M and Hollis NE, J Vet Intern Med 2000; 14:429-435							
Hansson et al, Vet Rad and Ultrasound 2002							
Bonagura et al. Echocardiography: principles of interpretation, Vet Clin North Am 15:1177, 1995							
				3	1.27 (5.3)	2.46 (2.46)	1.36 (5.5)
				5	1.40 (4.5)	2.74 (5.2)	1.60 (4.7)
				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

Chronic degenerative valve disease causing mild to moderate mitral and tricuspid regurgitation. Lack of significant left atrial enlargement indicates the current risk for complication is low. Early pulmonary hypertension is noted which is of unknown significance in a dog without reported respiratory signs. No additional issues are noted in this study.

These findings would suggest structural disease is unlikely to be the cause of the recent episodes. While syncope can certainly be a sign of pulmonary hypertension, only mild changes are seen here; consider correlation with activity, cough, etc. Other possibilities should be considered



## PATIENT

Tee Tee Reiser

including an intermittent arrhythmia, blood pressure swings such as an adrenal tumor, vaso-vagal event, etc. Full systemic evaluation is advised.

## SPECIES

Canine

In a dog without significant left atrial enlargement, no cardiac medications are clearly indicated. Assessment of progression in the future will help predict long term prognosis, which is highly variable at this stage (B1). 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.

## BREED

Shih Tzu

Anesthetic risk is considered mild if needed. Cardiac protective drug choices (opioid/benzodiazepine premedication, propofol or alfaxalone induction, isoflurane gas) are recommended. Pre-oxygenate for 5-10 minutes prior to induction. Monitor for arrhythmias, hypotension, and hypoxia both intra and post-operatively and intervene as necessary. Mild IV fluid restriction is recommended to avoid fluid overload. Avoid heart rate stimulating drugs such as atropine unless clinically indicated.

## SEX

FS

## AGE

14 years

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

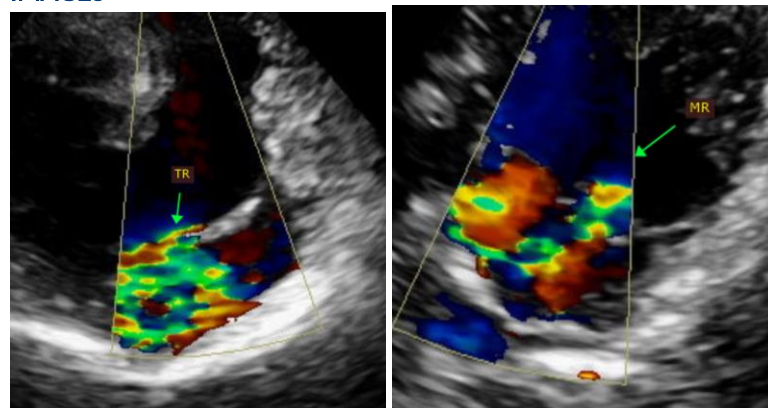
## WEIGHT

5kgs

## IMAGES

## INTERPRETED BY

Maggie Machen Lamy,  
DVM, DACVIM  
(Cardiology)

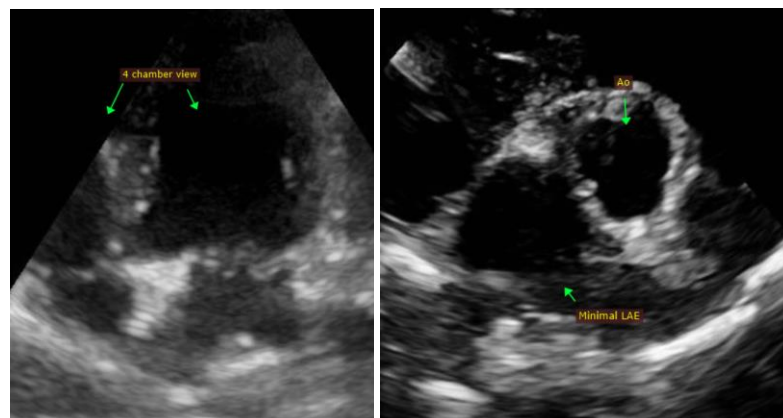


## IMAGING PERFORMED BY

C. Belan, DVM

## HOSPITAL NAME

McKnight 24h Animal  
Hospital



## REFERRING VET

Dr. Malaguti

## INVOICE

24371

## DATE

5/24/22



**PATIENT**

Tee Tee Reiser

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.

**SPECIES**

Canine

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**

Shih Tzu

**Maggie Machen Lamy, DVM**  
Diplomate of the American College of Veterinary Internal Medicine (Cardiology)  
info@sonopath.com

**SEX**

FS

**AGE**

14 years

**WEIGHT**

5kgs

**INTERPRETED BY**

Maggie Machen Lamy,  
DVM, DACVIM  
(Cardiology)

**IMAGING  
PERFORMED BY**

C. Belan, DVM

**HOSPITAL NAME**

McKnight 24h Animal  
Hospital

**REFERRING VET**

Dr. Malaguti

**INVOICE**

24371

**DATE**

5/24/22