



PATIENT

Bailey Castilho

SPECIES

Canine

BREED

Shih Tzu

SEX

Female Spayed

AGE

12 years

WEIGHT

13.7lbs

INTERPRETED BY

Maggie Machen Lamy,
DVM DACVIM
(Cardiology)

IMAGING PERFORMED BY

Kelly Reschny, RVT

HOSPITAL NAME

Snelgrove Veterinary
Service

REFERRING VET

Dr. Vimalarajah

INVOICE

30234

DATE

4/13/23

PRESENTING CLINICAL SIGNS

History: Presented for sudden episode of collapse. History of heart murmur, gr IV-V/VI on today's exam, intermittent coughing at home, breathing seems labored. BP: 240mmHg.
-Current medications: Furosemide 20mg 1/2-tab BID, Benazepril 5mg - 1/4-tab BID, Pimobendan 0.625mg BID.

-Radiographs: Moderate cardiac enlargement with area at right atrium suggestive of marked enlargement vs mass effect moderate bronchointerstitial pattern to lung fields and hilus.

ELECTROCARDIOGRAPHIC FINDINGS *Note: Single lead ECGs are evaluated as a rhythm strip. Morphology/MEA cannot be definitively commented on.

A single lead ECG is available; 50mm/s, 20mm/mV. The average heart rate is 150bpm (range 136-176bpm). The rhythm is sinus in origin, with a p for every QRS complex and vice versa. The P and QRS are inverted suggesting atypical device orientation. No ectopic beats, pauses or other dysrhythmias observed.
ECG diagnosis: Respiratory sinus arrhythmia.

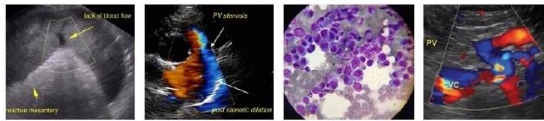
ECHOCARDIOGRAM FINDINGS

2D, m-mode, color flow and doppler imaging is available. Severe diffuse nodular thickening of mitral valve leaflets. Mild prolapse into the left atrial lumen. Severe eccentric mitral regurgitation with severe left atrial enlargement. Severe LV dilation with increased sphericity and hyperdynamic myocardial function. Evidence of volume overload. The tricuspid valve appears mildly thickened with septal prolapse and moderate tricuspid regurgitation. Normal TR velocity. Mild right heart enlargement. The pulmonic and aortic valves appear normal in appearance and mobility. Normal pulmonic and aortic outflow velocities. No aortic or pulmonic insufficiency noted. No pericardial or pleural effusion seen.

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	5.3	2.5	2.2	2.2	42	74	NM
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	155	1.1	0.5	6.2	2.4	3.8	2.2
*Normal chamber parameters expressed as a mean value (SD)				3	1.27 (5.3)	2.46 (2.46)	1.36 (5.5)
BODY WEIGHT DEPENDENT PARAMETERS				5	1.40 (4.5)	2.74 (5.2)	1.60 (4.7)
*Note: All measurements based upon multi-modal images and methods. An average value is reported.				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)

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



PATIENT

Bailey Castilho

SPECIES

Canine

BREED

Shih Tzu

SEX

Female Spayed

AGE

12 years

WEIGHT

13.7lbs

INTERPRETED BY

Maggie Machen Lamy,
DVM DACVIM
(Cardiology)

IMAGING PERFORMED BY

Kelly Reschny, RVT

HOSPITAL NAME

Snelgrove Veterinary
Service

REFERRING VET

Dr. Vimalarajah

INVOICE

30234

DATE

4/13/23

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

Chronic degenerative valve disease causing severe mitral and moderate tricuspid regurgitation. Severe left atrial and ventricular enlargement indicates there is an elevated risk for spontaneous congestive heart failure. No additional issues are identified, such as significant pulmonary hypertension. The ECG is unremarkable with a normal sinus rhythm.

Syncope in this patient is most likely cardiogenic in origin. Possible causes include poor forward blood flow leading to hypoxia, early CHF, severe pulmonary hypertension (not seen), an arrhythmia and/or blood pressure swings. In light of severity of disease on echocardiogram, there is concern this patient is progressing to early congestive heart failure and full lifelong cardiac supportive therapy is warranted as below. If the episodes continue despite therapy, other causes should be considered. The BP is also markedly elevated, and if this persists this will clearly warrant therapy and further evaluation. Long term prognosis is guarded to poor; however, most dogs are able to maintain a good QOL on medications for an average of 8-12 months.

Monitoring of sleeping respiratory rates will be paramount to screen for congestive heart failure at home. Omega fatty acid supplementation and mild salt restriction may also be of some long-term benefit. Monitor for development of a cough, labored breathing, exercise intolerance or worsening collapse episodes in the future.

Elective anesthesia is not advised, as there is high risk for complication. Risk: benefit ratio should be considered. Consider consultation with and/or referral to a facility with an anesthesiologist. Should you elect to proceed, cardiac protective drug choices (opioid/benzodiazepine premedication, propofol or alfaxalone induction, iso or sevoflurane gas) are recommended. Pre-oxygenate for 5-10 minutes prior to induction and recover in O2 cage. Monitor for arrhythmias, hypotension, and hypoxia both intra and post-operatively and intervene as necessary. Moderate IV fluid restriction is recommended to avoid fluid overload, while considering comorbidities, hydration status, BP, etc. Avoid heart rate stimulating drugs such as atropine unless clinically indicated.

PLAN

Screening BP recommended. Administer furosemide 1mg/kg PO q12h. Administer Pimobendan 0.3mg/kg PO q12h. Assuming BP >150mmHg, administer ACE-inhibitor Enalapril or Benazepril 0.5mg/kg PO q12h. Institute Spironolactone 0.5mg/kg PO q12h. If exertional syncope persists, highly recommend further evaluation.

Monitor SRRs at home. Monitor renal values/BP in 10-14 days, then every 3-4 months while on diuretics. If persistent hypertension, dual therapy and systemic work up recommended.

Recommend conservative monitoring with a recheck echocardiogram in 4-6 months, sooner if any development of associated clinical signs occurs in the interim.



PATIENT

Bailey Castilho

SPECIES

Canine

BREED

Shih Tzu

SEX

Female Spayed

AGE

12 years

WEIGHT

13.7lbs

INTERPRETED BY

Maggie Machen Lamy,
DVM DACVIM
(Cardiology)

**IMAGING
PERFORMED BY**

Kelly Reschny, RVT

HOSPITAL NAME

Snelgrove Veterinary
Service

REFERRING VET

Dr. Vimalarajah

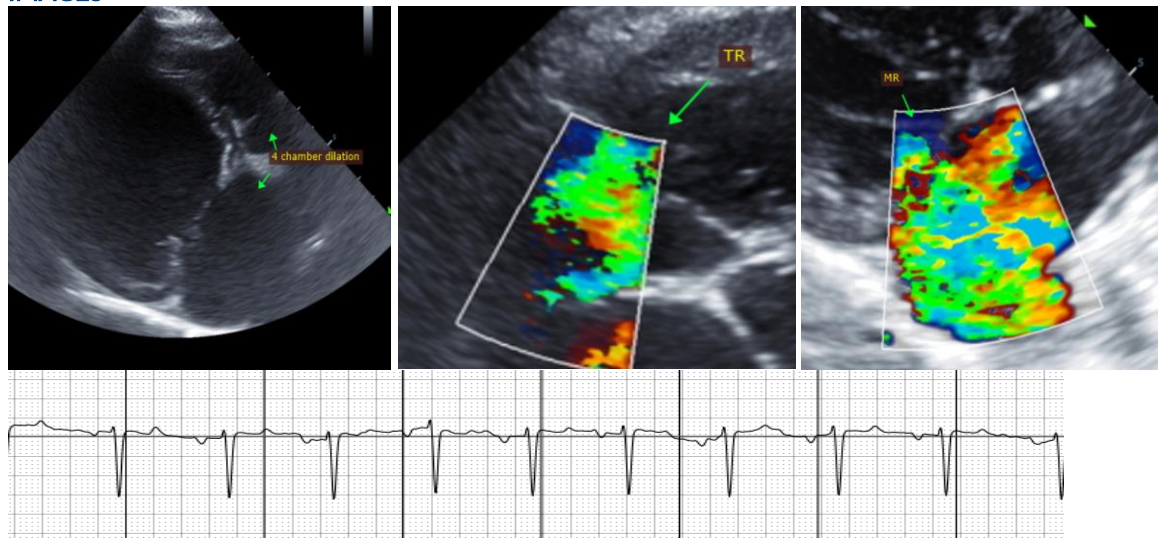
INVOICE

30234

DATE

4/13/23

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.

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