



PATIENT

Cabo Budde

SPECIES

Canine

BREED

Terrier Mix

SEX

Female Spayed

AGE

1.10 years

WEIGHT

45.8lbs

INTERPRETED BY

Maggie Machen Lamy,
DVM, DACVIM
(Cardiology)

IMAGING PERFORMED BY

T. Tenorio, DVM

HOSPITAL NAME

Wauwatosa Vet

REFERRING VET

Dr. Shimon

INVOICE

25196

DATE

7/7/22

PRESENTING CLINICAL SIGNS

History: Grade 2-3/6 systolic murmur was ausculted. Elevated ProBNP. Doing well at home.
-Reported diet: A variety including Acana, Fromm, etc.
-Abnormal PE/Chem/CBC/UA Results: ProBNP 2030 (0-900).
Sedation: Butorphanol

RADIOGRAPHIC FINDINGS *NOTE: Images submitted for supplemental cardiac information only.
Right-sided cardiomegaly with a bulge in the region of the MPA. No obvious evidence of CHF.

ECHOCARDIOGRAM FINDINGS

2D, m-mode, color flow and doppler imaging is available. Normal mitral valve leaflets with no obvious prolapse into the left atrial lumen. No obvious mitral regurgitation. Mild left atrial dimension. The LV is dilated with moderate to severe myocardial dysfunction. The LV wall thicknesses are decreased. The tricuspid valve appears mildly elongated with mild insufficiency seen. Elevated TR velocity. Moderate right atrial dilation. Moderate right ventricular hypertrophy and remodeling indicative of pressure overload. Right ventricular dilation. Pulmonic outflow velocities are elevated at the level of the valve. The pulmonic valve appears severely thickened, tethered and stenotic. There is significant post-stenotic dilation of the main pulmonary artery and branches. Mild pulmonic insufficiency. The aortic valve appears to have normal morphology and mobility. No obvious cardiac shunts are present. No pericardial or pleural effusion noted.

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	4.0	1.2	1.2	17	30	0.8
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	1.4	4.3	20.8	2.3	4.2	3.5
*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)
<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

Two major abnormalities are identified in this study. First, the cause of the murmur is severe valvular pulmonic stenosis. The degree of obstruction is moderate to severe based upon the velocity/pressure gradient across the pulmonic valve (74mmHg) and the secondary hypertrophy and remodeling of the right ventricle. There is significant RA dilation and mild TR with mild tricuspid valve thickening (likely dysplasia). The risk for right-sided CHF in the future is elevated



PATIENT

Cabo Budde

SPECIES

Canine

BREED

Terrier Mix

SEX

Female Spayed

AGE

1.10 years

WEIGHT

45.8lbs

INTERPRETED BY

Maggie Machen Lamy,
DVM, DACVIM
(Cardiology)

IMAGING PERFORMED BY

T. Tenorio, DVM

HOSPITAL NAME

Wauwatosa Vet

REFERRING VET

Dr. Shimon

INVOICE

25196

DATE

7/7/22

and may limit lifespan. As a presumably separate issue, the LV is dilated with significant systolic dysfunction. Given the reported diet history, there is great concern for nutritional cardiomyopathy in this case. Other possibilities can be considered, such as an in utero infection; however, these are considered less likely. An immediate diet change is recommended to a standard traditional option, as these changes may be irreversible. Additionally, supplementation with Taurine is recommended as below.

Referral for balloon valvuloplasty should be considered in this patient as the gold standard therapeutic option for this condition and may improve long term outcome and delay onset of clinical signs (including exertional syncope and right-sided congestive heart failure). If surgery is not elected, this patient's condition will likely limit lifespan, with many severe PS cases developing CHF by mid-life. Regardless, medical management with atenolol is recommended to decrease heart rate and lessen the obstruction as below. That being said, the resting heart rate is low, and should be reassessed without sedation prior to institution. Monitor for development of associated clinical signs (collapse, abdominal distention, cough, labored breathing). Mild exercise restriction is advised.

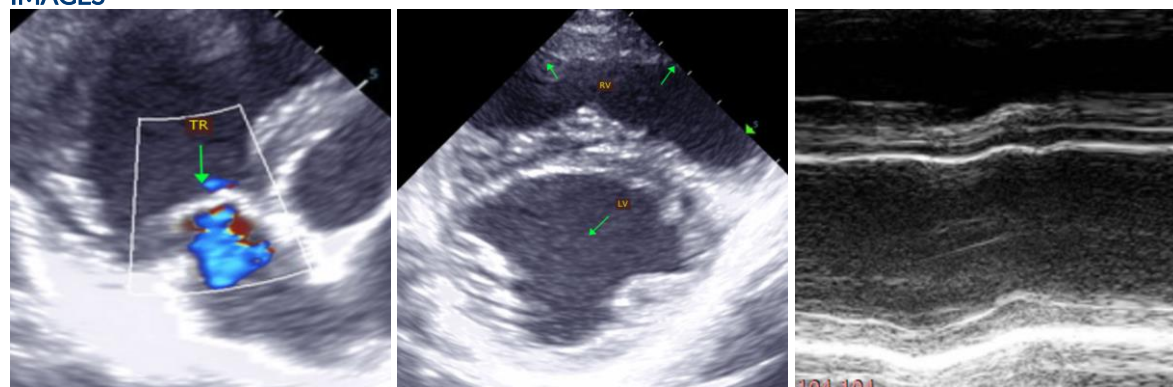
Anesthesia is not advised prior to further evaluation.

PLAN

Immediate diet change to a standard option (Science Diet, Purina, or Hills) as discussed. Institute Taurine 1000mg PO q12h. Assess baseline HR. If >140bpm stressed, institute atenolol to effect: 25mg tabs, ¼ tab PO BID to start (up-titrate to desired effect). Goal is to suppress heart rate <120-140bpm even with stress/activity. Baseline ECG is recommended. Referral for balloon valvuloplasty if desired.

If surgery is declined, recommend recheck echocardiogram in 6 months to assess for progression, response to medication.

IMAGES





PATIENT

Cabo Budde

SPECIES

Canine

BREED

Terrier Mix

SEX

Female Spayed

AGE

1.10 years

WEIGHT

45.8lbs

INTERPRETED BY

Maggie Machen Lamy,
DVM, DACVIM
(Cardiology)

**IMAGING
PERFORMED BY**

T. Tenorio, DVM

HOSPITAL NAME

Wauwatosa Vet

REFERRING VET

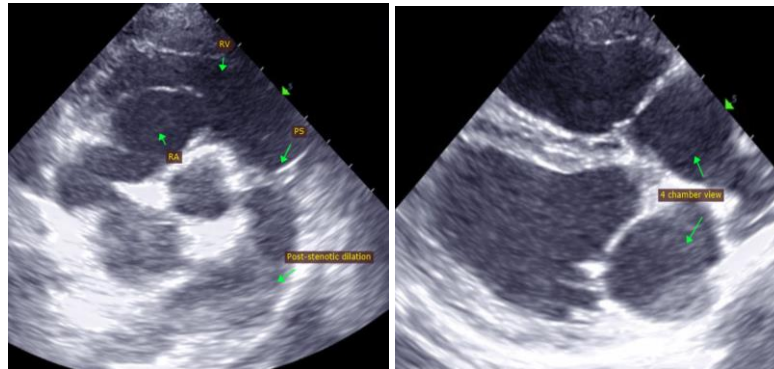
Dr. Shimon

INVOICE

25196

DATE

7/7/22



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