



PATIENT

Negri Santiago

SPECIES

Canine

BREED

Mix

SEX

Female Spayed

AGE

11 years

WEIGHT

30.6lbs

INTERPRETED BY

Maggie Machen Lamy,
DVM, DACVIM
(Cardiology)

IMAGING PERFORMED BY

G. Ferrer, DVM

HOSPITAL NAME

Paseos Veterinary
Center

REFERRING VET

Dr. Ferrer

INVOICE

31561

DATE

6/27/23

PRESENTING CLINICAL SIGNS

History: Presented for a cough. Diagnosed previously (several yrs ago) with a heart murmur and an echocardiogram was performed elsewhere and pt was started with Vetmedin 2.5mg BID. Pt has been doing well but recently started to have a forceful coughing and abnormal breathing. Grade 4/6 heart murmur.

Abnormal PE/Chem/CBC/UA Results: Raspy lungs sounds with possibly some crackles. Very sensitive on tracheal palpation with coughing and hacking (honking cough).

RADIOGRAPHIC FINDINGS *NOTE: Images submitted for supplemental cardiac information only. Cardiomegaly with LA dilation. No obvious evidence of CHF.

ECHOCARDIOGRAM FINDINGS

2D, m-mode, color flow and doppler imaging is available. Diffuse thickening of mitral valve leaflets (anterior>>posterior) with mild prolapse into the left atrial lumen. Moderate eccentric mitral regurgitation with moderate left atrial dilation. Normal MR velocity. Moderate LV dilation with adequate myocardial function. The tricuspid valve appears mildly thickened with mild tricuspid regurgitation. Velocity consistent with mild pulmonary hypertension. Mild right atrial and ventricular prominence. The pulmonic and aortic valves are normal in morphology and mobility. Normal pulmonic outflow velocities. Normal aortic outflow velocities. No pulmonic or aortic insufficiency. No pericardial or pleural effusion

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	NM	3.3	NM	1.8	49	96	0.44
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	132	0.8	0.9	13.9	2.8	3.9	2.0
*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



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INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

Chronic degenerative valve disease causing moderate mitral and mild tricuspid regurgitation. Moderate left atrial enlargement indicates low risk for spontaneous congestive heart failure in the near future, however concern for progression is high. Given the combination of valve disease and pulmonary arterial hypertension, continued Pimobendan is certainly recommended as below for both vasodilatory and inotropic benefits. Additionally an ACEI is reasonable pending BP assessment.

Given these findings and the included CXR, the cough/respiratory pattern is **likely primary respiratory in origin** particularly given the PE findings. Mainstem bronchi compression may also be contributing causing a mechanical obstruction. Pulmonary antibiotics, hydrocodone, etc. may be useful for acute onset of a primary airway cough. While pulmonary hypertension is noted here, it is important to understand that the cough is not CAUSED BY PAH, rather the cough LEADS TO PAH. Hopefully adequate cough suppression/therapy will keep pulmonary hypertension from progressing significantly, however this risk will remain lifelong. Patients with severe progressive PAH can eventually develop right-sided congestive heart failure (ascites), debilitating cyanosis and labored breathing and exertional syncope if poorly controlled.

Anesthetic risk is considered moderately elevated. Cardiac protective drug choices (opioid/benzodiazepine premedication, propofol induction, etc.) are recommended. Pre-oxygenate for 5 minutes prior to induction and recover in O₂ if possible. Monitor for arrhythmias, hypotension, and hypoxia both intra and post-operatively and intervene as necessary. Judicious IV fluid rates are recommended to avoid fluid overload. Avoid heart rate stimulating drugs such as atropine unless clinically indicated.

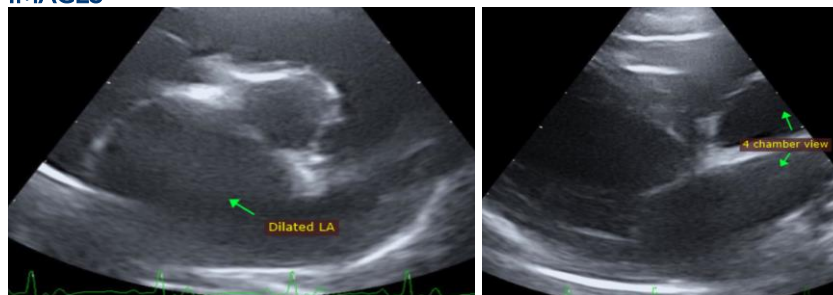
Omega fatty acid supplementation and mild salt restriction may also be of some long-term benefit. Monitor for development of a progressive cough, labored breathing, exercise intolerance or collapse episodes.

PLAN

Continue heart muscle support Pimobendan, 0.3mg/kg PO BID. Pending BP >130mmHg, institute an ACEI 0.5mg/kg PO q12h. Consider a course of Baytril, Hydrocodone to improve cough. Further respiratory treatment/work-up should be considered including a radiologist review of the films.

Recommend monitor for progression with a recheck echocardiogram in 6 months, sooner if any development of clinical signs.

IMAGES





PATIENT

Negri Santiago

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.

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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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Diplomate of the American College of Veterinary Internal Medicine (Cardiology)
info@sonopath.com

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