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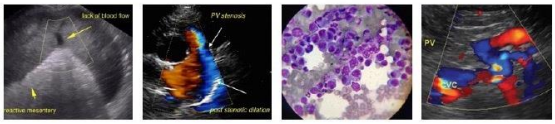

THE FOCAL ZONE
IMAGING PERFORMED BY
289-808-2608 info@thefocalzone.com

PATIENT
Newton Humphrey

SPECIES
Canine

BREED
Miniature Schnauzer

SEX
Male Neutered

AGE
13 years

WEIGHT
15.2lbs

INTERPRETED BY
Maggie Machen Lamy, DVM DACVIM (Cardiology)

IMAGING PERFORMED BY
Crystal Hill, RVT

HOSPITAL NAME
Hawkins Animal Hospital

REFERRING VET
Dr. Hawkins

INVOICE
27382

DATE
11/9/22

PRESENTING CLINICAL SIGNS

History: Recheck echo. Had an episode of M2-3 sinus bradycardia in Oct. Went into congestive heart failure in July 2022. Oct 2022 noted an arrythmia.
-Current medications: Furosemide 20mg BID and Enalapril 3.75mg BID, Vetmedin 2.5mg BID, Spironolactone 6.25mg BID.
-Abnormal PE/Chem/CBC/UA Results: Na 144, K 4.4, Chl 110, TCO2 26, Urea 20.5, Creat 198, HCT 43% Hb 14.6g/dl, AnGAP 13mmol.
-Pertinent previous echo findings (5/2022 MML): Severe MR, severe LA and LVE, trace TR. LA: 4.0, LV: 4.5.

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. Severe eccentric mitral regurgitation with severe left atrial dilation. Normal MR velocity. Markedly increased LV diameter with mildly depressed myocardial function. The tricuspid valve appears subjectively normal, with trace tricuspid regurgitation. Normal right atrial and ventricular diameter. The pulmonic and aortic valves are normal in morphology and mobility. Normal pulmonic and aortic outflow velocities. No aortic or pulmonic insufficiency. No pericardial or pleural effusion noted. No cardiac tumors observed.

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	4.8	NM	2.0	2.8	27	52	0.55
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	150	0.9	0.6	6.9	4.0	5.0	3.7
*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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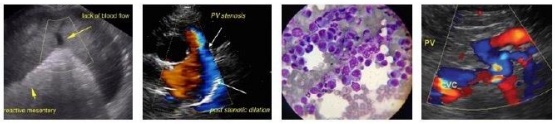

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INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

Chronic degenerative valve disease persists with continued progression. The LV dimension is markedly increased with development of mild dysfunction. The LA is similar to previous and additional structural issues are identified. Finally, bradycardia and an arrythmia are noted in the history and this persists throughout the study. **An ECG is strongly recommended, given a predisposition to sinus node dysfunction.**

Given the history, certainly reasonable to continue diuretic therapy as below, as these findings support congestive heart failure.

Prognosis is poor long-term (stage C), with high risk for recurrent CHF, development of arrhythmias/LA tear, syncope and/or sudden death in the future. Most are able to maintain a good quality of life on mediations for a period of 6-12 months.

Omega fatty acid supplementation and mild salt restriction remain recommended. Monitor for development of a cough, labored breathing, exercise intolerance or collapse episodes. Serial monitoring of SRRs is recommended as the best way to screen for progression towards CHF at home.

Elective anesthesia is not advised.

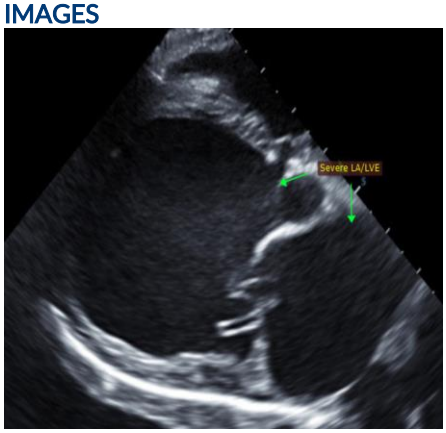
PLAN

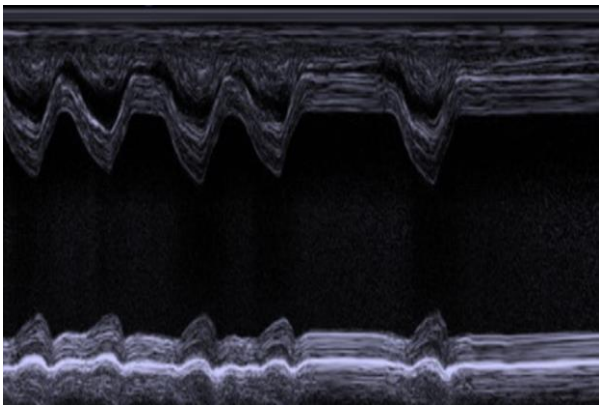
Continue Spironolactone, Enalapril and Furosemide as prescribed. If able, increase Pimobendan to TID dosing, An ECG is strongly recommended.

Monitor renal values and BP every 3-4 months life-long.

Recommend conservative monitoring with a recheck echocardiogram in 6 months to screen for progression, sooner if clinical signs arise.

IMAGES





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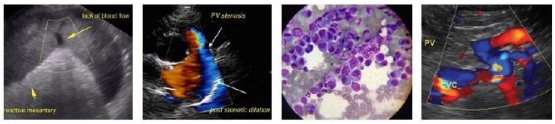

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The information and recommendations provided are based on the images presented by the referring veterinarian. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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