

PATIENT

Maribell Northstein

SPECIES

Canine

BREED

English Bulldog

SEX

Female

AGE

6 years

WEIGHT

47lbs

INTERPRETED BY

Maggie Machen Lamy,
DVM, DACVIM
(Cardiology)

IMAGING PERFORMED BY

Rebekah Jakum, CVT
ARDMS/RVT

HOSPITAL NAME

St Francis Animal
Hospital

REFERRING VET

Dr. Carpenter

PRESENTING CLINICAL SIGNS

History: Coughing/pleural effusion – improved with Lasix. Cardiomegaly.
-Current Medications: Lasix 20 BID, Enalapril 10mg.
-Pertinent abnormal labs: NSF.

ECHOCARDIOGRAM FINDINGS

2D, m-mode, color flow and doppler imaging is available. Mild diffuse thickening of mitral valve leaflets with no prolapse into the left atrial lumen. Moderate eccentric mitral regurgitation with a dilated left atrium. Borderline LV dimension with depressed myocardial function. The tricuspid valve appears largely normal with moderate tricuspid regurgitation. Normal TR velocity. The right atrium is severely dilated. The right ventricle is severely dilated with significant systolic dysfunction. 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 significant pericardial effusion. No pleural effusion suspected. No obvious cardiac masses.

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	5.0	2.7	NM	2.1	18	38	0.3
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	164	1.5	1.0	21.3	3.3	4.6	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

INVOICE

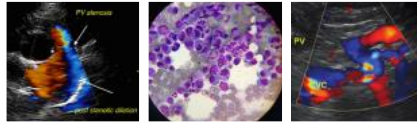
22886

DATE

3/2/22



PATIENT	INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS
Maribell Northstein	Unfortunately, this patient has suspected right ventricular cardiomyopathy with severe right heart dilation and dysfunction. A tricuspid leak is noted which is moderate and considered secondary. The velocity is normal, ruling out typical PAH. The left heart is also affected, with mild LV dysfunction and significant dysfunction. The LA dilation may reflect a true DCM or may be secondary to RV changes. Regardless the findings are severe and confirm CHF as the cause of effusion. It is worth mentioning that this particular breed is extremely difficult to scan and ancillary issues, such as an extra-cardiac mass contributing to these findings is certainly not ruled out.
SPECIES	
Canine	
BREED	
English Bulldog	Dilation and dysfunction of the right heart specifically can be primary in nature due to a form of ARVC or may reflect DCM affecting both sides of the heart. The former is suspected in this case given the predisposed breed. Consider possible contributing causes of systolic dysfunction, including a non-traditional diet, hypothyroidism, etc. A taurine supplement is recommended on the off chance of a malabsorption issue.
SEX	
Female	
AGE	
6 years	Immediate lifelong medications are recommended as below. If the patient is unstable or experience collapse or worsening symptoms at home, 24 hours monitoring of the ECG in addition to oxygen support and diuretic therapy should be considered. A baseline ECG is recommended regardless due to high risk for rapid AF or VT in the future.
WEIGHT	
47lbs	Prognosis is poor at this stage with most dogs succumbing to CHF in less than 6 months. There is high risk for recurrent congestive heart failure, malignant arrhythmias (AF, VT), collapse and/or sudden death in the future even on medications.
INTERPRETED BY	Omega fatty acid supplementation and mild salt restriction may be of some long-term benefit.
Maggie Machen Lamy, DVM, DACVIM (Cardiology)	Elective anesthesia is not advised.
IMAGING PERFORMED BY	Monitor for development of a cough, labored breathing, exercise intolerance or collapse episodes. Monitoring of sleeping breathing rates is recommended as the best way to screen for CHF going forward.
Rebekah Jakum, CVT ARDMS/RVT	PLAN Consider hospitalization for supportive care and ECG monitoring if indicated. Institute Lasix 1-2 mg/kg PO q12h. Institute heart muscle support Pimobendan (Vetmedin) 0.3mg/kg PO q12h. Institute Spironolactone 1-2mg/kg PO q12h (available in 25 and 50mg tablets). Highly recommend ECG/BP as a baseline. Consider hydrocodone with homatropine if needed for quality of life, 0.2 - 0.4 mg/kg PO up to q4-6 hours PRN for cough (available in 5/1.5mg tablets or 5mg/5ml solution). Diet change ASAP. Diet history/thyroid status should be addressed. Institute taurine supplementation 1000mg PO q12h.
HOSPITAL NAME	
St Francis Animal Hospital	
REFERRING VET	
Dr. Carpenter	Monitor renal values, BP in 1-2 weeks. If doing well and BP is >130mmHg, consider ACE-I 0.5mg/kg PO q12h. Monitor renal values and BP every 3-4 months lifelong.
INVOICE	
22886	Recommend conservative monitoring with a recheck echocardiogram in 6 months, sooner if any development of clinical signs.
DATE	
3/2/22	



PATIENT

Maribell Northstein

SPECIES

Canine

BREED

English Bulldog

SEX

Female

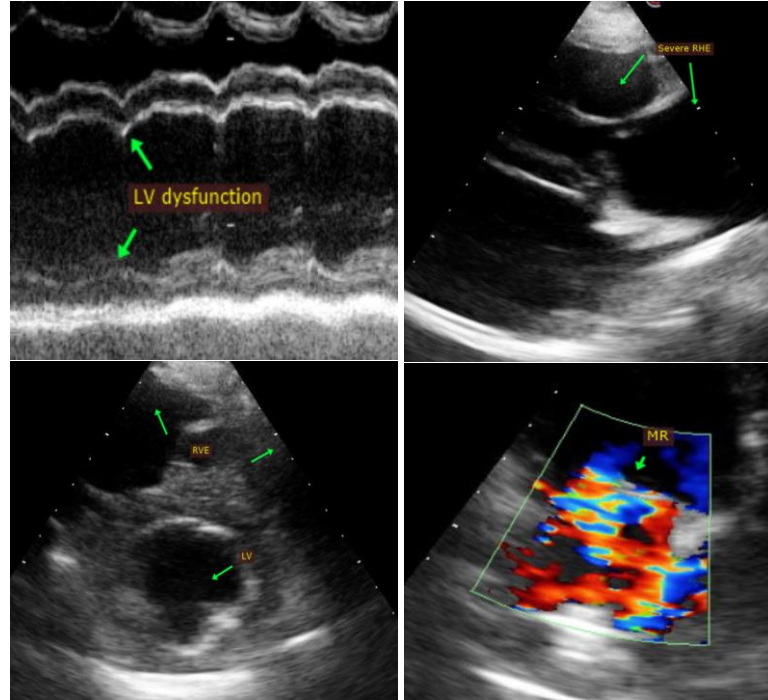
AGE

6 years

WEIGHT

47lbs

IMAGES



INTERPRETED BY

Maggie Machen Lamy, DVM, DACVIM (Cardiology)

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.

IMAGING PERFORMED BY

Rebekah Jakum, CVT
ARDMS/RVT

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

HOSPITAL NAME

St Francis Animal Hospital

REFERRING VET

Dr. Carpenter

INVOICE

22886

DATE

3/2/22