



PATIENT

Pepper Schwab

SPECIES

Canine

BREED

Pomeranian

SEX

Female Spayed

AGE

12 years

WEIGHT

10.1lbs

INTERPRETED BY

Maggie Machen Lamy,
DVM, DACVIM
(Cardiology)

IMAGING PERFORMED BY

A. Westcott, DVM

HOSPITAL NAME

Alastair Westcott,
DVM

REFERRING VET

Dr. Westcott

INVOICE

29584

DATE

3/14/23

PRESENTING CLINICAL SIGNS

History: Presented for dyspnea and collapse. Has been coughing relatively frequently for several months. Has had a longstanding heart murmur and was advised to perform a cardiac work-up in the beginning of January. Coughing has become more frequent and last night she was very restless and could not settle. Prior to presentation she had what appeared to be a syncopal event. Has been eating, drinking, eliminating otherwise behaving normally.

-PE/Chem/CBC/UA Results: Dyspnea with increased inspiratory effort and rate Poor perfusion peripherally Mildly hypothermic. Grade 4/6 pansystolic heart murmur PMI left apex Crackles over both lung fields Poor pulses Relatively severe dental disease. Mild elevation BUN Hyperalbuminemia Elevated bilirubin Sick euthyroid likely Unremarkable CBC and leukogram. Hyposthenuria - post IM furosemide. Otherwise, unremarkable.

-Radiographs: Cardiomegaly with alveolar, interstitial edema in the perihilar region. There is dramatic tracheal luminal narrowing. This is demonstrative of CHF.

ECHOCARDIOGRAM FINDINGS

2D, m-mode, color flow and doppler imaging is available. Diffuse thickening of mitral valve leaflets with mild prolapse into the left atrial lumen. Moderate to severe eccentric mitral regurgitation with moderate left atrial dilation. Normal MR velocity. Mild LV dilation with hyperdynamic myocardial function. The tricuspid valve appears normal with mild tricuspid regurgitation. Mild right atrial and ventricular enlargement suggests some degree of pulmonary hypertension. The pulmonic and aortic valves are normal in morphology and mobility. Normal pulmonic and aortic outflow velocities with laminar flow. No obvious aortic and trace pulmonic insufficiency. No pericardial or pleural effusion noted. 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	4.6	NM	NM	1.8	60	92	0.1
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	1.2	0.7	4.6	1.9	2.2	0.8
*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

Pepper Schwab

SPECIES

Canine

BREED

Pomeranian

SEX

Female Spayed

AGE

12 years

WEIGHT

10.1lbs

INTERPRETED BY

Maggie Machen Lamy,
DVM, DACVIM
(Cardiology)

IMAGING PERFORMED BY

A. Westcott, DVM

HOSPITAL NAME

Alastair Westcott,
DVM

REFERRING VET

Dr. Westcott

INVOICE

29584

DATE

3/14/23

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

The cause of the murmur is chronic degenerative valve disease causing moderate to severe mitral and mild tricuspid regurgitation. Moderate left atrial enlargement indicates relatively low risk for imminent complication; however, there is an elevated risk for progression to spontaneous congestive heart failure going forward. Mild pulmonary hypertension is suspected based upon the appearance of the right heart. No additional issues are identified.

While it is uncommon for moderate valve disease to lead to CHF, there is reported congestion on CXR described as congestive heart failure. CHF is a radiographic and clinical diagnosis and cannot be confirmed on echo. A cough may also have a component of primary airway disease, given the signalment and reported tracheal collapse, which must also be considered. If there is any question on the diagnosis, highly recommend a Radiologist review of the films to confirm.

Monitoring of sleeping respiratory rates will be paramount to screen for recurrent congestive heart failure at home. Cough suppression to improve QOL can also be considered (hydrocodone, 0.2-0.4mg/kg up to q4-6h PRN) once diuretics are on board for any residual mechanical cough in the face of normal sleeping respiratory rates. The average survival time of canine patients with active pulmonary edema is 8-9 months on medications (stage C), however they generally are able to maintain a good quality of life for that period.

Omega fatty acid supplementation and mild salt restriction may also be of some long-term benefit. Monitor for acute progression of the cough, labored breathing, exercise intolerance or collapse episodes in the future.

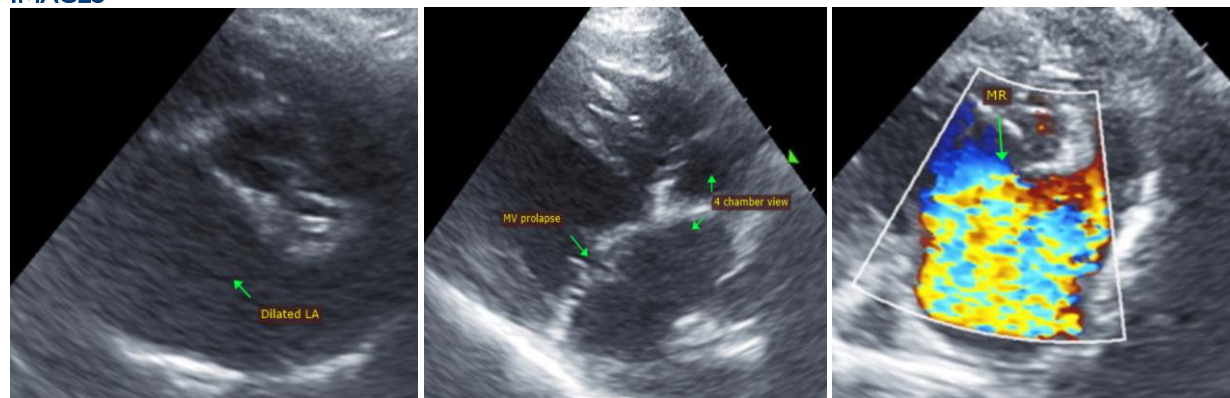
PLAN

Consider Radiologist review of the films as discussed. Administer Lasix 1-2mg/kg PO q12h. Administer Pimobendan 0.3mg/kg PO q12h. Pending BP >130mmHg, administer ACE-I 0.5mg/kg PO q12h. Administer Spironolactone 1-2mg/kg PO q12h. Consider Hydrocodone with homatropine 0.2-0.4mg/kg PO up to q4-6 hours PRN for cough.

Monitor renal values/BP in 10-14 days, then every 3-4 months while on diuretics.

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

IMAGES





PATIENT

Pepper Schwab

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.

SPECIES

Canine

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.

BREED

Pomeranian

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

SEX

Female Spayed

AGE

12 years

WEIGHT

10.1lbs

INTERPRETED BY

Maggie Machen Lamy,
DVM, DACVIM
(Cardiology)

**IMAGING
PERFORMED BY**

A. Westcott, DVM

HOSPITAL NAME

Alastair Westcott,
DVM

REFERRING VET

Dr. Westcott

INVOICE

29584

DATE

3/14/23