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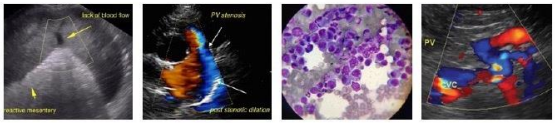


THE FOCAL ZONE
IMAGING PERFORMED BY
289-808-2608 info@thefocalzone.com

PATIENT
Chloe Moulton

SPECIES
Canine

BREED
Yorkshire Terrier

SEX
FS

AGE
14yr

WEIGHT
2.45kg

INTERPRETED BY
R. McKenzie Daniel, DVM, DABVP (Canine and Feline)

IMAGING PERFORMED BY
Crystal Hill

HOSPITAL NAME
Hamilton Region Emergency Clinic

REFERRING VET
Grewal

INVOICE
14176ag

DATE
06/22/2023

PRESENTING CLINICAL SIGNS

Presenting complaint is respiratory distress that started today after a walk. History of a decreased appetite and rapid weight loss. No cough/sneeze/vomit/diarrhea. History of heart disease and reg DVM was concerned about fluid build up in lungs on visit about 6 weeks ago. No rads performed, no heart meds started. Current meds include Tylosin and Glucosamine. Heart murmur grade 4/6, normal rhythm and pulses fair. Tachypnea and generalized increased bronchovesicular sounds with increased effort. SP02 99-100%. Furosemide 2mg/kg given IV. HR 140. BP 132/92(100).

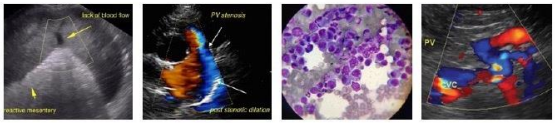
Abnormal PE/Chem/CBC/UA Results: Blood from reg DVM in May this year moderate elevation in BUN, Creatinine WNL, Elevated SDMA otherwise unremarkable. Rads showed cardiomegaly with left atrial enlargement and pulmonary infiltrates supportive of edema from left sided heart failure.

ULTRASONOGRAPHIC EXAMINATION OF THE HEART

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	<1.3	28-40	40-100	<0.6
PATIENT	5.4		2.0	2.3	40	71	0.24
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				
PATIENT	126	1.1	0.7		3.2	2.7	

Cardiac Presentation

The echocardiogram for this patient presented moderate increased left atrial size expressed both in the LA/AO and LA max measurements. Subtle deviation of the interatrial septum towards the right atrium suggestive of mild increased left atrial pressure was noted. The cranial and caudal mitral valve leaflets presented moderate thickening consistent with endocardiosis. Mild septal leaflet prolapse was present. Doppler indicated measurable moderate insufficiency. The left ventricle presented thicknesses with linear contour and moderate increased LV volume. The myocardium presented normal echogenicity without subjective evidence of significant fibrotic or ischemic disease. Contractility of the ventricular walls was adequate and in normal range for this patient evidenced by the fractional shortening measurement and subjective evaluation of the different regions of the myocardium. The left ventricular outflow tract demonstrated normal laminar flow and subjective structural integrity. The right atrium and auricle revealed normal size, structure and content. No evidence of masses was noted or chamber overload. Tricuspid valvular assessment demonstrated adequate linear morphology. No overt TR on Doppler. The right ventricle was of normal size (1/3 diameter of LV), chordae structure, myocardial echogenicity and thickness. Pulmonic tract assessment revealed normal valve structure, laminar flow, and diameter (approx.1:1 pa/ao ratio).



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No visible pericardial or free pleura fluid was noted. No echographically detectable evidence of infiltrative disease was visible. The cranial mediastinum and pericardial regions were free of masses in the visible window. No evidence of arrythmia.

Transdiaphragmatic view revealed comet tail lung pattern, which is echogenic sound wave interface with microconsolidations within the caudal lung field. The lung field should not be visualized by sonogram unless pathology is present. Chest radiographs are recommended to rule out alveolar/lung disease such as neoplasia, thromboembolic disease, chronic inflammatory disease with microconsolidation.

ULTRASONOGRAPHIC FINDINGS

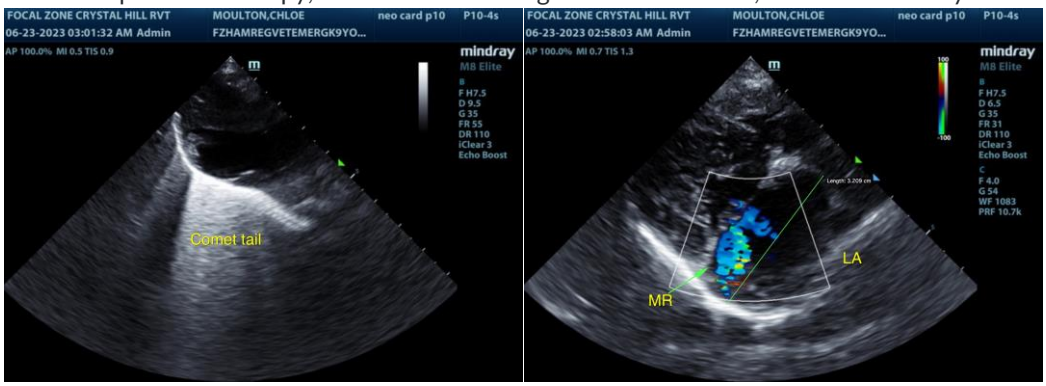
- Chronic mitral valve disease (ACVIM late B2-C) with mitral valve prolapse.
- Transdiaphragmatic comet tail artefact.

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

The moderate increased LA/LV size with emerging or current left heart volume overload implies that the risk of complication secondary to mitral valve insufficiency is at least moderately elevated with potential for cardiogenic pulmonary edema. No other clinical issues such as LV systolic dysfunction or overt clinical pulmonary hypertension are present. Potential for multicentric respiratory disease including concurrent non-specific lower airway disease could be possible.

Hospitalization with as need injectable diuretic therapy and O2 until patient is stable is suggested. Pimobendan 0.3 mg/kg PO BID, combination Lasix/spironolactone both 1-2 mg/kg PO BID with as needed respiratory support is indicated. Assessment of systemic BP is suggested. ACE inhibitor medication may be considered if systemic BP is >130 (not advised if systemic BP is <130). Mild salt restriction and omega fatty acid supplementation may prove beneficial. Exercise restriction is advised.

The prognosis at this stage is variable and serial sonographic monitoring is recommended. Pending clinical response to therapy, recheck echocardiogram in 4-6 months, sooner if clinically indicated.



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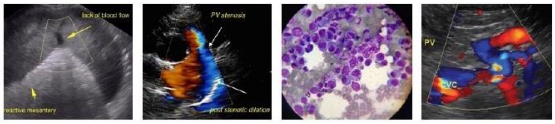

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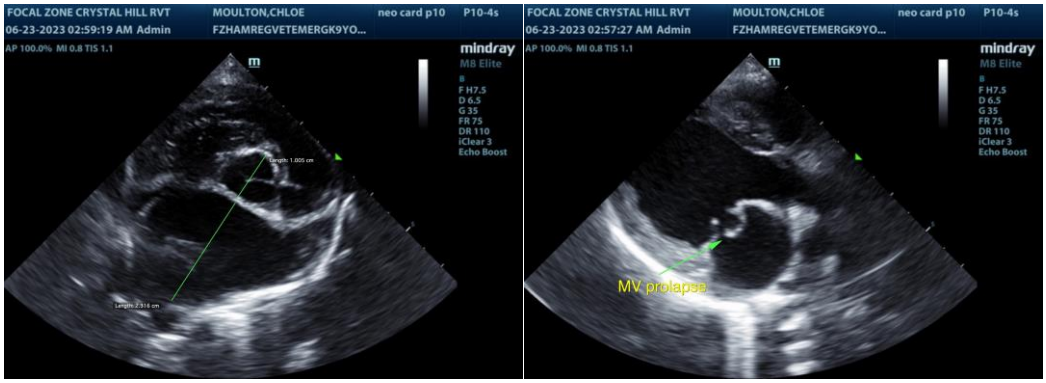

The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

Thank you for this referral. If the clinical or image interpretation does not parallel your findings or if I can be of any further assistance please contact me.

R. McKenzie Daniel, DVM, DABVP (Canine / Feline Practice)

info@SonoPath.com