SonoPath
Clinical Sonography & Telecytology
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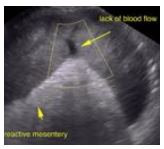
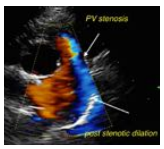
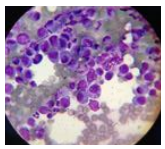
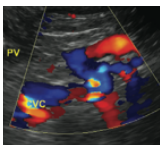

SonoPath.com
1-800-838-4268 info@sonopath.com

PATIENT
Lady Grigg

SPECIES
Canine

BREED
German Shepherd

SEX
Spayed female

AGE
12 years

WEIGHT
65 lbs

INTERPRETED BY
Eric Lindquist, DMV DABVP, Cert. IVUSS

IMAGING PERFORMED BY
Dr. McGee

HOSPITAL NAME
Bridgeport AH PLLC

REFERRING VET
Dr. McGee

INVOICE
47918

DATE
6/22/23

PRESENTING CLINICAL SIGNS

History: Lady has been becoming progressively less exercise tolerant for about a month. She eats a Costco brand Salmon and sweet potato grain free diet. The rDVM took radiographs and found a large heart silhouette, pleural effusion and pulmonary interstitial pattern consistent with edema. She has some scarring from a bout of pneumonia 9 years ago. She was referred for an echocardiogram. Heart rate while panting was 44 bpm, there was no murmur heard.

ULTRASONOGRAPHIC EXAMINATION OF THE HEART

The echocardiogram in this patient demonstrated enlarged **left atrial** size based on 3 different LA measurement methods. Chamber volumes and echogenicity were normal. The cranial and caudal **mitral** valve leaflets presented vegetative thickening consistent with endocardiosis. Doppler indicated measurable insufficiency. The **left ventricle** presented normal thicknesses with linear contour and was not dilated nor restricted. 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. Excessive **left ventricular outflow** tract velocity was noted in this patient. This is consistent with subaortic stenosis as the aortic valve was thickened and dysplastic 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. 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). Bradyarrhythmia was noted with slight **pericardial** effusion.

CANINE CARDIAC PARAMETERS	MR VMAX (m/s)	TR VMAX (m/s)	LA/AO (Boon method)	LA/AO (Heart Base;)	FS (%)	EF (%)	EPSS (cm)
NORMAL PARAMETER	4.5-5.5	<2.7	1.3	<1.6	28-40	40-100	<0.6
PATIENT	5.6	NM	NM	2.0	50	81	0.1
CANINE CARDIAC PARAMETERS	**HR** (BPM)	**AV VMAX** (m/s)	**PV MAX** (m/s)	**BODY WEIGHT**	**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		3.5	NM	65 lbs	7.0	5.93	

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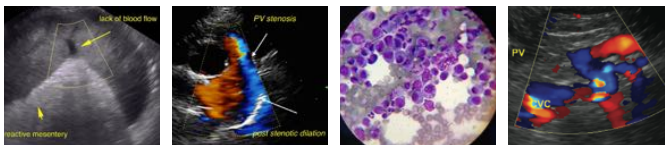

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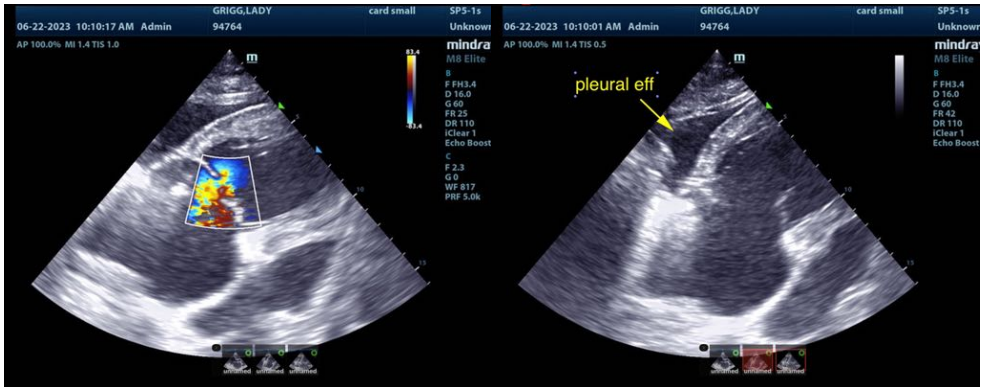
ULTRASONOGRAPHIC FINDINGS

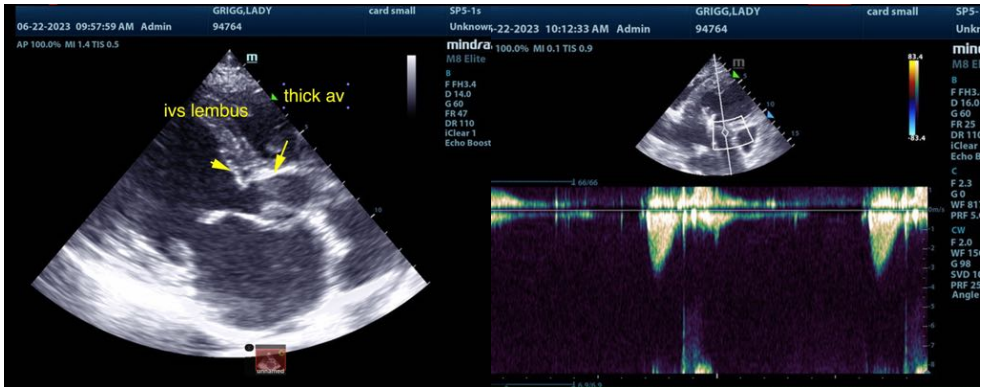
Severe volume overload in left atrium and left ventricle with thickened aortic valve and fixed LVOT impingement. This is consistent with subaortic stenosis and valvular disease with left-sided failure and bradyarrhythmia. When the patient contracts the contractility is adequate. Therefore, no evidence of DCM is present; however, consideration for heart block or other causes of bradyarrhythmia is warranted.

Pleural effusion, which is rarely caused by cardiac disease.

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

EKG/Holter monitor is warranted. Given the degree of left atrial enlargement underlying left atrial tear is possible causing pericardial effusion. Two separate issues may be occurring in this patient. I recommend abdominal sonogram for comorbidities such as splenic tumors or other neoplasia. Pleurocentesis and cytospin of the pleural effusion is warranted to assess for exfoliating neoplasia. Treatment for the primary cardiac volume overload with Quadrotherapy is indicated as well as potential therapy for the bradyarrhythmia. Pimobendan is recommended at 0.3 mg/kg b.i.d., Lasix 2-4 mg/kg b.i.d. Ace inhibitor at 0.5 mg/kg s.i.d. progressing to b.i.d. and Spironolactone at 1-2 mg/kg b.i.d. is warranted for the cardiac presentation. However, comorbidities are likely in this patient. This is not a typical for grain free diet or nutritional cardiomyopathy as contractility is adequate when the patient has a contraction. Nutritional cardiomyopathy patients tend to appear sonographically similar to DCM, which is not the case in this patient. The patient is at high risk for sudden death.





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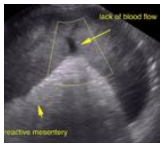
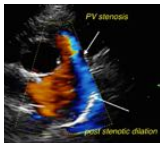
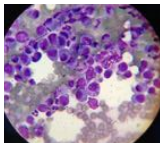
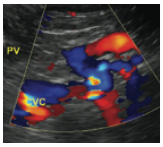

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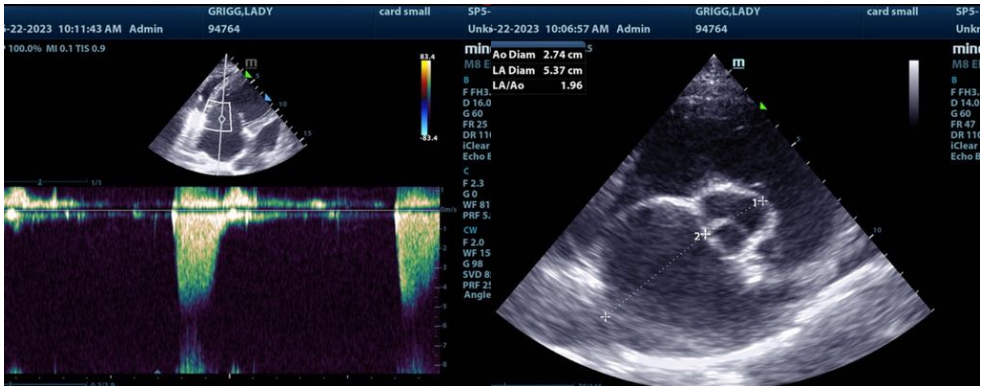

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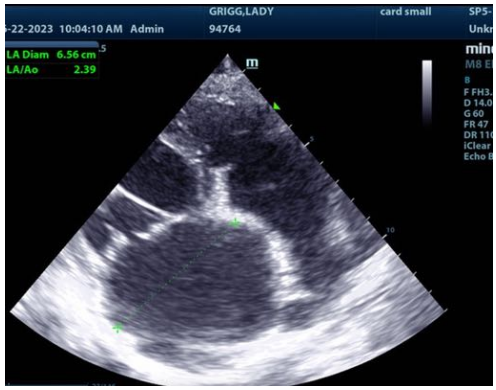

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The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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.

Eric Lindquist, DMV, DABVP, Cert. IVUSS, CEO of SonoPath.com
info@SonoPath.com