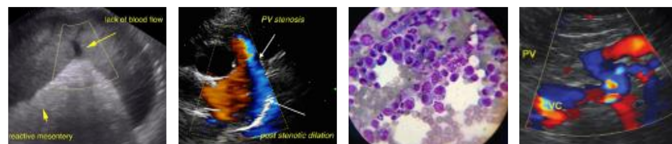

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1-800-838-4268 info@sonopath.com

PATIENT
Sallie Roberts

SPECIES
Canine

BREED
Golden Retriever

SEX
Female Spayed

AGE
6 years

WEIGHT
64.4lbs

INTERPRETED BY
Maggie Machen Lamy, DVM, DACVIM (Cardiology)

IMAGING PERFORMED BY
A. Nicastro, DVM

HOSPITAL NAME
Veterinary Specialty Care Blue Pearl Mt Pleasant

REFERRING VET
Dr. Kitzmiller

INVOICE
32538

DATE
8/25/23

PRESENTING CLINICAL SIGNS

History: Presenting as a direct transfer for hyperthermia and leukopenia. Hyporexic for past 48 hours, lethargic for past 24 hours. Has vomited twice in the past 24 hours. Os took to pDVM today it was discovered that Sallie had temperature of 106 degrees. pDVM ran CBC, Chem, U/A and Os were told that chem was wnl, but that WBC were low and that they should transfer here for continued care. pDVM gave Cerenia, pepcid and SQF. Also diagnosed yeast infection AU today and treated with leave-in medication Os do not know the name of. No unusual activities recently, no Hx of dietary indiscretion or diet changes. Still drinking, urinating, defecating normally. UTD on Vx, HW/flea prevention. Not normally on any medications.
-Abnormal PE/Chem/CBC/UA Results: Lactate: 2.5 CBC: HCT 45.4% (N), MCH 26.3 (H), MCHC 38.5 (H), Retic 6.0 (L), Retic-HGB 20.4 (L), WBC 10.81k (N), NEU 9.52k (N), Lymph 0.87k (L), Eos 0.04k (L), PLT 41k (L), PCT 0.05 (L), rest WNL Manual differential: Seg 58% = 6.26k (N), Lymph 36% = 3.89k (N), Mono 6% = 0.65k (N), "generally leukopenic"; 75% echinocytes seen Manual PLT estimate: 85,500, minimal clumping Chem17: Phos 0.9 (L), K 3.4 (L), Cl 108 (L), rest WNL UA (cysto): USG 1.040, pH 7.0, 500 protein, 50 glucose, 15 ketones, 250 blood, 1 bilirubin, 4 urobilinogen, 25 leukocytes, 2 WBC/hpf, 7 RBC/hpf, suspect cocci (manual review reveals 2+ cocci), no rods, no crystals 4Dx: Negative x 4 PT: 15 sec (11-17 sec) PTT: 124 sec (72-102 sec) Slide agglutination: Negative

RADIOGRAPHIC FINDINGS *NOTE: Images submitted for supplemental cardiac information only.

Normal cardiac silhouette. No obvious evidence of CHF.

ELECTROCARDIOGRAPHIC FINDINGS *Note: Single lead ECGs are evaluated as a rhythm strip. Morphology/MEA cannot be definitively commented on.

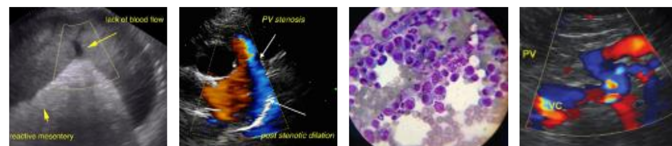
A video of an anesthesia monitor is included. The rhythm is sinus in origin with P for every QRS complex and vice versa. The recorded heart rate is 90bpm, which appears appropriate. No ectopic beats or dysrhythmias observed.
ECG diagnosis: Normal sinus rhythm.

ECHOCARDIOGRAM FINDINGS

2D, m-mode, color flow and doppler imaging is available. The MV is markedly thickened with a soft tissue lesion spanning both leaflets. The lesion is thick and prolapses throughout the cardiac cycle. Mild central MR. Normal velocity. Mild to moderate LA dilation. The LV is normal in dimension with mildly depressed myocardial function. The tricuspid valve appears mildly thickened with mild regurgitation. Normal velocity. No overt evidence of pulmonary arterial hypertension. The pulmonic valve is normal in morphology and mobility. Main pulmonary artery appears normal in diameter Normal pulmonic outflow velocities. No pulmonic insufficiency. The aortic valve also appears to have a soft tissue lesion associated with leaflets and irregular thickening. Trace AI. Normal aortic outflow velocity. No pericardial or pleural effusion noted. No cardiac tumors visualized.

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	2.0	NM	1.55	24	42	NM



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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	0.95	0.6	29.2	3.1	3.8	2.9
*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)
Adapted from June Boon, Veterinary Echocardiography, 1998				20	2.02 (1.9)	4.14 (2.2)	2.80 (2.0)
Rishniw M and Hollis NE, J Vet Intern Med 2000; 14:429-435				25	2.18 (2.4)	4.48 (2.9)	3.10 (2.5)
Hansson et al, Vet Rad and Ultrasound 2002				30	2.33 (3.3)	4.83 (3.9)	3.39 (3.4)
Bonagura et al. Echocardiography: principles of interpretation, Vet Clin North Am 15:1177, 1995				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)

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

Unfortunately, this patient has a large soft tissue lesion associated with the mitral valve, causing mitral regurgitation and LA enlargement. This is consistent with an endocarditis lesion, particularly given the history. The aortic valve also appears affected with a much smaller associative lesion and a small aortic insufficiency. Mild to moderate left atrial enlargement has developed and mild LV dysfunction is identified. No additional issues are seen. The ECG is unremarkable with a normal sinus rhythm. Monitoring for development of worsening in arrythmias is recommended, as this is common in these cases.

Endocarditis (infection of the heart valve) is exceedingly rare; however, is more common in younger large breed dogs. A definitive diagnosis carries a poor prognosis, with only 50% surviving hospitalization and a long-term MST of 2 months. Aortic valve infections carry an even worse outcome, with an MST of weeks. Given involvement of 2 valves, certainly the prognosis is likely grave. The most common organisms are Bartonella for the AoV and streptococci or staphylococcus for the MV. Treatment for both is recommended as below. Based upon these statistics and a reportedly sick patient, recommended continued hospitalization for broad spectrum IV antibiotic therapy (Unasyn and Baytril or Clavamox and Baytril if hospitalization is declined) and azithromycin for Bartonella. While blood cultures are certainly indicated, they may be negative if antimicrobial therapy is already on board. Additionally, thromboprophylaxis using Plavix is recommended (half the cases will have thromboembolic disease). Finally, with any degree of volume overload there is risk for decompensation going forward. Consider Pimobendan as below to help stabilize the situation. No clear indication for sildenafil therapy or diuretic therapy at this time. Antibiotic therapy should be administered IV for as long as possible (while hospitalized) and then PO for at least 6-8 weeks thereafter.

Unfortunately, in addition to a poor prognosis with suspect endocarditis, if the patient survives there is a chance the damage to the valve/cardiac dilation is permanent and may lead to CHF in the future. Additionally, endocarditis is typically secondary to some inciting infectious origin (UTI, skin lesion, etc.) and a thorough history and systemic work up is recommended. Given the highly complex nature of this case, referral to a multi-specialty center is advised.

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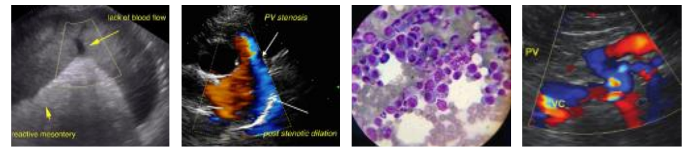
Clinical Sonography & Telecytology



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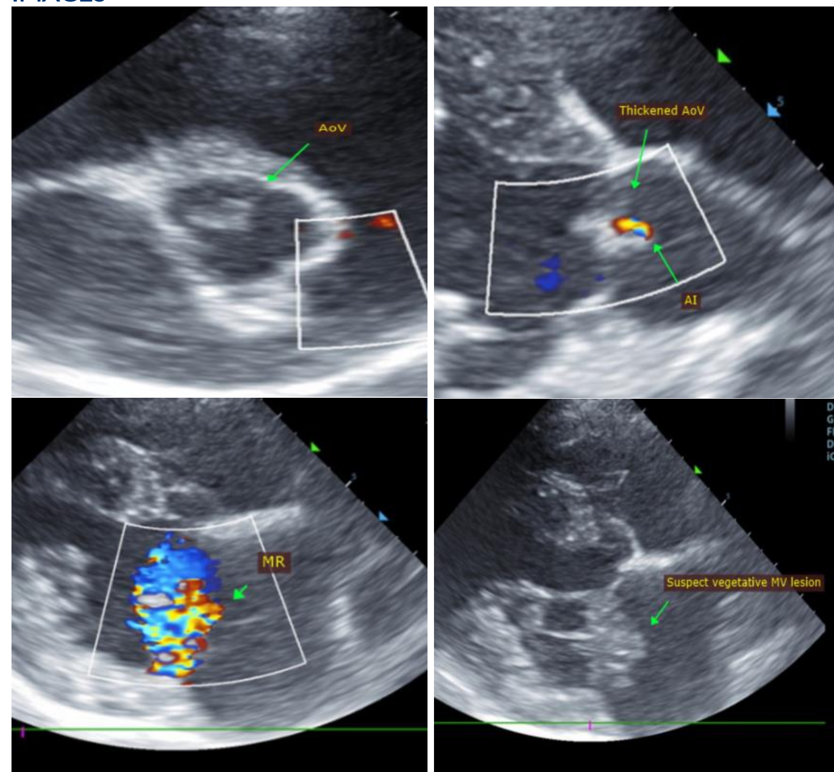
Omega fatty acid supplementation and mild salt restriction may be of some long-term benefit. Monitor for development of progressive labored breathing, exercise intolerance or collapse episodes in the future.

PLAN

Highly recommend continued hospitalization for supportive care and further evaluation, ideally with a critical care specialist. IV antibiotic therapy and supportive care is recommended. Initiate pump support Pimobendan 0.2-0.3mg/kg PO BID. Consider blood cultures, systemic evaluation as discussed above. Highly recommend repeat CXR and bloodwork to assess changes compared to presentation, reassess hydration status, etc.
Recheck echocardiogram in 2-3 months to reassess lesion, cardiac function and LA/LV dilation.

IMAGES



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