SonoPath
Clinical Sonography & Telecytology
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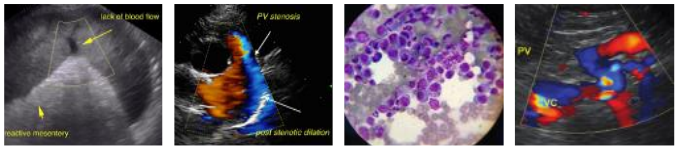

SonoPath.com
1-800-838-4268 info@sonopath.com

PATIENT
Sherman Long

SPECIES
Canine

BREED
Lab Mix

SEX
Male Neutered

AGE
12 years

WEIGHT
59.6lbs

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

IMAGING PERFORMED BY
Shari Reffi, CVT

HOSPITAL NAME
Hackettstown Animal Hospital

REFERRING VET
Dr. Long

INVOICE
22496

DATE
2/10/22

PRESENTING CLINICAL SIGNS

History: Partial anorexia, decreased appetite, malaise, ascites, cardiomegaly. No murmur auscultated, straw colored ascites (cyto pending). No current medications.
-Abnormal PE/Chem/CBC/UA Results: Monocytosis, 1.31, SDMA 16, bun/creat wnl, ALT 214, GGT 17, Na/cl 25, Na 139, Cl 107.

ECHOCARDIOGRAM FINDINGS

2D, m-mode, color flow and doppler imaging is available. Mild thickening of the anterior leaflet of the mitral valve with no obvious prolapse into the left atrial lumen. Normal left atrial dimension. Normal LV diameter with adequate myocardial function. Tricuspid valve appears largely normal. Diastolic collapse of the RA consistent with tamponade. No obvious tumor in the RA, AV groove or right auricle, Normal aortic and pulmonic outflow velocities; laminar flow. Large volume pericardial effusion. No obvious pleural effusion seen. Large volume ascites. Hyperechoic nodule seen during cursory splenic evaluation.

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	NM	NA	1.3	1.3	31	60	0.45
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	133	1.1	1.1	27.0	3.0	4.0	2.7
*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)
Adapted from June Boon, Veterinary Echocardiography, 1998				25	2.18 (2.4)	4.48 (2.9)	3.10 (2.5)
Rishniw M and Hollis NE, J Vet Intern Med 2000; 14:429-435				30	2.33 (3.3)	4.83 (3.9)	3.39 (3.4)
Hansson et al, Vet Rad and Ultrasound 2002				35	2.48 (4.3)	5.17 (5.0)	3.69 (4.5)
Bonagura et al. Echocardiography: principles of interpretation, Vet Clin North Am 15:1177, 1995				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

The cause of the patient's clinical signs is cardiac tamponade secondary to large volume pericardial effusion. The cardiac structure and function are largely normal with a mild mitral leak. This is clinically insignificant comparatively. The patient is/was in active tamponade with development of ascites and collapse of the right atrial wall. This reflects an unstable situation, and the patient was tapped successfully. Scant effusion was seen following the tap and close monitoring for rebleeding is advised. If this occurs over the next 12 hours, repeating the tap and/or potentially considering euthanasia is recommended.

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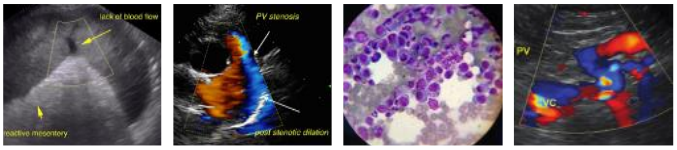

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The two most common causes of hemorrhagic pericardial effusion in older dogs include idiopathic and neoplastic. Less commonly, pericarditis (an inflammatory condition), a left atrial tear, or a bleeding disorder should also be considered. Idiopathic by definition means that a cause cannot be found. If diagnosed (a rule out diagnosis), the long-term prognosis with idiopathic effusion has the potential to be fair. In a senior lab, cancer is the most likely diagnosis until proven otherwise.

Regarding neoplasia, the most common types of cardiac cancer-causing pericardial effusion include hemangiosarcoma (HSA), chemodectoma, or mesothelioma. The prognosis varies a great deal depending on the underlying type of cancer. A hemangiosarcoma is considered most likely, however no discrete tumors were seen today. That being said extra-cardiac lesions are easily missed and is still suspected, particularly in light of a splenic nodule. An echocardiogram by an attending Cardiologist and/or thoracic CT is reasonable to further screen the external surface of the heart. Additionally, a full systemic evaluation (AUS) with aspirates may be indicated to screen for additional abnormalities. Consider submit a sample of the effusion for cytology as well, albeit this is typically of low yield.

Overnight monitoring and fluid therapy is also ideal as these patients are predisposed to malignant arrythmias and volume depletion.

Regardless of underlying cause, it is impossible to predict if and when pericardial effusion will recur. Some patients with idiopathic effusion need to be tapped between 1 and 3 times then never again. Other patients may experience frequent recurrence with either HSA or idiopathic disease. If the effusion reoccurs frequently, a surgical procedure called a pericardiectomy can be discussed.

This patient will always be at risk for signs of recurrent pericardial effusion including pale gums, difficulty breathing, lethargy/collapse, cough, exercise intolerance, abdominal distention, vomiting, inappetence and/or sudden death. If you notice any of these symptoms, urgent evaluation should be sought.

PLAN

Consider full systemic evaluation, fluid therapy/ECG monitoring as discussed. Consider referral for advanced imaging as discussed. No cardiac medications are clearly indicated at this time. Over the counter herbal supplement Yunnan Baiyao may help decrease risk of bleeding, however true benefit is speculative (1 capsule PO BID). A recheck of tumor dimension and fluid accumulation can be considered in 1-2 months if patient does well, sooner if recurrence of clinical signs.

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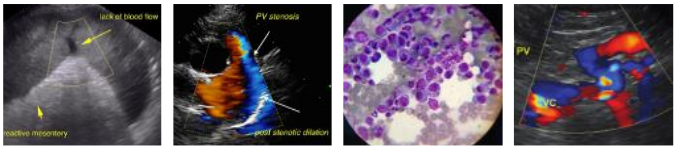

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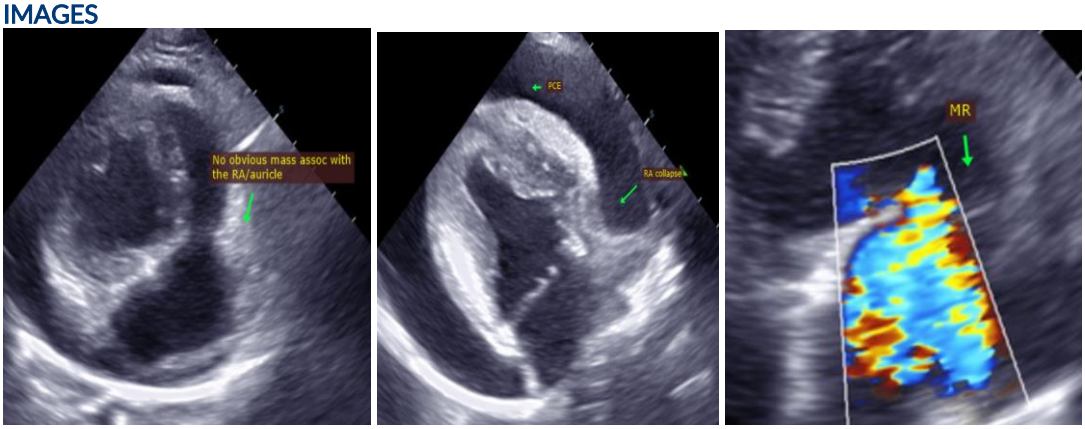
IMAGES



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