



PATIENT

Boris Watts

SPECIES

Canine

BREED

Bichon Frise Mix

SEX

Male Neutered

AGE

11.13.08

WEIGHT

14.7lbs

INTERPRETED BY

Maggie Machen Lamy,
DVM, DACVIM
(Cardiology)

HOSPITAL NAME

Claws N Paws Animal
Hospital

REFERRING VET

Dr. Singh

INVOICE

28429

DATE

1.18.23

PRESENTING CLINICAL SIGNS

History: Intermittent hacking/coughing for several months became worse in the first week of December; symptoms improved on medication then returned within 24-36 hours prolonged CRT. Grade III-IV/VI.

-Radiographs: R lateral (evidence of dorsal elevation of trachea, narrowing of trachea at the level of main stem bronchus, increased sternal contact, VHS 13.6) .

-Current medications: Vetmedin 1.25mg BID, Enalapril 2.5mg BID, flovent (fluticasone propionate 100 micrograms/puff) 1-2 puff Q6-12h prn

-Sedation used: Not required to complete full diagnostic ultrasound.

-Pertinent previous ultrasound results: No previous.

-STAT: Declined.

-Imaging performed by: Stephanie Warga RDCS, RVT.

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

Globoid cardiomegaly. No obvious evidence of CHF.

ECHOCARDIOGRAM FINDINGS

2D, m-mode, color flow and doppler imaging is available. Mild diffuse thickening of mitral valve leaflets with no prolapse into the left atrial lumen. No mitral regurgitation with decreased left atrial dimension. Volume contracted LV with adequate myocardial function. The tricuspid valve appears normal with trace tricuspid regurgitation. Normal velocity. Normal right atrial and ventricular diameter and morphology indicating no overt evidence of pulmonary arterial hypertension. The pulmonic and aortic valves are normal in morphology and mobility. Normal pulmonic and aortic outflow velocities with laminar flow. Trace aortic and pulmonic insufficiency. Hypoechoic lesion suspected adjacent to the right heart, although an additional lesion is seen at a more basilar location (see below; rule out tumor extension v multiple lesions). Small volume pericardial effusion without obvious tamponade. No pleural effusion noted.

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	NA	2.5	NM	1.0	64	93	NM
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	0.9	1.1	6.7	1.2	2.5	0.9
*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)
<i>*Note: All measurements based upon multi-modal images and methods. An average value is reported.</i>				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

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

The cause of the patient's cough is likely development of pericardial effusion. The cardiac structure and function are largely normal with evidence of volume depletion. Lab work is strongly recommended as resuscitation may be warranted. Small tricuspid and aortic leaks are noted, which are clinically insignificant comparatively. Of great concern the intrapericardial space is abnormal, with what appear to be multifocal soft tissue lesions. A large tumor is suspected; however, advanced imaging is necessary to further evaluate the lesions (advanced echo, diagnostic centesis, thoracic CT). No tamponade is seen at this time. In a senior dog (albeit an atypical breed), 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 in this case. Consider full systemic evaluation (AUS) may be indicated to screen for additional abnormalities, such as a splenic mass. Consider a diagnostic sampling of the effusion for cytology as well, albeit this is typically of low yield and carries risk with this volume. Lethargy may or may not be related to small volume effusion and further systemic evaluation is advised.

Regardless of underlying cause, it is impossible to predict if and when pericardial effusion will increase and start to cause cardiac tamponade. Once removed, reeffusion rates are also highly unpredictable. 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.

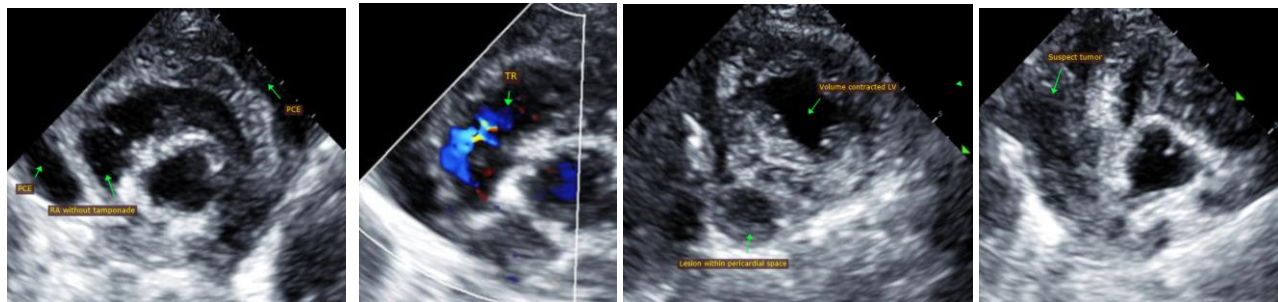
This patient will always be at risk for signs of recurrent pericardial effusion including pale gums, difficulty breathing, lethargy/collapse, cough, exercise intolerance, abdominal distention, vomiting, inappetence and/or sudden death. If you notice any of these symptoms, urgent evaluation should be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

PLAN

Baseline BP. Consider immediate referral to a multi-specialty center for advanced imaging, diagnostic centesis if indicated as discussed. Consider full systemic evaluation, lab work, etc. . No cardiac medications are clearly indicated at this time. Cough suppression may be beneficial. Over the counter herbal supplement Yunnan Baiyao may help decrease risk of bleeding, however true benefit is speculative (1 capsule PO BID).

If referral is declined, a recheck of the lesions and fluid status is suggested in 1-2 months, sooner if worsening of clinical signs.

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.

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