



PATIENT

Cindy Garcia

SPECIES

Canine

BREED

Chihuahua

SEX

Female Spayed

AGE

14 years

WEIGHT

7.2lbs

INTERPRETED BY

Maggie Machen Lamy,
DVM, DACVIM
(Cardiology)

IMAGING PERFORMED BY

G. Ferrer, DVM

HOSPITAL NAME

Pulse: Pet Ultrasound
Services

REFERRING VET

Dr. Pinero

INVOICE

47438

DATE

4/6/26

PRESENTING CLINICAL SIGNS

History: Presented with a dry cough and fluid in the pericardial sac. On 3/28/26 presented due to a stroke-like episode. CXR showed the pericardial sac appeared enlarged due to being filled with fluid. Is inappetence, lethargic, and has a dry cough. On Vetmedin, Furosemide, Enalapril (not being given due to side effects). Pericardiocentesis was performed and non-coagulated blood was removed; sent for cytology. BP: 142mmHg.

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

Globoid cardiomegaly. No obvious evidence of CHF.

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. Mild mitral regurgitation with mild LA dilation. Normal MR velocity. Normal LV diameter with adequate myocardial function. Normal LV wall thickness. Tricuspid valve appears normal, no TR. Diastolic collapse of the RA consistent with tamponade. No obvious tumor in the right atrium. The right AV groove is irregular and hypoechoic, although no masses are seen. The pulmonic and aortic valves are normal in morphology and mobility. Normal aortic and pulmonic outflow velocities; laminar flow. Trace AI. No PI. Moderate volume pericardial effusion. No pleural effusion seen.

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	NA	NM	1.5	68	90	0.2
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	0.8	3.3	1.6	1.8	0.5
*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)
				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 clinical signs is hemorrhagic pericardial effusion, as was mentioned in the history. There is chronic degenerative valve disease causing mild MR; however, this is hemodynamically stable and unrelated. CHF is ruled out in this case. The patient was in active



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tamponade, which is presumably relieved through a pericardiocentesis. The remainder of the study is largely unremarkable.

The two most common causes of hemorrhagic pericardial effusion in older dogs are idiopathic and neoplastic. Less commonly, pericarditis (an inflammatory condition), a left atrial tear (ruled out with only mild LA enlargement), 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. **It is worth noting that pericardial effusion in Chihuahua's as a whole is quite rare and all possibilities should be considered.**

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. While no discrete tumors were seen today, it is important to note that extra-cardiac lesions are easily missed without advanced diagnostics and referral for a thoracic CT scan could be considered. Additionally, systemic evaluation (AUS) is recommended to screen for additional lesions (i.e., splenic mass).

Consider further evaluation, pending cytology results including abdominal ultrasound, etc. No indication for cardiac medications and **triple therapy should be discontinued.**

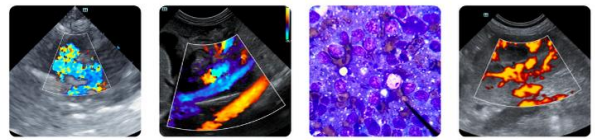
Regardless of underlying cause, it is impossible to predict if and when pericardial effusion will recur. Some patients with idiopathic effusion need to be tapped between 1 and 3 times then never again. Other patients may experience frequent recurrence with either HSA or idiopathic disease. If the effusion 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 advanced imaging as discussed, in addition to further systemic workup. No cardiac medications are clearly indicated at this time; Lasix, Pimobendan and Enalapril should be discontinued. 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 the extra-cardiac structures and to assess for fluid re-accumulation could be considered in 1-2 months if patient does well, sooner if recurrence of clinical signs.



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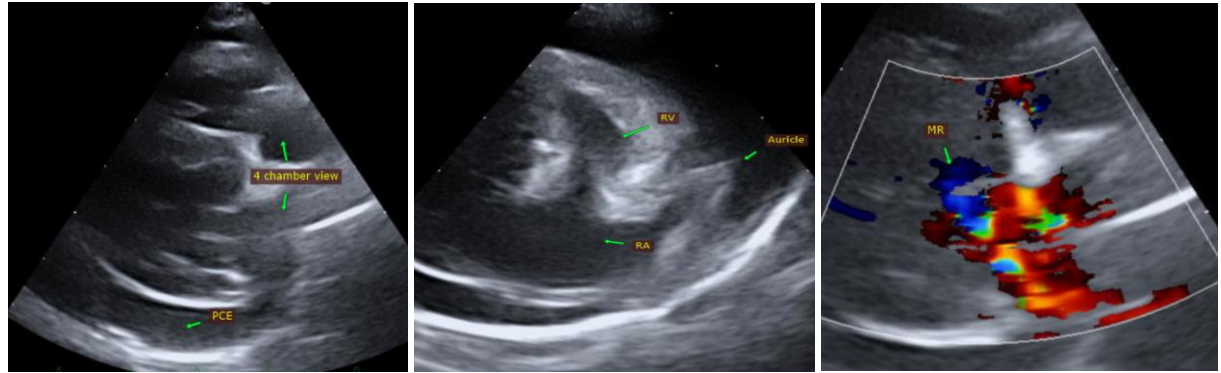
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IMAGES



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)

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