



PATIENT

Raisin McCabe

PRESENTING CLINICAL SIGNS

History: Heartworm treated about 7 months ago in the US then travel to Canada for adoption. Post treatment still Ag positive. Assess burden and any changes to function. Treating with Pred for presumed response ITP to HW.
-Abnormal PE/Chem/CBC/UA Results: Bloodwork WNL.

SPECIES

Canine

ECHOCARDIOGRAM FINDINGS

2D, m-mode, color flow and doppler imaging is available. Normal mitral valve with no prolapse into the left atrial lumen. No MR; normal LA dimension. No LV dilation with adequate myocardial function. The MPA and branches are dilated. Possible adult worm near the bifurcation. Prominent right heart. No tricuspid regurgitation. The pulmonic and aortic valves are normal in morphology and mobility. Normal pulmonic and aortic outflow velocities with laminar flow. No pulmonic or aortic insufficiency. No pericardial or pleural effusion.

BREED

Australian Cattle Dog

SEX

Female Spayed

AGE

5 years

CARDIAC CHART

WEIGHT

48.7lbs

INTERPRETED BY

Maggie Machen Lamy,
DVM DACVIM
(Cardiology)

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	NA	NM	1.2	50	82	0.3
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	120	2.3	1.7	22.1	2.1	3.4	1.7
*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)

IMAGING PERFORMED BY

Crystal Hill, RVT

HOSPITAL NAME

New Hamburg Vet
Clinic

REFERRING VET

Dr. Blier

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

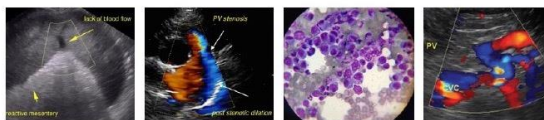
Suspicion for a persistent adult heartworm infestation in the distal pulmonary artery. This is certainly not definitive, as ultrasound is largely insensitive (i.e., adult worms may be easily either missed peripheral or elsewhere). Given only mild right heart prominence, the infestation is likely mild (ie residual) without evidence of significant pulmonary hypertension. The MPA is however dilated, and serial monitoring is advised. No additional issues are identified.

INVOICE

22904

DATE

3/2/22



PATIENT

Raisin McCabe

Heartworms can cause significant damage to the lung tissue leading to pulmonary damage, pulmonary hypertension and clinical signs such as coughing, decreased ability to exercise, or difficulty breathing. Disease severity can range from an asymptomatic dog with few worms to dogs with severe respiratory signs. In the most severe cases, caval syndrome may develop due to a very high worm burden sheering blood cells as they pass through the heart. Caval syndrome is a life-threatening emergency that requires immediate surgical removal of the worms.

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Given that this patient has no reported clinical signs and was already treated with Immiticide, we have some flexibility when approaching therapy. If extraction would be a possibility from a financial standpoint, I would consider referral to a local cardiologist for advanced echocardiography and evaluation. If that is not a possibility, options include repeating Immiticide therapy (as dictated by the American Heartworm Society) versus utilizing the slow kill method (monthly Ivermectin). It is unusual to have a persistent adult infestation following adequate adulticide therapy and confirming the status is recommended prior to proceeding. Discussion with the owner is advised as there is risk with any approach.

Medical management with drugs like Sildenafil and prednisone are only indicated if there are symptoms. There is high risk for thromboembolism in any HW patient, however those with adult worms seen in the PA are no question at elevated risk. At this time, exercise restriction is paramount, including cage rest with leash walks only, as a worm embolus can be a life-threatening complication of the disease. This should be continued for an additional 6-8 weeks following therapy.

INTERPRETED BY

Maggie Machen Lamy,
DVM DACVIM
(Cardiology)

Following treatment, retest for heartworm disease 6 months after completing the full course of therapy. Anesthesia is NOT advised prior to completing the protocol, as vasodilation can lead to increased risk for an embolus. Prognosis is guarded, as the right heart/MPA changes are often permanent and may cause clinical signs as the dog ages (exertional syncope/dyspnea, right-sided CHF).

IMAGING PERFORMED BY

Crystal Hill, RVT

During therapy, there is high risk for a worm embolus and breathing rate and effort should be monitored closely. Anti-inflammatory prednisone can be used if becomes symptomatic. Patient will be at high risk for developing clinical signs due to pulmonary hypertension with age given the inherent secondary inflammation and damage to the pulmonary vasculature and lungs, and periodic rechecks may be helpful. Monitor for exertional dyspnea or fainting episodes going forward.

HOSPITAL NAME

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Clinic

A recheck echocardiogram and chest radiographs are recommended in 6 months to reassess right heart changes.

REFERRING VET

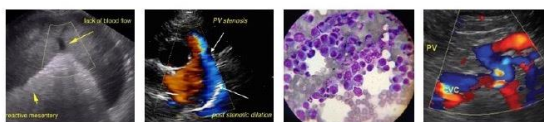
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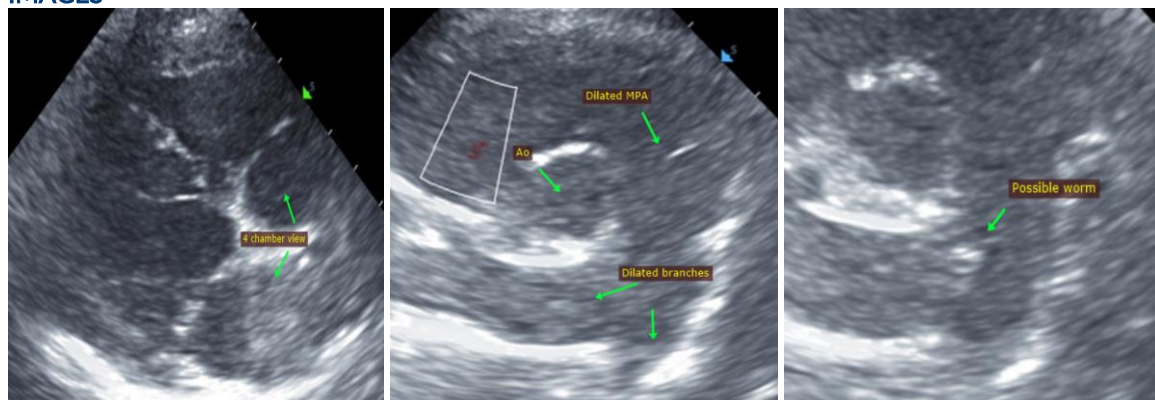
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IMAGES



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
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