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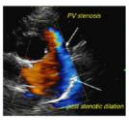
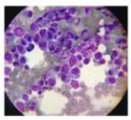
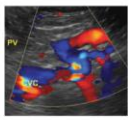
SVS IMAGING

SonoPath
Clinical Sonography & Telecytology
EDUCATIONAL TELECONSULTATION SERVICES™
1-800-838-4268 info@sonopath.com SonoPath.com

PATIENT

Noelle K9 Kindness

SPECIES

Canine

BREED

Spitz/American Eskimo

SEX

Female Spayed

AGE

7 years

WEIGHT

36lbs

INTERPRETED BY

Maggie Machen Lamy, DVM, DACVIM (Cardiology)

IMAGING PERFORMED BY

Sarah Pender, CVT

HOSPITAL NAME

SVS Imaging QC

REFERRING VET

Dr. Van Noy

INVOICE

25226

DATE

7/8/22

PRESENTING CLINICAL SIGNS

History: Clinical heartworm disease. Treated with Doxycycline and Diroban.
-Radiograph report: Possible PAH.

ECHOCARDIOGRAM FINDINGS

2D, m-mode, color flow and doppler imaging is available. Mild mitral valve thickening with no obvious prolapse into the left atrial lumen. Trace mitral regurgitation. Normal left atrial dimension. Normal LV diameter with adequate myocardial function. Normal LV wall thickness. The tricuspid valve appears normal in form and function. No TR. Mild prominence of right atrium and ventricle; however, no significant enlargement appreciated. The pulmonic and aortic valves are normal in morphology and mobility. Normal LVOT and RVOT velocity. No aortic or pulmonic insufficiency. MPA and branches appear normal. No obvious adult worms seen. That being said, the distal PA and branches are not extensively visualized. No pericardial or pleural effusion noted. No obvious cardiac tumors 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	NM	NA	NM	1.3	53	86	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	78	1.4	1.1	16.3	2.3	2.9	1.3
*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

Overtly normal cardiac structure and function documented in this study with no obvious significant PAH. There is no significant valvular regurgitation or chamber enlargement noted. The right heart is prominent, which may be indicative of early pulmonary hypertension. This does not however require therapy. The MPA and branches appear normal, and there are no obvious adult worms seen. **It is very important to understand that this is not considered a thorough study of the distal branches and adult worms may have been easily missed**. Even with the best visualization, ultrasound is not 100% sensitive for finding adult worms, although suspicion is

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relatively low in a dog with only mild MPA dilation. **Consider referral in this case for advanced echocardiography.**

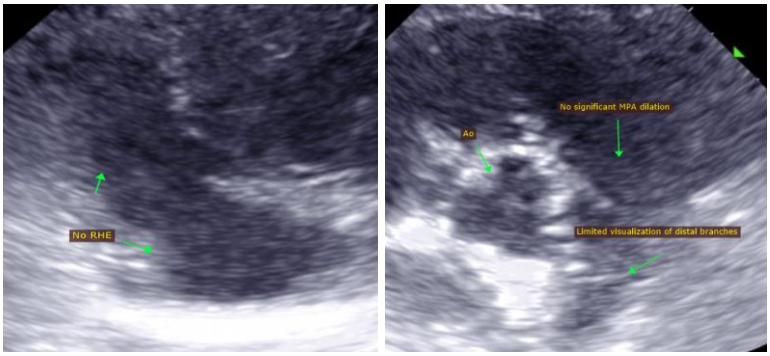
There is no obvious contraindication for Immiticide therapy with a presumably low adult worm burden based upon what is seen here. Confirming the diagnosis followed by the split immiticide protocol is recommended as dictated by the American Heartworm Society (www.heartwormsociety.org), including 30 days of doxycycline and monthly Ivermectin. Strict cage rest required at least until 4-6 weeks following the final treatment.

The cough should be treated symptomatically utilizing anti-inflammatory steroids, hydrocodone, etc.

If treatment is successful, good chance for no long-term issues associated with HW disease (cough, pulmonary hypertension, pulmonary damage, etc.) given a normal cardiac structure and lack of clinical signs.

Follow up echocardiography is only necessary if clinical signs of cardiac disease develop (murmur, cough, fainting, etc.).

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. 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