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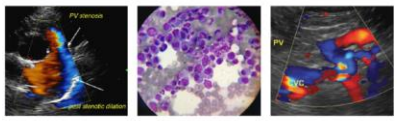

SonoPath
Clinical Sonography & Telecytology
EDUCATIONAL TELECONSULTATION SERVICES™
1-800-838-4268 info@sonopath.com SonoPath.com

PATIENT

Apollo Mosher

SPECIES

Canine

BREED

Shepherd Boxer Mix

SEX

Male Neutered

AGE

9.5 years

WEIGHT

94lbs

INTERPRETED BY

Maggie Machen Lamy, DVM, DACVIM (Cardiology)

IMAGING PERFORMED BY

Amy Mayhew, LVT

HOSPITAL NAME

SVS Imaging MI

REFERRING VET

Dr. Hawker

INVOICE

28852

DATE

2/7/23

PRESENTING CLINICAL SIGNS

History: Preanesthetic CXR showed enlargement of the aortic arch. Assess prior to anesthesia. Patient was sedate with Gabapentin, Trazadone and Alfaxalone.

ECHOCARDIOGRAM FINDINGS

2D, m-mode, color flow and doppler imaging is available. Normal mitral valve leaflets with no prolapse into the left atrial lumen. Trivial mitral regurgitation with a normal left atrial dimension. Normal LV diameter with adequate myocardial function. The tricuspid valve appears normal with trivial tricuspid regurgitation. 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. The aortic root is prominent with a dilated ascending segment. No obvious aortic and trivial pulmonic insufficiency. No pericardial or pleural effusion noted. No obvious cardiac masses.

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	NA	NM	1.1	28	50	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	0.7	42.6	3.3	3.6	2.6
*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 dimensions and function, with no obvious dysfunction or dilation of the left heart. No significant valvular leaks are visualized, and no evidence of pulmonary hypertension.

The aortic root and ascending segment are dilated, which explains the abnormal CXR appearance. This is a relatively unusual finding in small animals. Rule outs for this finding include systemic hypertension, coarctation of the aorta (distal narrowing), annuloaortic ectasia (dilation due to Marfan-like syndrome), aortic dissection (unlikely), normal variant, other. A screening BP would be the first step, assessing both the forelimb and pelvic limbs readings for discrepancy. If

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systemic pressures are normal and consistent cranial and caudal, SHT or coarctation are ruled out. If there are prior CXR that also show this abnormality earlier in life, a congenital issue like Marfans or a normal variant would be most likely. Advanced imaging can also be considered, to rule out the listed abnormalities and assess risk. The possibility of a normal variant remains as well. Until a definitive cause or lack thereof is identified, the patient may have increased risk for aortic aneurysm/rupture and sudden death in the future and mild activity restriction is advised.

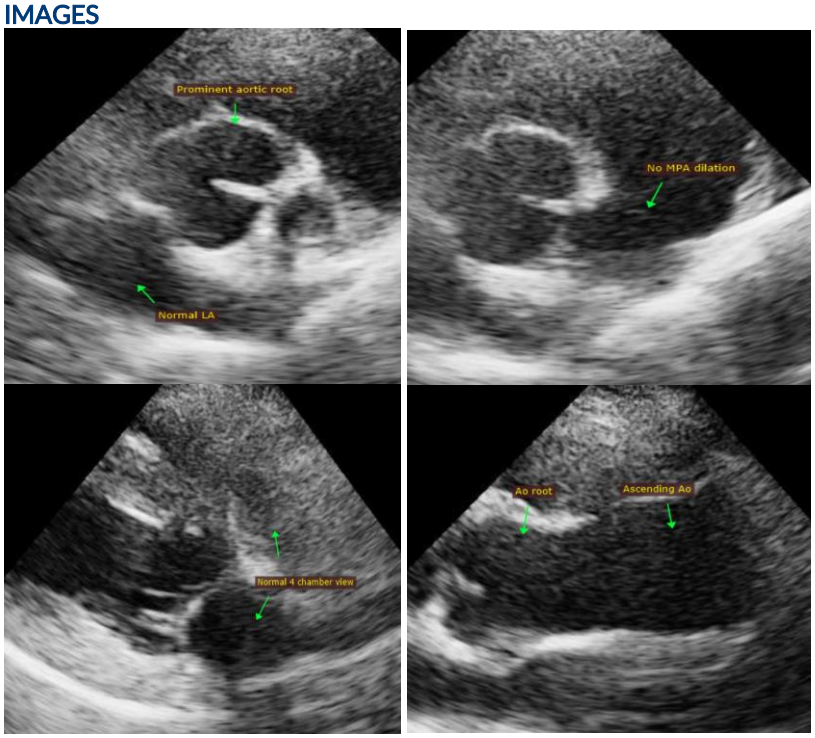
Based upon the cardiac appearance, there is no clear contraindication for general anesthesia. That being said, ideally the blood pressures would be assessed prior to proceeding without sedation on board; however, given the temperament of the patient this may not be possible. If the patient is stable under premedication, it seems reasonable to proceed with caution, monitoring for any blood pressure changes during the procedure and utilizing cardiac protective agents as able. Sedation during recovery is suggested, in order to keep BP/HR under control.

Monitor for development of a heart murmur, cough, labored breathing, exercise intolerance or collapse episodes.

Plan: Consider BP assessment as discussed. Consider advanced imaging such as a thoracic CT if elected.

A recheck echocardiogram is recommended should a significant murmur develop or signs of cardiac compromise be noted in the future.

IMAGES



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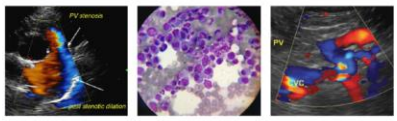

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The information and recommendations provided are based on the images presented by the referring veterinarian. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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