IMAGING PERFORMED BY

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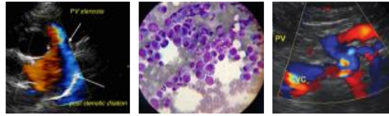

SonoPath

Clinical Sonography & Telecytology

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PATIENT
Chuy Metzger

SPECIES
Canine

BREED
Chihuahua

SEX
MN

AGE
2007

WEIGHT
7.6lb

INTERPRETED BY
Maggie Machen Lamy, DVM, DACVIM (Cardiology)

HOSPITAL NAME
Northwind AH

REFERRING VET
Dr. Jones

INVOICE
29252

DATE
2/27/23

PRESENTING CLINICAL SIGNS

History: P started with collapsing episodes over the weekend. Multiple times a day fall laid out with tongue out and not moving. Episodes last 2-3 minutes at a time. P limp and does not lose bowels. Concerned about cardiac issues vs seizures. 3/6 murmur.
Pertinent abnormal PE/Chem/CBC/UA Results: SDMA up, BUN up.
Current medications: Renal support food.
Blood pressure: 150mmHg
Sedation used: Not required to complete full diagnostic ultrasound.
Pertinent previous ultrasound results: No previous.
STAT: Requested by RDVM
Imaging performed by: Andi Parkinson, RDMS.

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. Mild to moderate eccentric mitral regurgitation with mild left atrial dilation. Elevated MR velocity. Decreased LV diameter with adequate myocardial function. The LV walls are significantly hypertrophied (1.2cm globally). The tricuspid valve appears normal with no 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. Significantly elevated velocity through the aortic root secondary to systolic anterior motion causing an LVOTO. No obvious aortic and or 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	7.2		NM		37	70	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	200	3.9	0.71	3.5		2.0	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 **Note: All measurements based upon multi-modal images and methods. An average value is reported.*				5	1.40 (4.5)	2.74 (5.2)	1.60 (4.7)
				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)
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				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)

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

Interesting case. Chronic degenerative valve disease is identified with mild mitral regurgitation. What is highly concerning is the patient appears extremely volume depleted, which is presumably leading to an LVOTO. This is similar to SAM in a cat, although this is suspected to be secondary given appearance of the LV (small chamber, increased wall dimensions= pseudohypertrophy). Immediate **lab work is highly recommended to screen for underlying abnormalities that may contribute**. If the patient is in fact volume depleted, the first step is correction and reassessing the heart briefly once that is performed (ie the SAM may be a secondary phenomenon that resolves or dramatically improves). If the labs are unremarkable, a primary HOCM-type pathology would be confirmed, and atenolol warranted.

Atenolol aside, no medications are indicated.

Assessment of progression in the future will help predict long term prognosis, which is guarded prior to reassessment (stage B1). Omega fatty acid supplementation and mild salt restriction may be of some long-term benefit. Monitor for development of a cough, labored breathing, exercise intolerance or collapse episodes.

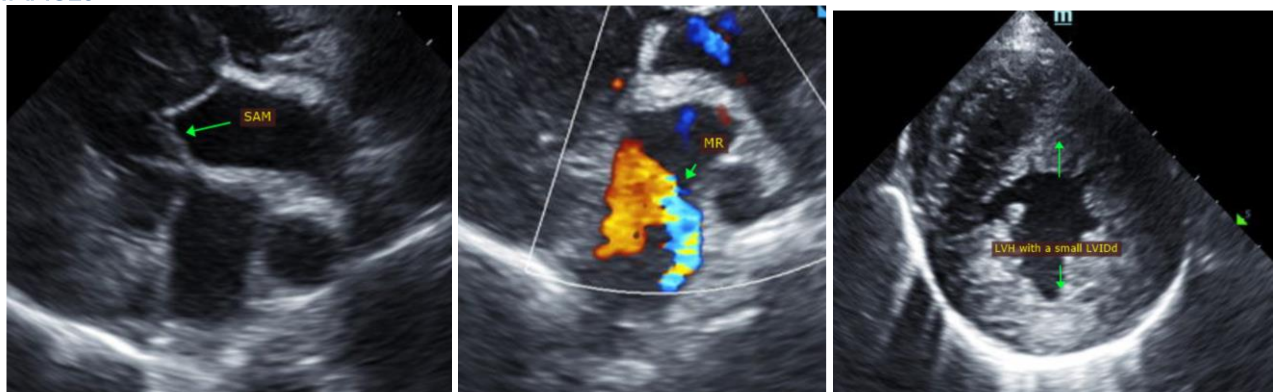
Anesthesia is not advised prior to further evaluation.

PLAN

Baseline lab work is strongly recommended to screen for anemia, dehydration, etc. If abnormal, treat accordingly and reassess LV dimensions once volume stabilized. If unremarkable or mild, consider institute atenolol 6.25mg PO q12h and assess response in 3-5 days. Target is stressed HR <140bpm and resolution of syncope.

Recommend conservative monitoring with a recheck echocardiogram in 6 months, sooner if any development 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.

Maggie Machen Lamy, DVM
Diplomate of the American College of Veterinary Internal Medicine (Cardiology)
info@sonopath.com