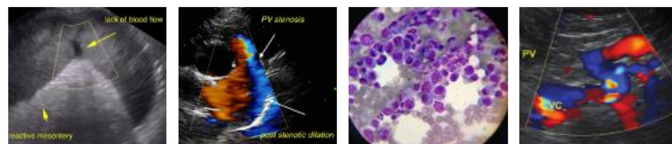
SonoPath

Clinical Sonography & Telecytology

EDUCATIONAL TELECONSULTATION SERVICES™



SonoPath.com™
1-800-838-4268 info@sonopath.com

PATIENT
Honey Knight

SPECIES
Canine

BREED
Australian Shepherd

SEX
Female Spayed

AGE
10 years

WEIGHT
37lbs

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

IMAGING PERFORMED BY
A Abadia,DVM

HOSPITAL NAME
Surfside Pet Hospital

REFERRING VET
Dr. Abadia

INVOICE
31337

DATE
6/14/23

PRESENTING CLINICAL SIGNS

History: History of either syncope/seizure daily for past three days when getting excited. Newly diagnosed heart murmur grade 3-4
-Radiographs: Slight rounding to the cardiac silhouette though not enlarged, normal pulmonary structures, partial viability of abdomen appears normal liver margins and spleen, spondylosis , fairly full stomach.

ECHOCARDIOGRAM FINDINGS

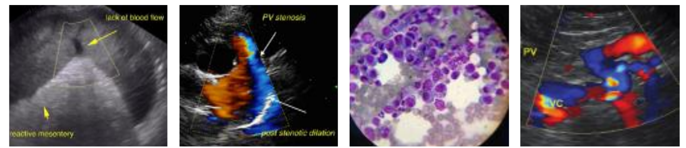
2D, m-mode, color flow and doppler imaging is available. The mitral valve is diffusely thickened (anterior > simply posterior) with mild prolapse into the left atrial lumen. There is mild eccentric mitral regurgitation present. There is no left atrial enlargement. There is no left ventricular dilation. Subtle septal flattening. Left ventricular systolic function is adequate. There is normal systolic flow velocity across the aortic valve, no insufficiency. The aortic valve appears normal. Mild right atrial/ventricular enlargement. The tricuspid valve is mildly thickened with septal prolapse and moderate tricuspid regurgitation. The tricuspid regurgitant velocity is consistent with moderate pulmonary hypertension (PG 64mmHg). The pulmonary artery and branches are dilated. The pulmonic valve is normal. Mild PI. No pericardial/pleural effusion or cardiac masses are 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	4.0	NM	1.3	47	90	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	0.8		16.8	2.5	3.6	1.9
*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)
Adapted from June Boon, Veterinary Echocardiography, 1998				20	2.02 (1.9)	4.14 (2.2)	2.80 (2.0)
Rishniw M and Hollis NE, J Vet Intern Med 2000; 14:429-435				25	2.18 (2.4)	4.48 (2.9)	3.10 (2.5)
Hansson et al, Vet Rad and Ultrasound 2002				30	2.33 (3.3)	4.83 (3.9)	3.39 (3.4)
Bonagura et al. Echocardiography: principles of interpretation, Vet Clin North Am 15:1177, 1995				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

Chronic degenerative valve disease causing mild mitral and moderate tricuspid regurgitation is identified. A lack of left atrial enlargement indicates the risk for spontaneous congestive heart failure is currently low. At least moderate pulmonary hypertension is also identified; however, with right heart enlargement. No additional issues are identified such as systolic dysfunction.



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Syncope in this patient is likely due to pulmonary hypertension. This supports the use of Sildenafil in this case, in addition to Pimobendan therapy. No obvious arrhythmias are noted in this study; however, this does not rule out intermittent brady or tachyarrhythmias as a possible contributing issue as well. A baseline ECG should be considered, particularly should they persist without a clear cause.

The underlying genesis of PAH is poorly understood in cases other than heartworm infestation, though it occurs with increased frequency in a variety of forms of chronic lung disease and in patients with idiopathic pulmonary fibrosis. If not performed, a heartworm antigen test is always recommended. No chronic respiratory issues are mentioned in the history, making it difficult to speculate on possible underlying causes.

Omega fatty acid supplementation and mild salt restriction may also be of some long-term benefit. Monitor for development of a progressive cough, labored breathing, exercise intolerance or collapse episodes.

Once the medications are altered as below, anesthetic risk is considered moderately elevated if needed. Cardiac protective drug choices (opioid/benzodiazepine premedication, propofol or alfaxalone induction, isoflurane gas) are recommended. **Pre-oxygenate for 5-10 minutes prior to induction.** Monitor for arrhythmias, hypotension, and hypoxia both intra and post-operatively and intervene as necessary. Mild IV fluid restriction is recommended to avoid fluid overload. Avoid heart rate stimulating drugs such as atropine unless clinically indicated.

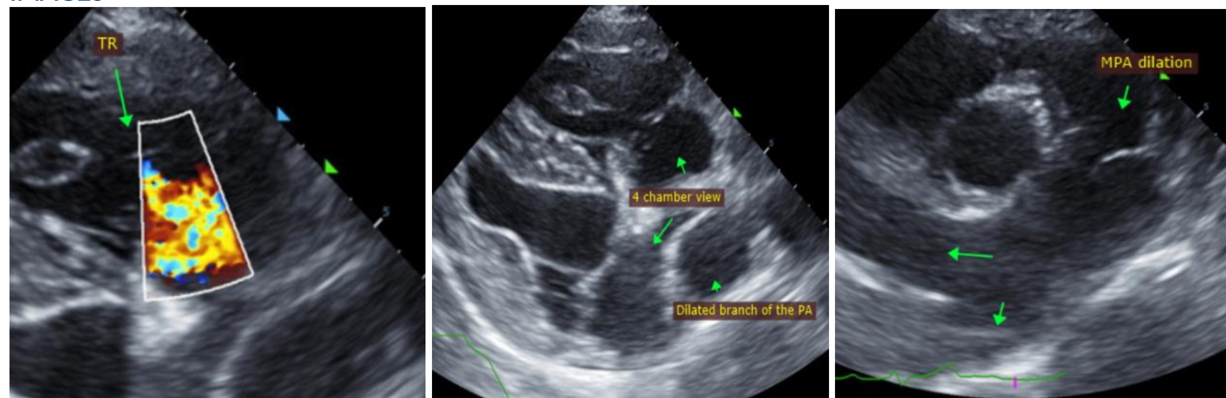
Prognosis is guarded long-term until response to medications is assessed. Patient will always be at risk for progressive disease and development of associated issues such as congestive heart failure, exertional syncope, malignant arrhythmias, and/or sudden death in the future.

PLAN

Institute Pimobendan 0.3mg/kg PO q12h. Institute Sildenafil 1-2mg/kg PO q8h. Baseline ECG recommended.

Recommend monitor for progression with a recheck echocardiogram in 6 months, sooner if any development of clinical signs.

IMAGES



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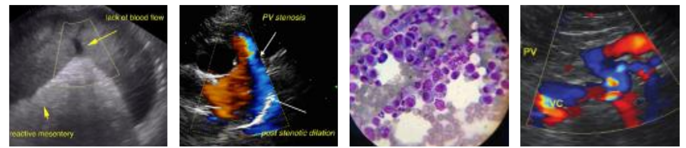

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The information and recommendations provided are based on the images presented by the referring veterinarian. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

Thank you for this referral. 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