SonoPath
Clinical Sonography & Telecytology
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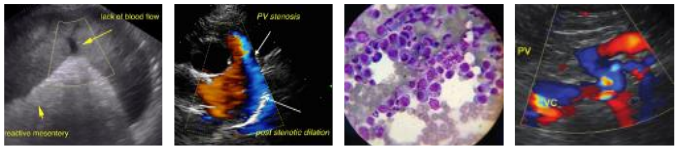

SonoPath.com
1-800-838-4268 info@sonopath.com

PATIENT
Spencer Mayfield

SPECIES
Canine

BREED
Aussie/Pitbull Mix

SEX
Male Neutered

AGE
1.1 years

WEIGHT
NP

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

IMAGING PERFORMED BY
Dana Alterman, RDCS, LVT

HOSPITAL NAME
Eubank Animal Clinic

REFERRING VET
Dr. Leonard

INVOICE
32065

DATE
8/1/23

PRESENTING CLINICAL SIGNS

History: Just adopted. Murmur noted on exam.

ELECTROCARDIOGRAPHIC FINDINGS

A six lead ECG is available at 25mm/s; 10mm/mV. The average heart rate is 120bpm with a largely regular rhythm. The rhythm is sinus in origin, with a p for every QRS complex and vice versa. The P wave morphology is positive with a normal dimension. Normal PR. The QRS is inverted. The MEA is shifted right. No ectopic beats, pauses or dysrhythmias observed.
ECG diagnosis: Normal sinus rhythm with a right axis deviation.

ECHOCARDIOGRAM FINDINGS

2D, m-mode, color flow and doppler imaging is available. The mitral valve leaflets are abnormal with a thickened and club-like anterior leaflet. Abnormal closure with mild mitral regurgitation. The left atrium is difficult to visualize; however, mild dilation is suspected. There is a large defect in the atrial septum, consistent with an ostium primum ASD. An endocardial cushion defect is suspected, although not confirmed in this image set. Normal LV diameter with mildly depressed myocardial function The LV walls are normal. The tricuspid valve leaflets appear elongated and thickened with moderate tricuspid regurgitation present. Velocity consistent with mildly elevated pulmonary pressures. Severe right atrial dilation. Severe RV dilation. Normal pulmonic outflow velocities. The PV leaflets appear normal. Mild pulmonic insufficiency. The aortic valve appears to have normal morphology and mobility. Normal aortic outflow velocities. No pericardial or pleural effusion noted.

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	5.6	3.3	NM	NM	22	44	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	1.5	1.9	NP	NM	3.9	3.1
*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)
				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)

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

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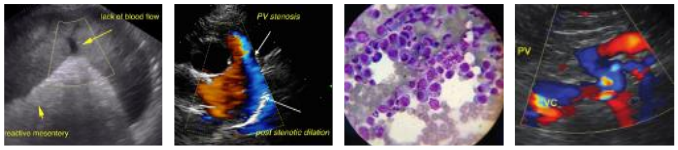

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INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

Complex congenital cardiac disease is present with a large ostium primum atrial septal defect (ASD), suspicious for an endocardial cushion defect. The right heart is massively dilated, as is common with this condition due to significant volume overload. Both AV valves are thickened and abnormal (dysplasia), which is often a concurrent issue with mild mitral and severe tricuspid regurgitation. No obvious additional issues are identified; however, with this degree of anatomic distortion small abnormalities are easily missed. The ECG shows a normal sinus rhythm with a right axis deviation. This is also typically of this type of structural disease.

The biggest concern in this case is the degree of volume overload of the right heart with high risk for associated clinical signs, including congestive failure, development of malignant arrhythmias (AF, VT, AV block, etc.), and/or sudden death at home. **Highly recommend referral to a local Cardiologist in this case for advanced imaging to confirm the diagnosis and lifelong management if possible**. An alternative would be to institute cardiac supportive medications as below in hopes of prolonging asymptomatic life. Prognosis is guarded to poor long term.

Elective anesthesia is not advised and should not be performed.

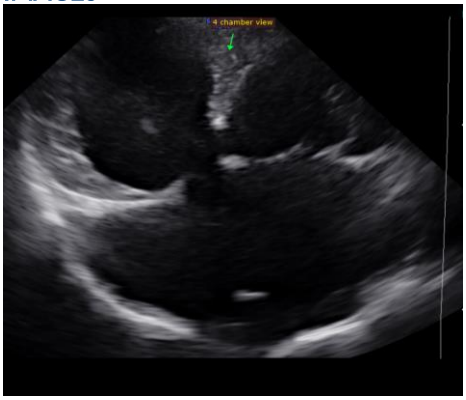
Monitor for development of associated clinical signs (collapse, abdominal distention, cough, labored breathing). Mild exercise restriction is advised. Omega fatty acid supplementation may have some long-term benefit.

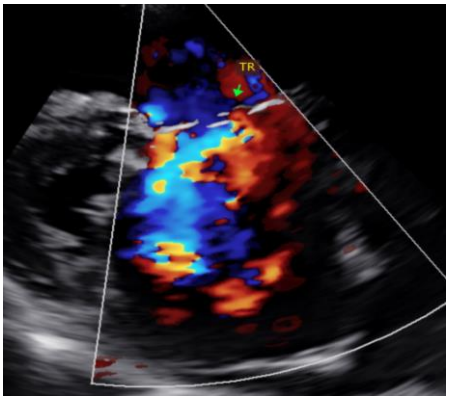
PLAN

Highly recommend referral as discussed to confirm the diagnosis and manage this complicated case. If declined, institute Pimobendan 0.3mg/kg PO q12h. Institute Spironolactone 1-2mg/kg PO q12h. Pending BP assessment >130mmHg, institute ACE-I 0.5mg/kg PO q12h. Lasix should be initiated should any respiratory signs develop at home.

If referral is declined, recommend recheck echocardiogram in 6 months. A PCV should be monitored for hemoconcentration and need for Phlebotomy lifelong.

IMAGES





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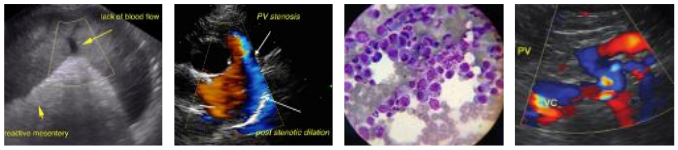

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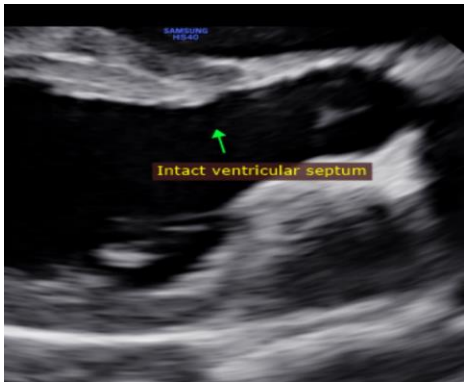

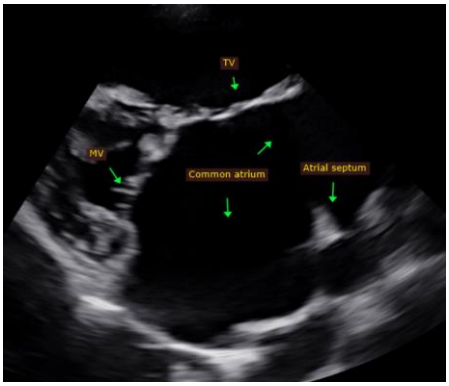

The information and recommendations provided are based on the images presented by the referring veterinarian. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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