PATIENT

Origami Castelletto

SPECIES

Canine

BREED

Pomeranian

SEX

Intact Female

AGE

1 Year 3 Months

WEIGHT

5 Pounds

INTERPRETED BY

Sara Brethel, DVM, DACVIM (Cardiology)

IMAGING PERFORMED BY

Kathleen Byrnes

HOSPITAL NAME

AH of Boone

REFERRING VET

Dr. Watson

INVOICE

35398

DATE

1/13/26

PRESENTING CLINICAL SIGNS

History: P presented for exam, heart murmur found on exam. rdvm rec echo

ULTRASONOGRAPHIC EXAMINATION OF THE HEART

CANINE CARDIAC PARAMETERS	**MR VMAX** (m/s)	**TR VMAX** (m/s)	**LA/AO** (M-Mode)	**LA/AO** (Heart Base; Swe)	**FS** (%)	**EF** (%)	**EPSS** (cm)
NORMAL PARAMETER	4.5-5.5	<2.7	1.3	Up to 1.6	28-40	40-100	<0.6
PATIENT	--	--	--	1.38	35.14	66.35	--
CANINE CARDIAC PARAMETERS	**HR** (BPM)	**AV VMAX** (m/s)	**PV MAX** (m/s)	**BODY WEIGHT** (kg)	**LAD** LA MAX 4 Chamber	**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				
PATIENT	124	1.32	0.57	2.27	2.0	2.79	1.81

PDA peak systolic: ~5.0

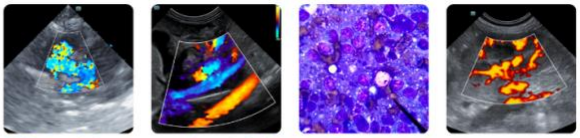
Cardiac Presentation

The mitral valve leaflets are normal and there is no mitral regurgitation. The rhythm is sinus. There is no prolapse of the mitral valve leaflets. The left atrial size is normal, however La:Ao measurements are skewed due to increased aortic root measurements. There is evidence of eccentric left ventricular hypertrophy. Mitral inflows are normal. There is normal right atrial size without evidence of tricuspid regurgitation. There is no prolapse of the tricuspid valve leaflets and no evidence of pulmonary hypertension on this evaluation. The right ventricle appears normal in structure and function. The aortic and pulmonic valves had normal morphology and the corresponding outflow velocities are normal. There is continuous flow over the region of the ductus. There is no evidence of pulmonic or aortic insufficiency. The aorta and pulmonary artery appear mildly dilated. Pulmonic artery branches appear normal. There is no evidence of an ASD or VSD. There is no evidence of pleural effusion, pericardial effusion, or intracardiac masses.

ULTRASONOGRAPHIC FINDINGS

- PDA, left to right shunting
- Eccentric left ventricular hypertrophy

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS



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The patient has evidence of a PDA. The ductus arteriosus is a fetal vessel that connects the main pulmonary artery and aorta. Normally, it closes shortly after birth. Patent Ductus Arteriosus (PDA) is when this extra blood vessel does not close properly. PDA is one of the most common congenital (present since birth) heart defects of dogs. PDA typically causes a volume overload of the left side of the heart (left atrium and left ventricle) as well as the blood vessels in the lungs. Over time, the left side of the heart may not be able to compensate for the extra blood flow and signs of left-sided congestive heart failure can occur. Signs of this include lethargy, weakness, decreased energy levels/activity levels, coughing, difficulty breathing or sometimes collapse episodes. An additional concern is that the blood flow in the extra blood vessel can reverse, which can result in mixing of unoxygenated blood with oxygenated blood. While rare, this is a very serious problem and is not fixable. There is no evidence of this on today's evaluation.

The treatment for a PDA is occlusion of this extra blood vessel, either with a device (eg. Amplatz Canine Ductal Occluder) placed inside the blood vessel, or the PDA can be surgically ligated (tied off). Without surgical correction, the heart will continue to enlarge and increase the risk for congestive heart failure limiting the patient's life span. Typically, once corrected, patients with this condition go on to live normal life spans. Referral to a veterinary cardiologist and/or boarded surgeon is recommended for closure. Due to the dilation of the heart, pimobendan therapy is recommended. This may not be a lifelong medication once the PDA is closed. A dose of 0.27-0.32 mg/kg is recommended. The client should start monitoring respiratory rate and effort at home if not already doing so. The resting respiratory rate should be < 35-40 breathes/minute when the patient is resting or sleeping. If the breathing rates are increasing, then chest radiographs are recommended.

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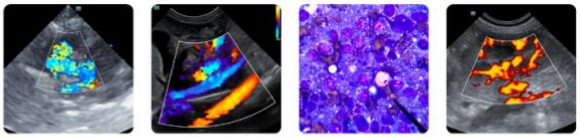

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Educational Teleconsultation Services™

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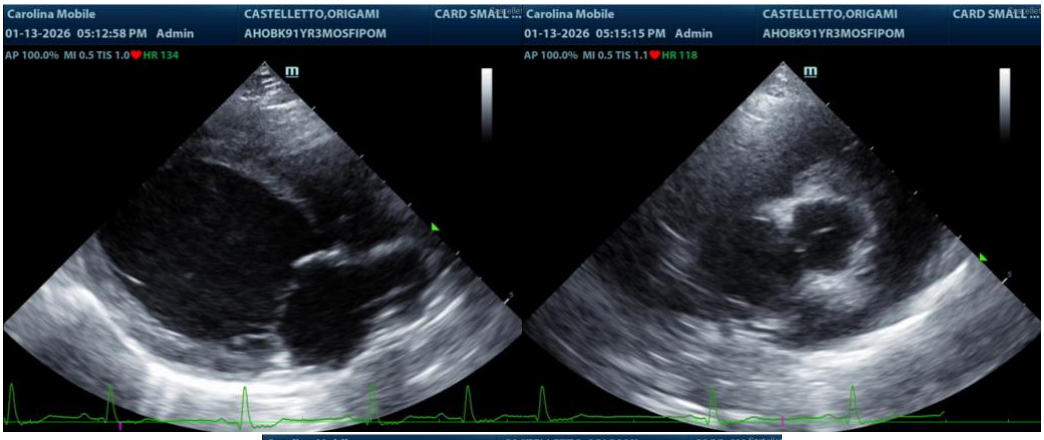

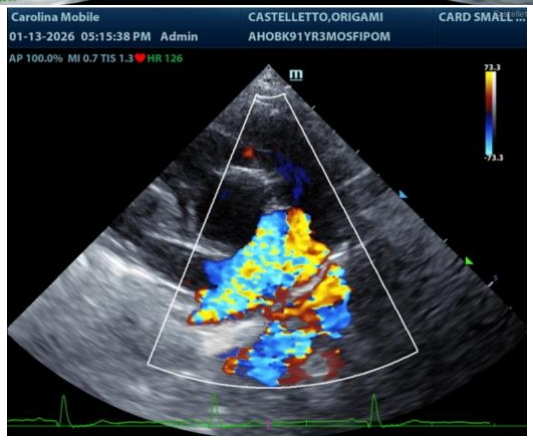

The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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.

Sara Brethel DVM, DACVIM (Cardiology)

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