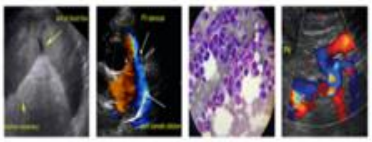
Mass Veterinary Services



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

PATIENT
Boba Fetch Stanton

SPECIES
Canine

BREED
German Shepherd

SEX
Male Intact

AGE
13 weeks

WEIGHT
18.2lbs

INTERPRETED BY
Maggie Machen Lamy, DVM DACVIM (Cardiology)

IMAGING PERFORMED BY
Pamela Harrigan, RDCS

HOSPITAL NAME
Mass Veterinary Services

REFERRING VET
Dr. Masloski

INVOICE
25263

DATE
7/12/22

PRESENTING CLINICAL SIGNS

History: Boba Fetch is referred to evaluate an arrhythmia recently noted. He is eating well and remains playful. On exam, possible arrhythmia, no murmurs noted, PSS, lung fields clear (puppy very active during exam). BP: 110mmHg x 4.

ECHOCARDIOGRAM FINDINGS

2D, m-mode, color flow and Doppler imaging is available.
Left ventricle: The LV diameter is borderline with increased sphericity. Adequate myocardial function with mild evidence of volume overload. LV wall thicknesses are normal.
Left atrium: The left atrium is mild to moderately dilated
Mitral valve: The mitral valve is normal with trivial central mitral regurgitation.
Aortic valve/Aorta: The aortic valve is normal in morphology and mobility. Mildly elevated aortic outflow velocity; laminar flow. No aortic insufficiency.
Right ventricle: Normal right ventricular diameter and morphology indicating no overt evidence of pulmonary arterial hypertension.
Right atrium: Normal RA dimension.
Tricuspid valve: The tricuspid valve appears normal with trivial tricuspid regurgitation.
Pulmonic valve/Pulmonary artery: The pulmonic valve is normal in morphology and mobility. No pulmonic insufficiency. Normal RVOT velocity; laminar flow. Continuous flow detected with color Doppler in the distal pulmonary artery in the region of the ductus arteriosus. A PDA is visualized on 2D imaging. High velocity shunt; L-R (4.5m/s). No PI.
Pericardium/other: No pericardial or pleural effusion noted. No obvious cardiac masses.
Heart rhythm: ECG reveals a sinus rhythm with an average HR of 166bpm.

2-Dimensional Measurements

Ao diam (cm)	1.7
LA diam (cm)	2.7
LA:Ao (Swe)	1.6
IVS thickness (cm)	0.6
LVID diastole (cm)	2.8
PW thickness (cm)	0.6
LVID systole (cm)	1.9
FS (%)	32

Doppler Measurements

PV Vmax (m/s)	1.0
AoV Vmax (m/s)	1.5
MR Vmax (m/s)	NA
TR Vmax (m/s)	NA
TR PG (mmHg)	NA

INTERPRETATION OF THE FINDINGS

The cause of the murmur is a patent ductus arteriosus (PDA). This is a congenital condition where a blood vessel present in the fetus remains open after birth. When patent, this allows blood to recirculate through the lungs inappropriately and volume overloads the left heart chambers as is seen here. No additional issues are seen. The LA is moderately dilated indicating relatively low risk for imminent complication; however, this degree of volume overload at such a young age is certainly concerning. No obvious arrythmias are visualized and a holter monitor may be warranted.

If left open, this condition will shorten lifespan, with risk for progression to CHF in the future. Even without symptoms, cardiac support with Pimobendan is recommended regardless of if surgical closure is an option as below. Gold standard therapy includes medical support and ASAP referral for surgical closure of the vessel. This can be done interventionally or through a thoracotomy, and consultation with a local Cardiologist is recommended ASAP. Success rates for the procedure are generally high and will help give the best prognosis possible. Whether the LV dilation resolves with closure or persists to

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some degree cannot be predicted, however I am hopeful given the mild nature that the former would be the case.

Going forward the patient will be at risk for progression to CHF, development of arrhythmias, PDA reversal due to development of pulmonary hypertension, exertional syncope, and/or sudden death at home.

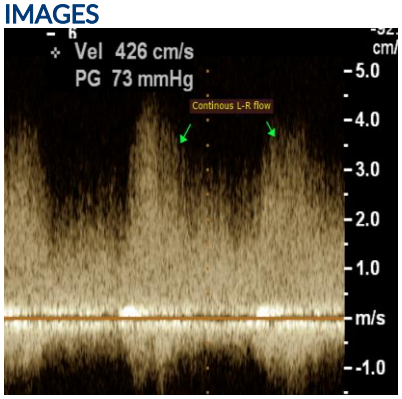
RECOMMENDATIONS

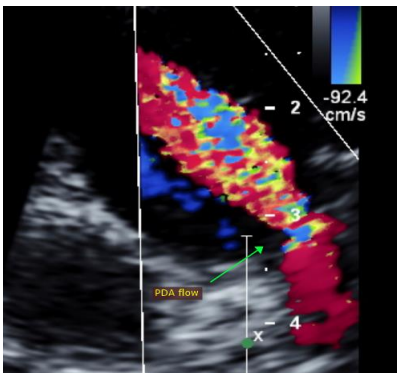
- Institute Pimobendan 0.2-0.3mg/kg PO q12h.
- Consider a holter monitor as discussed.
- Referral for surgical consultation ASAP.
- Omega fatty acid supplementation and mild salt restriction may be of some long-term benefit.
- Mild activity restriction is advised.
- Monitor for development of a cough, labored breathing, exercise intolerance or collapse episodes.

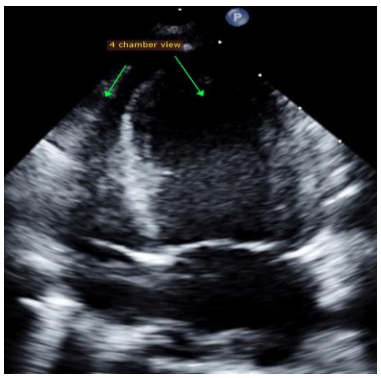
PLAN

- If surgery is not an option, recommend recheck exam and echocardiogram in 4-6 months to screen for progression and need for additional medications, sooner if clinical signs arise (progressive cough, labored breathing, syncope, etc.).
- If surgical closure is performed, recheck as dictated by the surgical report (typically 2-3 months following closure to determine if medication can be discontinued.

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

Echocardiogram performed by: Pamela Harrigan, RDCS
Pet Animal Ultrasound Service (4paus.com)