



PATIENT PRESENTING CLINICAL SIGNS

Chloe Jackson Heart Murmur Grade 3/4 Murmur Comments: _left apical_,
Abnormal PE/Chem/CBC/UA Results: No recent labs performed. ECG WNL, will be emailed separately. Heart Rate and Respiratory Rates Low HR- 120; High HR- 170 ; Low RR - 24 ; High RR -70.
Blood Pressure Measurements (187/106:128map 7/15/22) ; (232/138:169map 3/15/22) ; (118/104:108map 4/7/18) ; (176/127:142map 6/18/17)

SPECIES BREED ULTRASONOGRAPHIC EXAMINATION OF THE HEART

Chihuahua

SEX

Spayed Female

AGE

11 Years

WEIGHT

9.1 Pounds

INTERPRETED BY

Lisa Carioto, DVM,
DVSc, Diplomate
ACVIM

IMAGING PERFORMED BY

Dr. Sara Hansen

HOSPITAL NAME

Ark Animal Hospital

REFERRING VET

Dr. Jackson

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CANINE CARDIAC PARAMETERS	MR VMAX (m/s)	TR VMAX (m/s)	LA/AO (Boon method)	LA/AO (Heart Base; Swedish)	FS (%)	EF (%)	EPSS (cm)
NORMAL PARAMETER	4.5-5.5	<2.7	1.3	<1.6	28-40	40-100	<0.6
PATIENT	Moderate - marked	Mild	1.6	1.6	55	NM	0.14
CANINE CARDIAC PARAMETERS	HR (BPM)	AV VMAX (m/s)	PV MAX (m/s)	BODY WEIGHT kg	LA 2D long 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				
PATIENT	144	1.13	0.97	4.14	19.9	Long 2.00 most likely underestimated	Long 0.90 most likely underestimated

Adapted from June Boon, Veterinary Echocardiography, 1998
Sisson D et al. JVIM 1991; 5: 232, and Jacobs et al. Am J Vet Res 1985; 46:1705

Electrocardiogram

Not available

Echocardiographic findings

Mitral valve

- Mild (posterior) to moderate thickening and irregularity; consistent with myxomatous degeneration
- Moderate to marked prolapse of both leaflets.
- Moderate to marked mitral regurgitation.
- Moderate left auricular enlargement.
- LA: Ao ratio = high end of normal reference range
- Left ventricle measurements: high index of suspicion of pseudohypertrophy, possible subclinical dehydration
- LA normalized for BW (LAN = 1.23); moderate enlargement



PATIENT	<ul style="list-style-type: none"> LVIDd normalized for BW (LVIDND = 1.3); within normal limits (underestimated)
Chloe Jackson	<ul style="list-style-type: none"> LVIDs normalized for BW (LVIDNs = 0.58); decreased (underestimated)
SPECIES	<i>Aortic valve</i>
Canine	<ul style="list-style-type: none"> No abnormalities No aortic insufficiency
BREED	<i>Tricuspid valve</i>
Chihuahua	<ul style="list-style-type: none"> Mild thickening and irregularity (septal more severe than posterior); consistent with myxomatous degeneration Mild prolapse of septal leaflet. Mild tricuspid regurgitation. No right ventricular or atrial enlargement.
SEX	<i>Pulmonic valve</i>
Spayed Female	<ul style="list-style-type: none"> No abnormalities No pulmonary insufficiency. Main pulmonary artery within normal limits. Pulmonary artery - bifurcation, no abnormalities. Pulmonary artery: aortic ratio – No obvious abnormalities noted. No signs of heart worm.
AGE	<i>Other</i>
11 Years	<ul style="list-style-type: none"> No signs of pericardial or pleural effusion No evidence of pulmonary edema. Pulmonary veins, no abnormalities. No obvious signs of a mass.
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REFERRING VET	ULTRASONOGRAPHIC FINDINGS
Dr. Jackson	<ul style="list-style-type: none"> Myxomatous degeneration of the mitral (moderate) and tricuspid (mild) valves, ACVIM stage B2, with moderate left atrial enlargement. Measurements for the left atrium and left ventricle are most likely underestimated, i.e. mild, subclinical hypovolemia is suspected based on the appearance of Chloe's heart. She may not have had a drink prior to the consultation. The fractional shortening is increased, which shows that Chloe's heart is working harder than it should be to perform its normal work. Based on the latter finding, the left atrial enlargement and high index of suspicion of an enlarged left ventricle, administration of pimobendan (Vetmedin) is suggested to help slow the progression of her heart disease.
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- There are no signs of congestive heart failure

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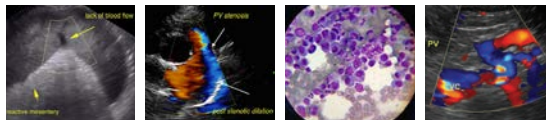
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INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

Suggestions/recommendations include:

- Evaluation of blood pressure – already performed. Most likely falsely elevated. A re-evaluation of her blood pressure with the clients present is suggested (when no other tests are performed).
- Baseline blood work and a urinalysis would be ideal to exclude other disease processes. Note, pimobendan is not renally excreted.
- pimobendan 0.25-0.30 mg/kg PO every 12 hours. If sensitive GI system, the dose should be started at 0.10 mg/kg PO every 12 hours for 3 days prior to increasing to the full dose. Administer with a small amount of food to decrease nausea.
- Monitoring of the resting (sleeping) respiratory rate (RRR) is highly recommended once a day. The RRR should NOT EXCEED 30 breaths per minute (bpm). If the respiratory rate is greater than 30 bpm, or if there is a gradual increase (over a day or two) toward 30 bpm, the patient should be evaluated immediately for congestive heart failure and the appropriate treatment initiated.
- Other clinical signs clients should monitor for include coughing (particularly at night), fatigue, lethargy, decreased exercise tolerance (i.e., not being able to walk for as long before becoming tired, or “running out of breath” while playing, or going up and down stairs, as well as syncope (collapsing or fainting spells). Restlessness, or agitation during the night, or being unable to find a comfortable position to sleep are also very common clinical signs.
- Mild salt restriction is suggested (less than 0.9 grams/1000 kcal of food). Monitor salt content in treats.
- Monitoring for progression of heart disease with a re-evaluation of an echocardiogram every 6 to 8 months, or sooner if clinical signs develop, is recommended.



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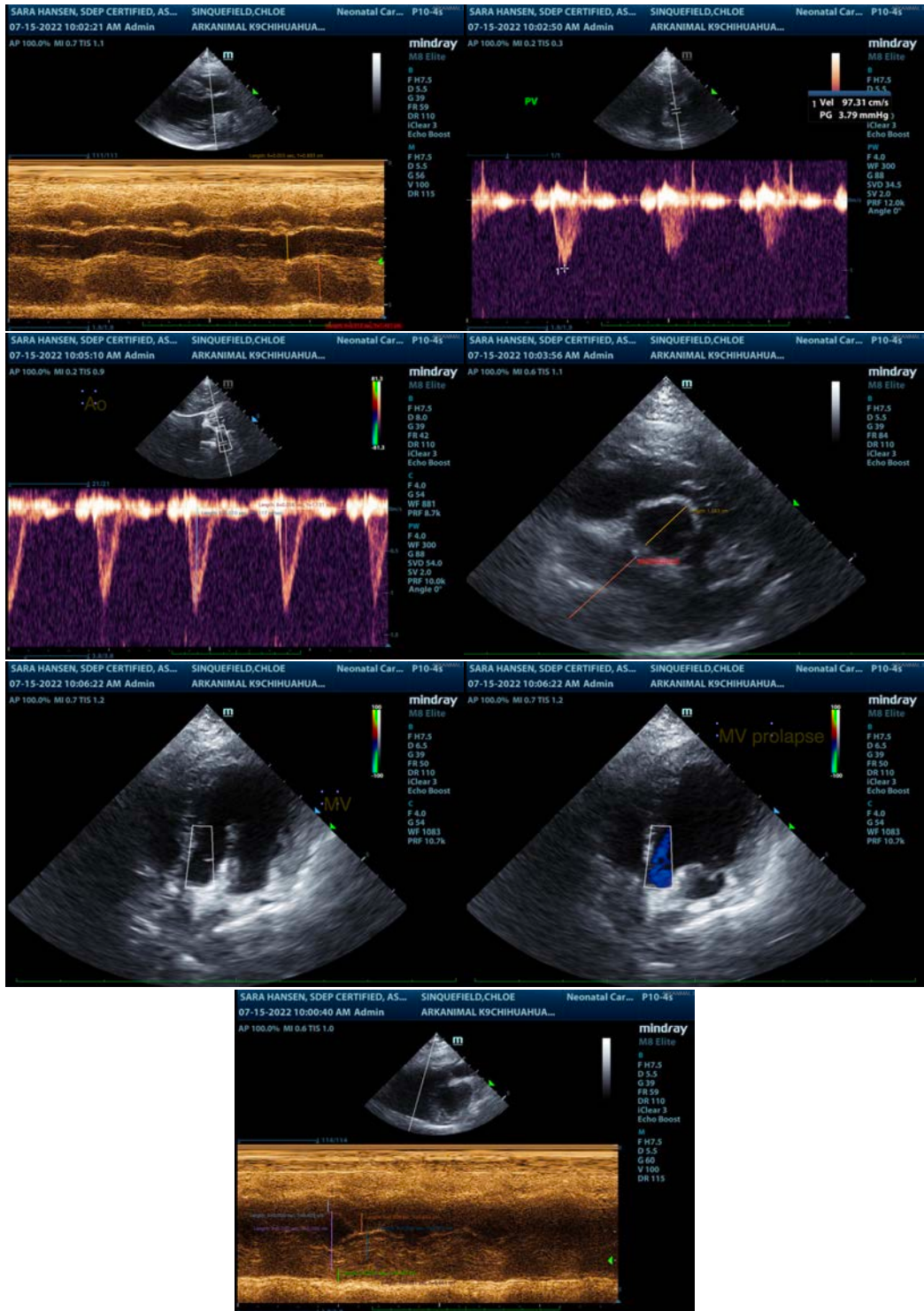
Dr. Jackson

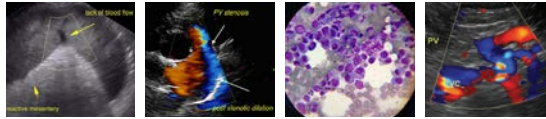
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The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

SPECIES

Canine

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.

Lisa Carioto, DVM, DVSc, Diplomate ACVIM

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Lisa.Carioto@sonopath.com

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