



## PATIENT

Tako Hawkins

## SPECIES

Canine

## BREED

Dogo Argentino

## SEX

Male Neutered

## AGE

4 years

## WEIGHT

71.7lbs

## INTERPRETED BY

Maggie Machen Lamy,  
DVM, DACVIM  
(Cardiology)

## IMAGING PERFORMED BY

Mark van Campen,  
DVM

## HOSPITAL NAME

Mississippi Hills  
Animal Hospital

## REFERRING VET

Dr. van Campen

## INVOICE

28181

## DATE

1/9/23

## PRESENTING CLINICAL SIGNS

History: Grade 2/6 heart murmur. Asymptomatic.

## ECHOCARDIOGRAM FINDINGS

2D, m-mode, color flow and doppler imaging is available. Normal mitral valve leaflets with no obvious prolapse into the left atrial lumen. No mitral regurgitation. Normal left atrial dimension. Normal LV diameter with normal myocardial function. The LV wall thickness is normal. The tricuspid valve appears normal in form and function. No right atrial dilation. Mild right ventricular prominence with mild hypertrophy. Mild elevation of pulmonic outflow velocities. Pulmonic valve is unable to be visualized. No significant dilation of the main or branch PA's. Mild pulmonic insufficiency. The aortic valve appears to have normal morphology and mobility. Normal LVOT velocity. No pericardial or pleural effusion noted. No obvious cardiac masses.

## 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	NA	NA	1.6	1.3	35	70	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	1.6	3.0	32.5	2.7	3.4	2.2
*Normal chamber parameters expressed as a mean value (SD)				3	1.27 (5.3)	2.46 (2.46)	1.36 (5.5)
<b>BODY WEIGHT DEPENDENT PARAMETERS</b>				5	1.40 (4.5)	2.74 (5.2)	1.60 (4.7)
<i>*Note: All measurements based upon multi-modal images and methods. An average value is reported.</i>				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)

## INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

Elevated flow velocity through the pulmonic valve is noted, consistent with pulmonic stenosis. The valve cannot be visualized; however, a mild valvular component is suspected. The degree of obstruction is mild based upon the velocity/pressure gradient across the pulmonic valve and minimal secondary hypertrophy and remodeling of the right ventricle (mild PG is <50mmHg). No tricuspid regurgitation or other issues are noted.

Mild PS cases typically do not impact a patient clinically, and most are able to live a normal life free of complications. That being said, risk for progression to clinical signs will always remain and periodic monitoring is advised.



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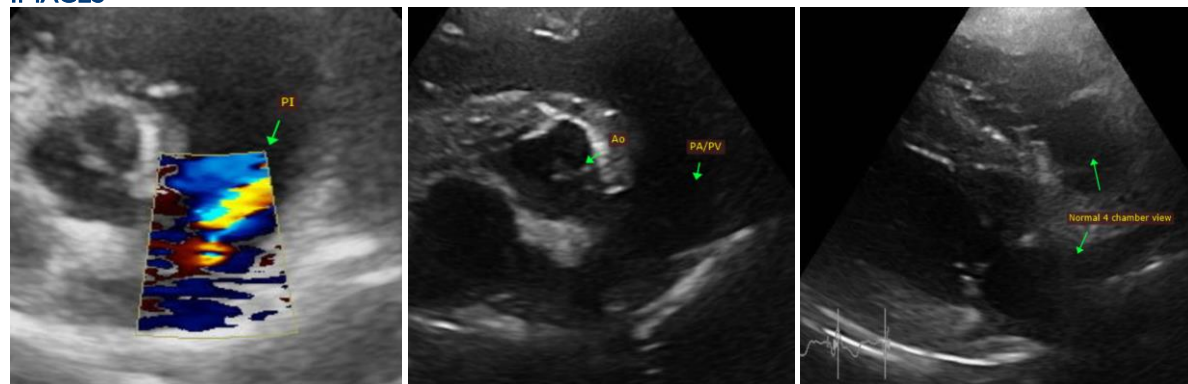
Given mild disease I would not recommend surgical intervention in this case. Medical management with atenolol is often recommended in moderate or severe cases, with mild often not requiring therapy. Given that this case is free of symptoms and mild in severity, it is reasonable to simply monitor going forward rather than instituting lifelong medications. Referral to a local cardiologist should be considered to discuss advanced imaging and potential medical and surgical options if the client is interested.

Anesthetic risk is considered mildly elevated. **Avoid heart rate stimulating drugs such as atropine or glycopyrrolate.** Avoid excessive vasodilation/hypotension. Pre-oxygenate for 5-10 minutes prior to induction. A reasonable protocol would be as follows: premedicate with opioid/benzodiazepine, propofol or alfaxalone induction, isoflurane maintenance. Monitor ECG, BP as is standard. Monitor for hypoxia in recovery; utilize O2 chamber if needed. Mild IV fluid restriction is advised.

Monitor for development of associated clinical signs (exertional collapse, abdominal distention, cough, labored breathing). Omega fatty acid supplementation may have some long-term benefit, given that these cases are predisposed to development of arrhythmias going forward. Breeding is not advised as this condition is genetically linked.

Recommend recheck echocardiogram in 12 months to assess for progression, sooner if clinical signs arise in the interim.

## 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  
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