



PATIENT

Cleo Skelton

SPECIES

Canine

BREED

French Bulldog

SEX

Female Intact

AGE

2 years

WEIGHT

25.3lbs

INTERPRETED BY

Maggie Machen Lamy,
DVM, DACVIM
(Cardiology)

IMAGING PERFORMED BY

Sarah Pender, CVT

HOSPITAL NAME

SVS Imaging QC

REFERRING VET

Dr. Joy

INVOICE

28479

DATE

1/20/23

PRESENTING CLINICAL SIGNS

History: Historic grade 3/6 heart murmur. Sedated with 0.2mg/kg Torb.

RADIOGRAPHIC FINDINGS *NOTE: Images submitted for supplemental cardiac information only.

Marked right-sided cardiomegaly. No obvious evidence of CHF.

ELECTROCARDIOGRAPHIC FINDINGS *Note: Single lead ECGs are evaluated as a rhythm strip.

Morphology/MEA cannot be definitively commented on.

A single lead ECG is available; 25mm/s, 10mm/mV. The average heart rate is 100bpm (range 65-150bpm). The rhythm is sinus in origin, with a p for every QRS complex and vice versa. The P and QRS morphologies are positive. No ectopic beats, pauses or other dysrhythmias observed. ECG diagnosis: Normal sinus rhythm with respiratory variation.

ECHOCARDIOGRAM FINDINGS

2D, m-mode, color flow and doppler imaging is available. Dysplastic tricuspid valve leaflets with a tethered septal component. Stenosis is suspected, although not confirmed. Distorted RV papillary musculature. The right ventricle is significantly hypertrophie. Marked tricuspid regurgitation with marked right atrial dilation. Mild RV enlargement. The LV diameter is decreased with adequate myocardial function. The LA is decreased in dimension. Mitral valve appears normal with no obvious mitral regurgitation. Normal aortic and pulmonic outflow velocities on Spectral doppler; however, the latter is sought to be an underestimation. The pulmonic valve/MPA are unable to be well visualized. The aortic valve is normal with no aortic insufficiency. No obvious congenital shunts. No pleural or pericardial effusions seen.

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	5.5	NM	1.0	54	87	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	1.1	11.5	1.2	2.1	1.0
*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)
<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

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Unfortunately this patient has severe right-sided congenital heart disease. The cause of the murmur is suspected to be tricuspid valve dysplasia with severe tricuspid regurgitation. Stenosis is suspected, although not confirmed on this image set without tricuspid inflows. Regardless, massive tricuspid regurgitation and marked secondary RA dilation are present indicating high risk for imminent complication. There is also significant RV hypertrophy, suggesting pressure overload, which is supported by an elevated TR velocity. The cause of this is unknown. Rule outs include pulmonic stenosis, a double chamber right ventricular (DCRV), pulmonary atresia or other abnormality. The left heart appears normal to small with evidence of volume unloading and no additional issues are identified. The ECG shows a normal sinus tachycardia, with no arrhythmias appreciated.

Given the severity and complexity of this case, **highly recommend referral to a local Cardiologist for advanced echocardiography**. There may be surgical/interventional options depending on the definitive diagnosis that may change outcome to some extent. If declined, full medical management is recommended due to high risk for imminent decompensation as below. Patient will always be at high risk for right-sided CHF and/or development of arrhythmias such as atrial fibrillation, collapse and/or sudden death going forward.

The long-term prognosis is poor, as the degree of right heart enlargement will certainly limit lifespan. Activity restriction is advised. Omega fatty acid supplementation and mild salt restriction may be of some long-term benefit.

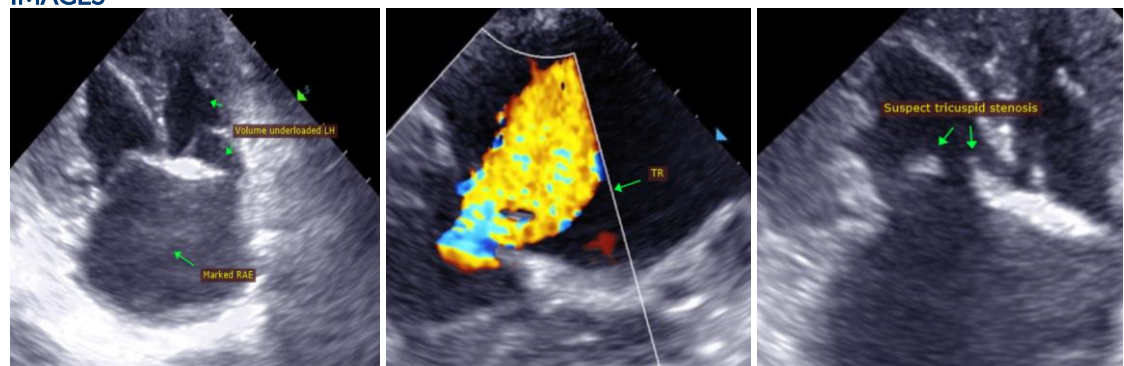
Elective anesthesia is not advised.

Monitor closely at home for development of any associated clinical signs, including abdominal distention, labored breathing, and/or collapse episodes or lethargy.

PLAN

Highly recommend referral as discussed for advanced echocardiography. If declined, consider the following medications: Administer heart muscle support Pimobendan (Vetmedin) 0.3mg/kg PO q12h. Administer vasodilator/anti-fibrotic Benazepril or Enalapril 0.5mg/kg PO q12h. Administer aldosterone antagonist Spironolactone 1mg/kg PO q12h (available in 25 and 50mg tablets). Administer Lasix 1mg/kg PO q12h.

A recheck echocardiogram is recommended in 6 months to screen for progression, sooner if any clinical signs arise.

IMAGES

IMAGING PERFORMED BY

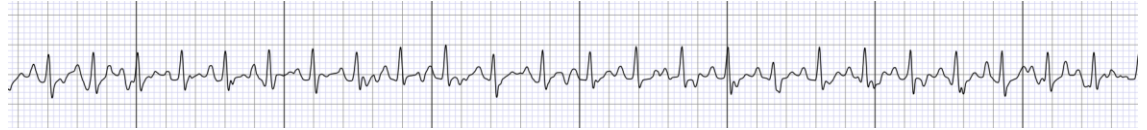
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1-800-838-4268 info@sonopath.com SonoPath.com

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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.

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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.

SEX

Female Intact

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Diplomate of the American College of Veterinary Internal Medicine (Cardiology)
info@sonopath.com

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