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Clinical Sonography & Telecytology
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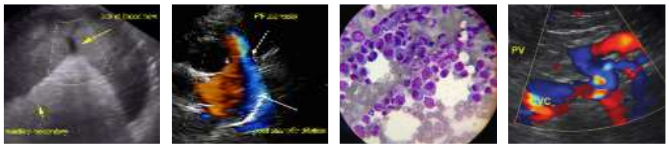

SonoPath.com
1-800-838-4268 info@sonopath.com

PATIENT
Rocky Beyer

SPECIES
Canine

BREED
Yorkie

SEX
Intact Male

AGE
10 years

WEIGHT
5.7 lbs.

INTERPRETED BY
R. McKenzie Daniel, DVM, DABVP (Canine and Feline)

IMAGING PERFORMED BY
Kim Leidberg

HOSPITAL NAME
SVS Imaging WI

REFERRING VET
Dr Gimenez, Animal Hosp. of Gurnee

INVOICE
12344

DATE
10/11/21

PRESENTING CLINICAL SIGNS

Chronic coughing newly diagnosed heart murmur Grade 4-5/6 left apical. Severe dental disease. Painful when chewing, halitosis. No cough elicited on tracheal palpation. Need recommendation for anesthesia for dental cleaning. On Clavamox drops and hydrocodone for pain.

ULTRASONOGRAPHIC EXAMINATION OF THE HEART

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	5.0 m/s	3.4 m/s MAX	NM	1.33	47.4	82.3	0.2
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	170	1.0	0.9		2.0	1.9	

Cardiac Presentation

The echocardiogram in this patient demonstrated normal **left atrial** size based on 3 different LA measurement methods. Chamber volumes and echogenicity were normal. The cranial and caudal **mitral** valve leaflets presented vegetative thickening consistent with endocardiosis. No evidence of valvular prolapse or chordae tendineae rupture. Doppler indicated measurable eccentric mitral valve insufficiency. The **left ventricle** presented thicknesses with linear contour and was not dilated nor restricted. The **myocardium** presented normal echogenicity without subjective evidence of significant fibrotic or ischemic disease. **Contractility** of the ventricular walls was adequate and in normal range for this patient evidenced by the fractional shortening measurement and subjective evaluation of the different regions of the myocardium. The **left ventricular outflow** tract demonstrated normal laminar flow and subjective structural integrity. The **right atrium** and auricle revealed normal size, structure and content. No evidence of masses was noted or chamber overload. **Tricuspid** valvular assessment demonstrated mild thickening. Color doppler assessment of the tricuspid valve revealed concurrent tricuspid valve insufficiency. The **right ventricle** was of normal size (1/3 diameter of LV), chordae structure, myocardial echogenicity and thickness. **Pulmonic** tract assessment revealed normal valve structure, laminar flow, and diameter (approx.1:1 pa/ao ratio). No visible **pericardial** or free pleura fluid was noted. No echographically detectable evidence of infiltrative disease was visible. The cranial **mediastinum and pericardial regions** were free of masses in the visible window.

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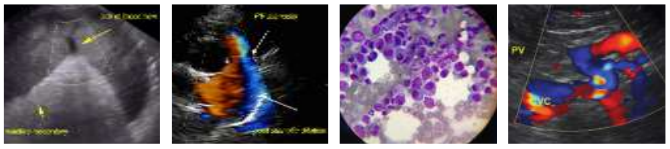

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ULTRASONOGRAPHIC FINDINGS

Primary Findings

- Chronic mitral valve disease (ACVIM B1)
- Tricuspid valve insufficiency - estimated pulmonary pressure gradient (approximately 46-47 mm HG), consistent with mild to moderate pulmonary hypertension

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

The cause of the murmur is chronic degenerative valvular changes with secondary eccentric mitral valve insufficiency. The lack of left atrium enlargement secondary to mitral valve insufficiency indicates that the hemodynamic effects of the mitral valve insufficiency are mild and that the risk for future complication secondary to mitral valve insufficiency is low.

The underlying etiology of mild to moderate pulmonary hypertension is often unclear with potential considerations in this case Including; primary chronic respiratory disease / hypoxia, pulmonary thromboembolic disease, heartworm disease, or other mechanisms given the lack of left heart volume overload.

Given these findings, anesthetic risk is considered mildly elevated, yet not overtly contraindicated. Some or all of the following anesthetic protocol is recommended. Screening blood pressure prior to anesthesia is suggested. This patient may be at risk for fluid overload, therefore judicious fluid use under anesthesia is advised.

It is unclear if the estimated pulmonary pressure gradient may be contributing to the coughing, although this is a possibility. Lower airway therapy is recommended with consideration for low-dose Sildenafil trial at 0.5 - 1 mg/kg PO BID if clinical signs consistent with pulmonary hypertension i.e., consistent to progressive coughing, syncope, etc., are noted with assessment of clinical response. Recheck echocardiogram is suggested in 6 months, sooner if clinical signs consistent with left-sided congestion or clinical pulmonary hypertension are noted.

Suggested anesthetic protocol may include opioid or Benzodiazepine pre-med, induction with Propofol or Alfaxalone, and appropriate gas anesthesia with avoidance of alpha 2 agonists.

https://www.antechdiagnostics.com/cadet-braf

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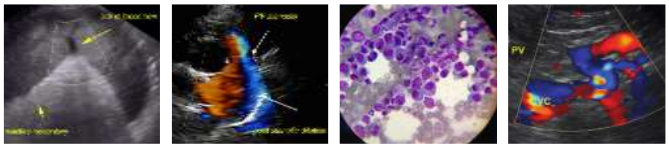

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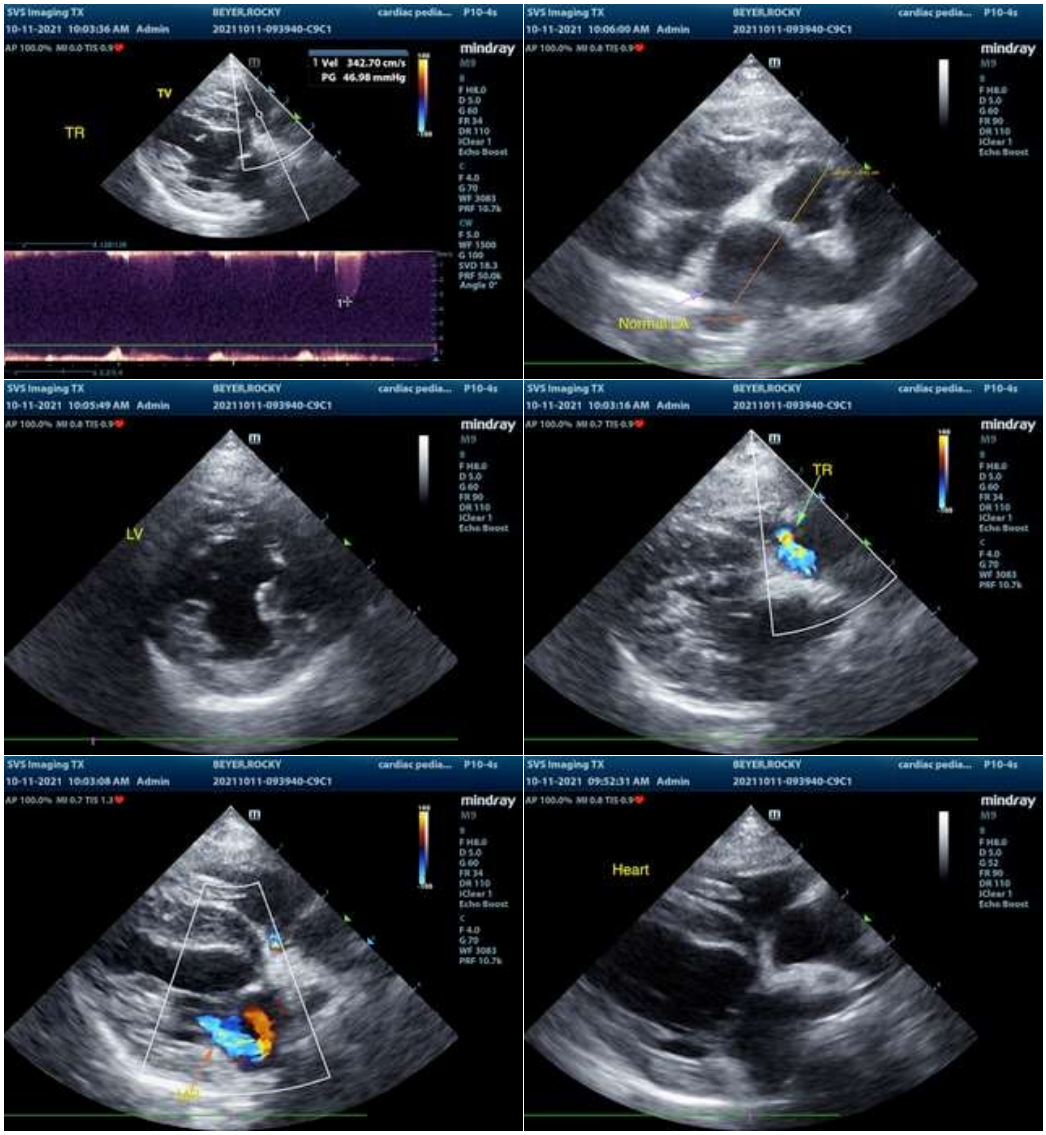

The information and recommendations provided are based on the images presented by the referring veterinarian. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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.

R. McKenzie Daniel, DVM, DABVP (Canine / Feline Practice)
info@SonoPath.com