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Clinical Sonography & Telecytology
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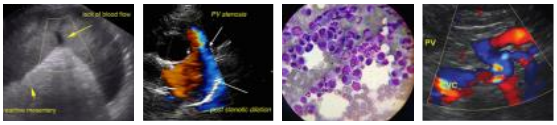


ANIMAL SOUNDS NW
MOBILE VETERINARY ULTRASOUND
IMAGING PERFORMED BY
AnimalSoundsNW.com 541-357-9423

PATIENT

Joey Joers

SPECIES

Canine

BREED

Chihuahua

SEX

Neutered Male

AGE

14 Years

WEIGHT

12 Lbs.

INTERPRETED BY

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

IMAGING PERFORMED BY

Jenna Walsh, CVT

HOSPITAL NAME

The Veterinary Hospital

REFERRING VET

Dr. Johnson

INVOICE

13630

DATE

1/25/22

PRESENTING CLINICAL SIGNS

History: labored respiration, owner describes syncopal episode (collapsed and laid there limp for a few moments , then recovered) has also had 2 seizures in last 2 months. Systolic murmur grad 5/6 HR/RR-180,80 BP-83/59/68, 174/106/130, 110/68/83,117/67/85,81/57/66,72/38/51,97/61/97 Current Medications Denamarin, started Lasix 6.25 mg BID today this AM

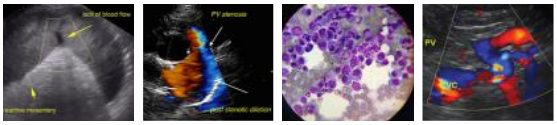
Abnormal PE/Chem/CBC/UA Results: elevated Alk Phos (800)

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	6.0	3.4	1.8	2.4	43	76	0.24
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	156	1.0	0.75	--	3.0	2.7	--

Cardiac Presentation

The echocardiogram for this patient presented moderate to severe **left atrial enlargement** expressed both in the LA/AO and LA max measurements. The cranial and caudal **mitral** valve leaflets presented vegetative thickening consistent with endocardiosis with prolapse of the septal MV leaflet. Doppler indicated measurable moderate eccentric insufficiency. The **left ventricle** presented thicknesses with linear contour with increased left ventricle volume. 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 increased size with anechoic content and without overt evidence of masses. RA dilation measured approximately 2.2 cm in diameter. **Tricuspid** valvular assessment demonstrated adequate linear morphology. The **right ventricle** exhibited mild increased size compared to the LV with normal myocardial echogenicity and overt thickness. **Pulmonic** tract assessment revealed normal valve structure, laminar flow, and diameter (approx.1:1 pa/ao ratio). Small volume **pericardial** free fluid was present without overt evidence of free pleural fluid. No echographically detectable evidence of infiltrative disease was obvious. The cranial **mediastinum and**



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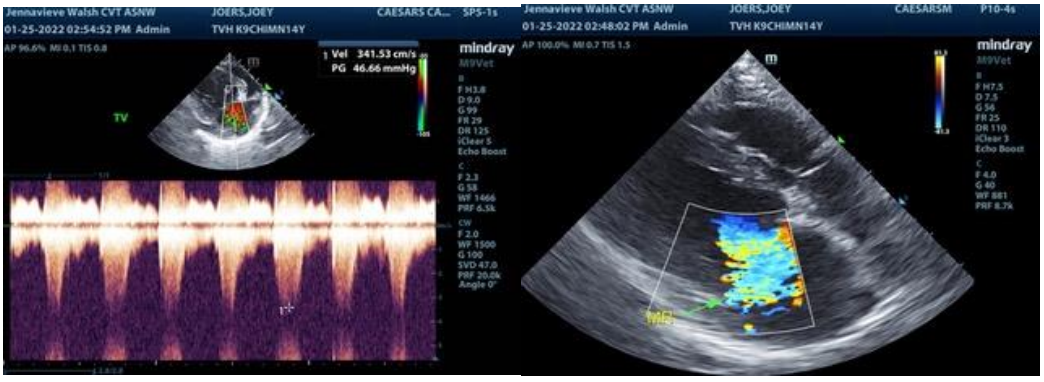
pericardial regions were free of masses in the visible window. A brief sonographic assessment of the cranial abdomen revealed ascites.

ULTRASONOGRAPHIC FINDINGS

- Chronic mitral valve disease with MV septal leaflet prolapse (ACVIM B-2 to C)
- Moderate TR- estimated pulmonary pressure gradient (approximately 50 mm of Mercury) consistent with mild to moderate pulmonary hypertension
- Small volume pericardial effusion- no overt cardiac tamponade
- Ascites

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

The echocardiogram is consistent with chronic degenerative valvular changes with valvular prolapse and secondary moderate eccentric mitral valve insufficiency. Concurrent moderate TR with estimated pulmonary pressure gradient consistent with moderate pulmonary hypertension. The underlying etiology of the pulmonary hypertension is often times unclear with considerations, including elevated pulmonary pressure secondary to left heart volume overload, primary lower airway disease, thromboembolic disease, etc. Subjectively, the degree of LA enlargement was not overtly consistent with LA rupture, although this potential cannot be definitively excluded. The pericardial effusion may also be secondary pulmonary hypertension. Technically, this patient is in congestive RHF given the presence of ascites. I recommend hospitalization with as needed oxygen therapy until stabilized. Pimobendan at 0.3 mg/kg PO BID, sildenafil at 1 mg/kg PO BID with target dose of 1-3 mg/kg PO BID and (lowest effective dose) diuretic protocol with (as needed) oxygen therapy recommended. Monitoring of BP and renal parameters while on diuretic therapy recommended. Going forward, this patient is at elevated risk for continued episodes of CHF, malignant arrythmias or potential sudden death. Recheck echocardiogram suggested in 4-6 months or sooner if continued episodes of CHF or syncope are noted. Guarded prognosis.



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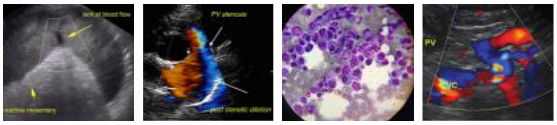

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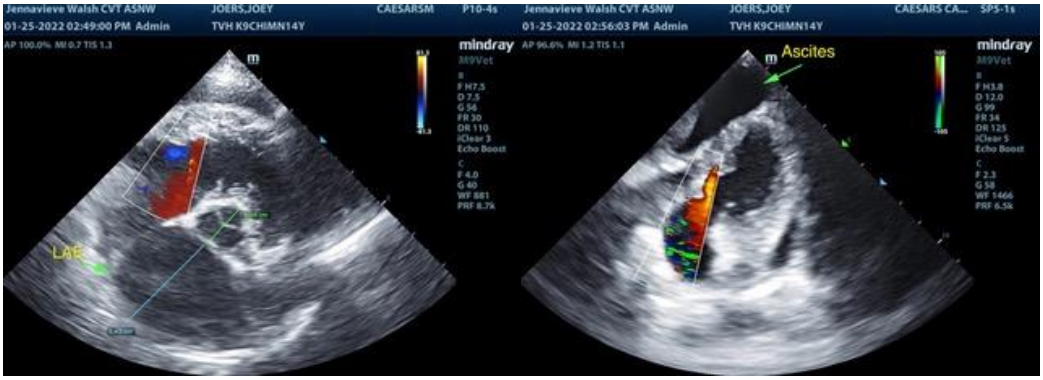

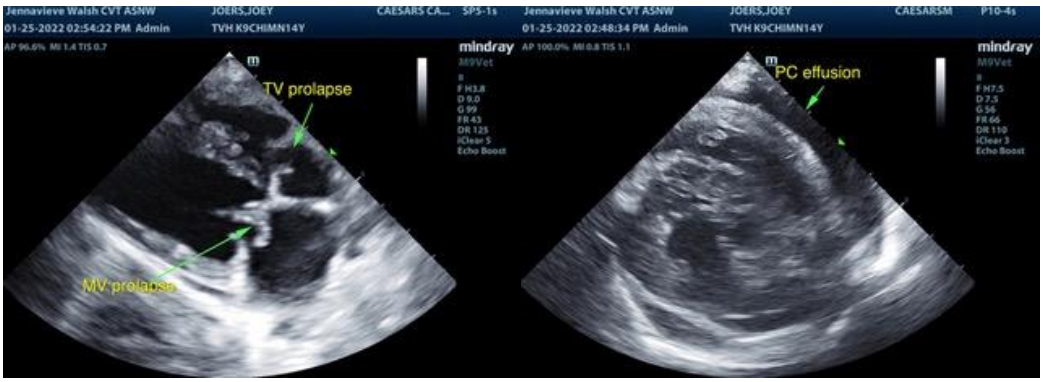

The information and recommendations provided are based on the images presented by the referring veterinarian. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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