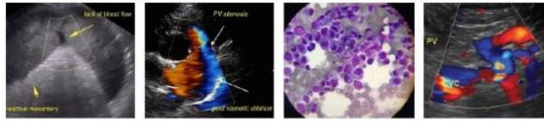


PATIENT

Zoe Beierl

SPECIES

Canine

BREED

Shih Tzu X

SEX

Spayed Female

AGE

14 Years

WEIGHT

4.5 kg

INTERPRETED BY

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

IMAGING PERFORMED BY

Crystal Hill

HOSPITAL NAME

Main Street AH

REFERRING VET

Dr. Murphy

INVOICE

13696

DATE

1/31/22

PRESENTING CLINICAL SIGNS

History: Presented with permanently dislocated hip in 2015 d/t hit-by-car, coughing (sporadic - daily to every few days) as if "trying to get air in" and gagging afterwards, multiple skin masses, BM in house when owner leaves, sleeps more frequently. PE on January 25, 2022: - M1 lenticular sclerosis but a small central cataract bilaterally, slightly decreased PLR - Grade 6/6 systolic murmur with a palpable thrill. -Multiple sebaceous adenomas, some crusted, 1cm raised well demarcated pigmented mass on ventral neck. -Wellness 2 + FT4 and radiographs done.

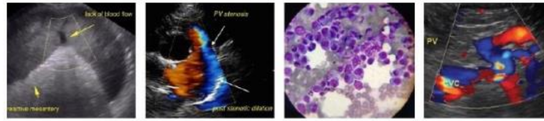
Abnormal PE/Chem/CBC/UA Results: Please see attached bloodwork and radiographs. -Cardiomegaly with enlargement of the left atrium -Increased density around the perihilar region with possibility of pulmonary edema or a mass effect -Some mild dorsal deviation of the trachea through the mediastinum.

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	--	1.8 Max	NM	2.1	49	81.4	0.18
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	124	1.0	1.0	--	3.4	3.3	--

Cardiac Presentation

The echocardiogram for this patient presented moderately excessive **left atrial size** expressed both in the LA/AO and LA max measurements. Deviation of the intra-atrial septum towards the right atrium consistent with elevated left atrial pressure was present. The cranial and caudal **mitral** valve leaflets presented vegetative thickening consistent with endocardiosis. Doppler indicated 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 normal size, structure and content. No evidence of masses was noted or chamber overload. **Tricuspid** valvular assessment demonstrated mild thickening with mild insufficiency on color doppler. 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



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(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.

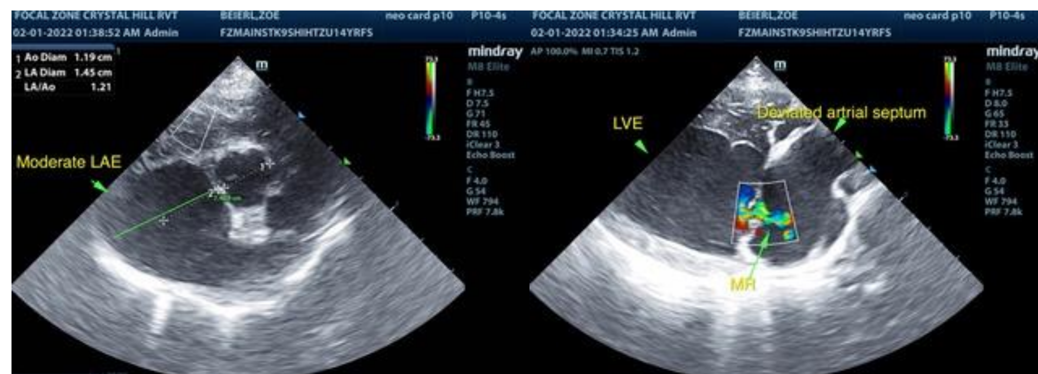
ULTRASONOGRAPHIC FINDINGS

- Chronic mitral valve disease (ACVIM B-2 - C)
- Minor TR- estimated pulmonary pressure gradient not overtly consistent or suggestive of clinical 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 moderate LA enlargement as well as increased LV volume indicate that the current and future risk, going forward, for decompensation is elevated. No other clinical issues, such as systolic dysfunction or overt clinical pulmonary hypertension were present. Pimobendan at 0.3 mg/kg PO BID, as well as Lasix at 1-2 mg/kg PO BID at lowest effective dose to control clinical signs is recommended. Omega fatty acid supplementation and mild salt restriction may prove beneficial. Screening blood pressure would be ideal. If BP is >130, an ace-inhibitory medication at 0.5 mg/kg PO BID could be considered (not advised if BP is <130). ECK assessment is suggested. Baseline monitoring of resting respiration rate recommended.

The coughing in this patient may be multifactorial in origin owing to possible emerging cardiogenic pulmonary edema, mainstem bronchi irritation or compression owing to LA enlargement +/- concurrent lower airway component. Hydrocodone at appropriate dose may prove effective. Recheck echocardiogram suggested in 6 months or sooner if continued clinical signs such as pulmonary edema, increased resting respiration rate, etc. are noted.



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)

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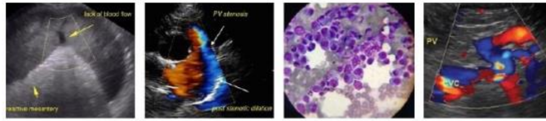

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PATIENT **info@SonoPath.com**

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