



PATIENT

Cocoa Delafield

SPECIES

Canine

BREED

Shih Tzu X

SEX

SF

AGE

9 years

WEIGHT

27

INTERPRETED BY

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

IMAGING PERFORMED BY

Tasha

HOSPITAL NAME

Dillsburg VC

REFERRING VET

Dr. Crow

INVOICE

14438

DATE

7/27/22

PRESENTING CLINICAL SIGNS

HX of cardiac enlargement. Heart murmur; On Pimobendan. Patient has many large bladder stones, looking to go into surgery based on echo results.

Abnormal PE/Chem/CBC/UA Results: EKG showed sinus arrhythmia and increased R wave. Lateral chest x-ray reveals large heart. BW WNL.

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			NM	1.7	55	89.8	0.26
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				3.7	4.0	

Cardiac Presentation

The echocardiogram in this patient demonstrated mild to moderately increased **left atrial** size based on 3 different LA measurement methods. Minor deviation of the interatrial septum towards the right atrium, suggestive of minor increased left atrial pressure, was present. The cranial and caudal **mitral** valve leaflets presented vegetative thickening consistent with endocardiosis. No evidence of valvular prolapse or chordae tendinea rupture was noted. The **left ventricle** presented thicknesses with maintained linear contour with mild 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 adequate linear morphology. 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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ULTRASONOGRAPHIC FINDINGS

- Mild chronic degenerative mitral valve changes consistent with endocardiosis
- Mild to moderate LA/LV enlargement
- Normal LV systolic function

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

Cardiac presentation continued to indicate chronic mitral valve disease with likely secondary mitral valve insufficiency. Mild progressive increased LA and LV volume compared to the previous study indicating mild progression of left chamber enlargement. No other overt clinical issues such as LV systolic dysfunction or evidence of clinical pulmonary hypertension i.e., right atrium or pulmonary artery enlargement were noted.

Continued Pimobendan at the current dose is recommended. Baseline monitoring of resting respiration rate is suggested. No other indication for additional medications unless clinical signs such as exercise intolerance, increased resting respiration rate, or radiographic evidence of pulmonary edema.

Prognosis continues to be highly variable and serial sonographic monitoring is required for further assessment. Anesthetic risk, assuming normal blood pressure, is considered mildly elevated yet given overall normal cardiac functionality, no definitive anesthetic contraindications. This patient may be at risk of fluid overload under anesthesia therefore judicious IV fluid under anesthesia and limited anesthetic time is advised. The following anesthetic protocol is recommended. Recheck echocardiogram is suggested in 6 months, sooner if clinical signs arise.

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.



The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. 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



PATIENT

can be of any further assistance please contact me.

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