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Clinical Sonography & Telecytology
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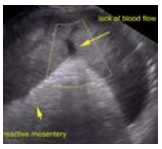
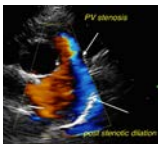
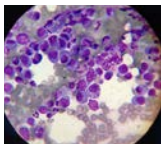
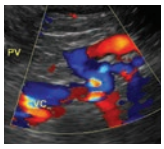

SonoPath.com
1-800-838-4268 info@sonopath.com

PATIENT
Luhan Liu

SPECIES
Feline

BREED
Bangle

SEX
Neutered Male

AGE
5 Years

WEIGHT
11.8 Pounds

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

IMAGING PERFORMED BY
Kim Liedberg

HOSPITAL NAME
SVS Imaging

REFERRING VET
Dr. Vivek

INVOICE
25071

DATE
8/30/21

PRESENTING CLINICAL SIGNS

Hx of embolism in back and was unable to walk was taken to ER and was given Plavix and now can walk again. Chest rads where taken at ER and noted an enlarged heart with a grade 2/6 heart murmur. Would like to know if heart meds are needed

ULTRASONOGRAPHIC EXAMINATION OF THE HEART

FELINE CARDIAC PARAMETERS	BODY WEIGHT (kg)	HR (BPM)	IVSd (cm)	LVIDd (cm)	LVWd (cm)	FS (%)	EF (%)
NORMAL PARAMETER	------	150-240	0.3-0.6	1.0-2.1	0.25-0.6	35-67	80-100
PATIENT		143	0.61	2.2	0.65	38.1	71.7
FELINE CARDIAC PARAMETERS	**LA/AO** (Boon)	**LA/AO HEART BASE** (Sisson)	**LA** 2D 4-chamber long axis AS to FW (Sisson) (cm)		**LVOT VEL.** (m/s)	**RVOT VEL.** (m/s)	**IVRT** (m/)
NORMAL PARAMETER	<1.5	0.88-1.79	0.7-1.7		<1.6	<1.3	40-60
PATIENT		1.5	2.0		1.8	1.3	NM

Adapted from June Boon,Veterinary Echocardiography,1998
Sisson D et al. JVIM 1991; 5: 232, Jacobs et al. Am J Vet Res 1985; 46:1705

Cardiac Presentation

The echocardiogram in this patient demonstrated mild to moderate **left atrial** enlarged with no evidence of "smoke". The cranial and caudal **mitral** valve leaflets appeared mildly thickened with potential minor insufficiency noted on Doppler. Mild systolic anterior motion of the mitral valve was present. The **left ventricle** presented excessive free wall and septal thicknesses with hypertrophic tendency compared to normal for this species, most notable in the basilar aspect of the septum. Mild to moderate papillary muscle The **myocardium** presented essentially normal echogenicity without immediate signs of ischemic disease, yet evidence of myocardial remodeling. **Contractility** of the ventricular walls was considered within normal limit for this patient evidenced by the fractional shortening measurement. The **left ventricular outflow** tract demonstrated turbulent laminar flow post basilar septal thickening and SAM. Subjective assessment of the **right atrium** and auricle revealed normal size, structure and content. No evidence of masses was noted. **Tricuspid** valvular assessment demonstrated linear morphology. The **right ventricle** was of normal size with normal chordae structure, myocardial echogenicity and thickness. **Pulmonic** tract assessment revealed normal valve structure, laminar flow, and diameter. No visible **pericardial** or free pleura fluid was noted. No echographically detectable evidence of infiltrative disease was visible. The **mediastinum** was free of masses in the visible window.

ULTRASONOGRAPHIC FINDINGS

- Systolic anterior motion of the mitral valve, possible chronic mitral valve dysplasia
- Septum and free wall myocardial remodeling and increased thickness, most notable in the basilar aspect of the septum.
- Mild to moderate left atrial enlargement

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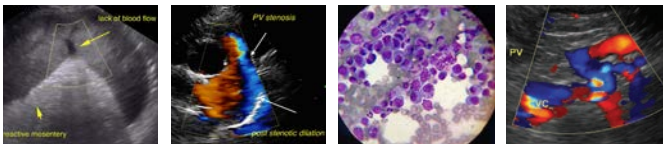

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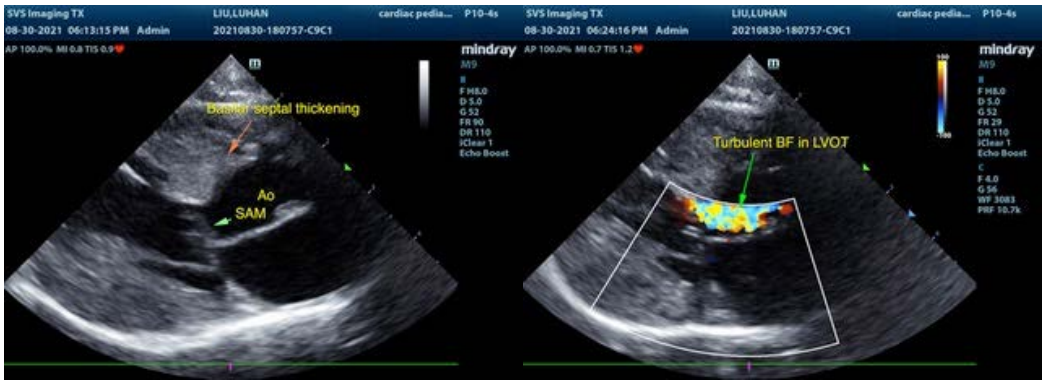
INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

The cause of the murmur is a suspected combination of a fixed and dynamic left ventricular outflow tract obstruction exhibited by the basilar septal thickening and presence of SAM, potentially leading to left ventricular hypertrophy and obstructive LVOT flow pattern. This may potentially be owing to chronic mitral valve dysplasia given the young age of the patient, although a primary hypertrophic component cannot be ruled out given the basilar and overall hypertrophic tendency of the septum and left ventricular free wall.

The mild to moderate left atrial enlargement indicates that the risk for spontaneous congestive heart failure and/or recent or future thrombotic event is elevated. Referral to a local cardiologist would be ideal for further assessment and clarification given the young age of the patient.

Screening blood pressure and assessment of T4 levels highly recommended every 6-12 months to rule out contributing factors. Empirically, Plavix 18.75 mg PO SID recommended +/- lowest effective dose of diuretic if evidence or clinical signs suggestive of congestive heart failure. If cardiology referral is not possible, close monitoring at home for evidence of respiratory signs or additional blood clot events is recommended. Recheck echocardiogram suggested in 6 months, sooner if these clinical signs 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)
info@SonoPath.com