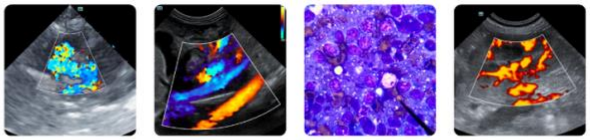

PATIENT

Tikka Rose Schultz

SPECIES

Feline

BREED

Devon Rex

SEX

Spayed Female

AGE

3 Years

WEIGHT

3.2

INTERPRETED BY

James Wood, DVM, DACVIM (Cardiology)

IMAGING PERFORMED BY

Dr. Stephanie Cory

HOSPITAL NAME

Brighton VC, P.C., Inc.

REFERRING VET

Dr. McCrea-Spence

INVOICE

37228

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PRESENTING CLINICAL SIGNS

History: Recheck (45560). Hx of mitral valve dysplasia. Occ respiratory signs at home, but rare. No weakness, syncope, or exercise intolerance. Not on any meds, no sedation given. Noted arrhythmia during echo - obtained ECG after echo.

ULTRASONOGRAPHIC EXAMINATION OF THE HEART

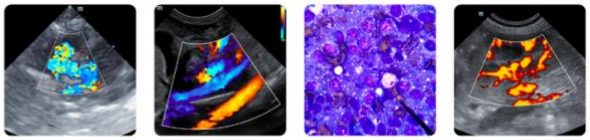
FELINE CARDIAC PARAMETERS	**BODY WEIGHT** (kg)	**HR** (BPM)	**IVSd** (cm)	**LVIDd** (cm)	**LVWd** (cm)	**FS** (%)	**EF** (%)
NORMAL PARAMETER	------	150-240	0.3-0.6	1.0-2.1	0.25-0.6	35-67	80-100
PATIENT	3.2	210	0.68	1.09	0.58	58.7	91.4
FELINE CARDIAC PARAMETERS	**LA/AO** (M-mode)	**LA/AO HEART BASE** (Sisson)	**LAD** LA MAX 4 Chamber		**LVOT VEL.** (m/s)	**RVOT VEL.** (m/s)	**IVRT** (m/)
NORMAL PARAMETER	<1.5	1.6	0.7-1.7		<1.6	<1.3	40-60
PATIENT	1.3	1.35	1.34		1.0	1.22	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							

ECG Interpretation

A single lead strip was reviewed. The heart rate is approximately 220 bpm. The rhythm appears sinus to sinus tachycardia. On one of the included strips, the sinus rhythm has an abrupt break with a brief pause terminated by what appears to be a junctional escape beat, and then a sinus rhythm resumes.

Cardiac Presentation

The mitral valve leaflets are normal and there is mild mitral regurgitation. There is no prolapse of the mitral valve leaflets. The left atrial size is within normal limits. Left ventricular systolic function appears preserved. Left ventricular diastolic dimensions are within normal limits. There is systolic anterior motion of the mitral valve resulting in a mild dynamic LVOT obstruction and mild eccentric mitral valve insufficiency. There is mild thickening of the interventricular septum with an equivocal thickening of the LV free wall. There is normal right atrial size without evidence of tricuspid regurgitation. There is no prolapse of the tricuspid valve leaflets and no evidence of pulmonary hypertension on the images provided. The right ventricle appears normal in structure and function subjectively. The aortic valve has normal morphology, and the corresponding outflow velocity is within normal limits. There is aliasing color flow in the RVOT with a late systolic peaking CW doppler profile, consistent with a dynamic right ventricular outflow tract obstruction (benign). There is no evidence of pulmonary or



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aortic insufficiency. The aorta appears normal. The pulmonary artery and associated branches appear normal. There is no evidence of pleural effusion, pericardial effusion, or intracardiac masses.

ULTRASONOGRAPHIC FINDINGS

- Hypertrophic obstructive cardiomyopathy, ACVIM stage B1
- Dynamic left ventricular outflow tract obstruction - SAM, r/o HOCM vs mitral dysplasia
- Arrhythmia - sinus pauses with junctional escape

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

The echocardiogram revealed thickening of the left ventricular walls. This is consistent with a hypertrophic cardiomyopathy phenotype, or HCM. In HCM, there is hypertrophy (thickening) of the muscle fibers that make up the walls of the heart. Many cases are a primary heart muscle disease (genetic in origin), however in some cases this can be a secondary process that may improve with treatment of the underlying condition (i.e. high blood pressure or hyperthyroidism among others). A blood pressure and total T4 are recommended in cats >6yr to rule these out as underlying causes (if not already performed). Regardless of the cause, the thickening causes diastolic dysfunction, and progressive left atrial enlargement. There was also evidence of a dynamic left ventricular outflow tract obstruction due to systolic anterior motion of the mitral valve. While beta blockers have been used to improve the LVOT obstruction, studies have not demonstrated a benefit in survival times or other outcomes with beta blockers (even in cats with a severe obstruction on echo). Some cats who have symptoms of exercise intolerance (these cats typically have severe LVOTO) may have an improvement in clinical signs with atenolol therapy. Eventually, cats with left atrial enlargement are at risk of developing congestive heart failure (pulmonary edema, pleural effusion, or both), blood clot formation and arrhythmias/sudden death. Some cats with mild HCM may live a normal lifespan with no further progression of disease. However, it is also possible that his HCM will progress over time and further therapy may be required for congestive heart failure, blood clots, or arrhythmias.

Fortunately, this patient does not have evidence of significant left atrial enlargement, so the risk of adverse cardiovascular outcomes is considered low at this time. No cardiac medications are recommended at this stage of the disease, but a recheck echocardiogram is recommended in 9-12 months to determine if there is any progression.

The noted historical mitral valve dysplasia may be static, however, this change of a dynamic LVOT obstruction with mildly eccentric MR is also seen with hypertrophic cardiomyopathy as mentioned above and just may be a manifestation of this disease. This breed is also predisposed to cardiomyopathy. The arrhythmia is mild, likely incidental, and does not warrant treatment based on the provided ECG.

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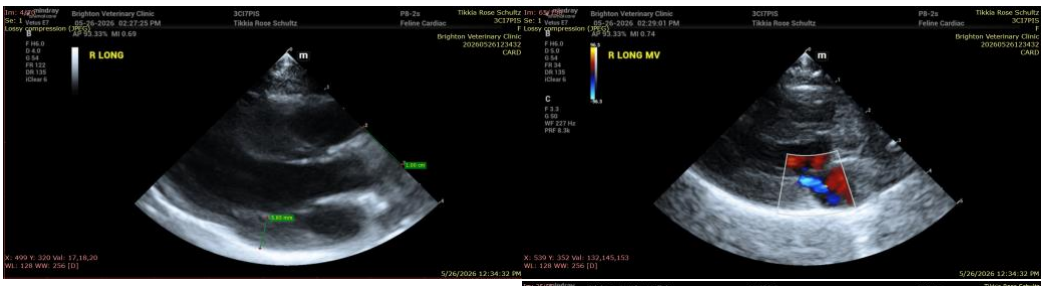

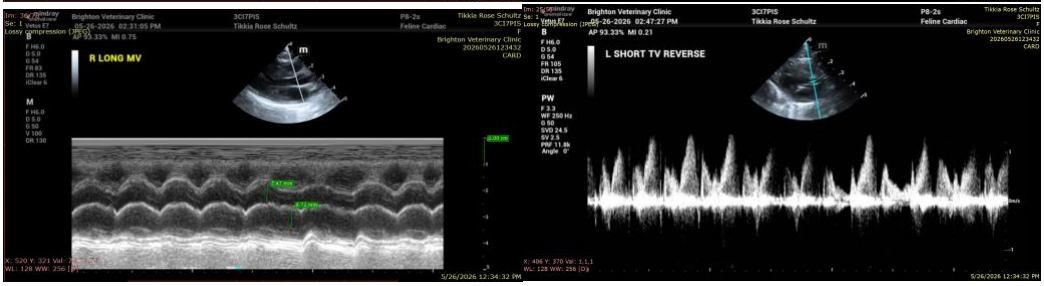

The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

Thank you for this referral. If the clinical or image interpretation does not parallel your findings or if I can be of any further assistance please contact me.

James Wood, DVM, DACVIM (Cardiology)

info@SonoPath.com