


01-03-2024

Dr. Julia Brooks
Midwest Animal Hospital of Orland Park
11205 183rd Place Orland Park, IL, 60467
708-478-7788

Re: Rusty, owned by Rescue (mw) Wire Fox Terrier Rescue (mw)

Dear Dr. Brooks,

The following is a summary of Rusty's visit on 01-02-2024.

 History

Rusty presented to the cardiology service for further evaluation of a previously diagnosed heart murmur. The foster reports that Rusty is doing well at home with a normal appetite and energy level. He is asymptomatic for cardiac disease.

Current Medications:

None

Diet:

Fromm game and bird recipe

 Physical Exam

Weight: 0 kg
Temp (°F): 100.60 H.R.: 152 bpm R.R.: 28 rpm
C.R.T. :1-2 sec
M.M.: Pink
Attitude: BAR
Hydration: adequate hydration
B.C.S.: 4/9
Muscle Condition: Normal

EENT: No nasal discharge.

LYMPH NODES: Normal peripheral lymph nodes.

CARDIOVASCULAR: Grade IV/VI systolic ejection murmur with the PMI over the left cardiac base. Flat jugular veins. Normal femoral pulses.

RESPIRATORY: Normal lung sounds and respiratory effort.

INTEGUMENT: Unremarkable. Good hair coat.

ABDOMEN: Unremarkable abdominal palpation. Soft, non-painful, no discrete masses palpated.

MUSCULOSKELETAL: Ambulatory x 4.

NEUROLOGIC: Alert and mentally appropriate.

UROGENITAL: Not examined.

RECTAL: Not examined.

 Diagnostic Result

Echocardiogram Initial

ECG: Lead II during echocardiogram

Sinus rhythm with RV enlargement criteria was present during the echo evaluation.

Echocardiographic Report:

- Severe concentric right ventricular hypertrophy with possible dynamic obstruction in the hypertrophied infundibular RV outflow tract
- RVAW myocardium is hyperechoic overall with some hyperechoic speckling
- LVPW thickness is normal
- Systolic flattening of the IVS on a right parasternal cross-sectional view consistent with an RV pressure overload
- The LV is volume depleted
- There appear to be 2 normally positioned coronary arteries
- Atrial dimensions are normal
- Ventricular systolic myocardial function appears symmetric and globally normal
- The pericardial sac is normal with no effusion
- Pulmonic valve leaflets are thickened and demonstrate abnormal systolic motion
- Mitral valve leaflets are thickened
- The tricuspid and aortic valves are grossly normal
- Prominent SAM is present
- Color flow Doppler interrogation demonstrates systolic RVOT turbulence, mild pulmonic insufficiency, a suspect small ASD, mild to moderate central mitral regurgitation, trace tricuspid regurgitation, and systolic LV outflow turbulence beginning at the level of SAM.
- Spectral Doppler interrogation confirms the presence of severe, valvular pulmonic stenosis and severe obstruction of the LVOT that appears to be primarily dynamic in character.

M-Mode Measurements:

IVSd: 1.06 cm IVSs: 97.76 cm LVIDd: 1.53 cm
LVIDs: 0.38 cm LVPWd: 0.83 cm LVPWs: 1.38 cm
EF: 97.76 % FS: 74.85 % Aortic Root: 1.31 cm
Left Atrium: 2.09 cm LA:Ao Ratio: 1.59
RVAWd: 1.69 cm

Doppler Measurements:

LVOT VMax: 4.83 m/s LVOT maxPG: 93.14 mmHg
RVOT Vmax: 6.98 m/s RVOT Vmax PG: 195.13 mmHg

[VIEW IMAGES](#)

IMAGE COUNT: 55

External Link:

<https://medvet-cloud.ambrahealth.com/link/4a677fd6-7199-4249-8db4-80887ea098fc>

Diagnostic Impressions:

The evaluation demonstrates severe valvular pulmonic stenosis with extremely severe, secondary, concentric right ventricular hypertrophy. A dynamic infundibular RV outflow obstruction also appears present grossly but was not confirmed with spectral Doppler flow patterns.

Severe LV outflow obstruction is also documented and appears to result from a dynamic obstruction that is enhanced by LV volume depletion secondary to poor forward output from the right heart and IV septal hypertrophy. A fixed component might also be present but was not appreciated on 2-D echo. Prominent thickening of the AMVL is present, likely secondary to the SAM resulting in the dynamic LVOT obstruction, and mild to moderate mitral regurgitation is noted.

A small, right to left shunting ASD is also suspected.

The long term response to pulmonic stenosis is difficult to predict in individual patients with some affected dogs living good quality, long life spans despite the presence of severe stenosis, and other dogs with only moderate stenosis developing signs of right sided CHF (lethargy, exercise intolerance, ascites, syncope) at a young age. With Rusty's changes falling into the severe category and changes in RV myocardial echogenicity noted on the echo, the potential for a significant impact on both length and quality of life are present. Balloon valvuloplasty of an affected lesion is considered the ideal treatment for valvular P.S. (assuming contraindications such as an aberrant coronary artery are not identified) with palliative surgical options also being available. The LV outflow obstruction is a complicating finding, but I believe that most of the LVOT is dynamic in nature and due, at least in part, to volume depletion and

concentric hypertrophy of the IV septum associated with the severe pulmonic stenosis.

Blood Pressure Initial-size 2 cuff, left rear limb

Test	Results	Unit	Lowest Value	Highest Value	Qualifier
Blood Pressure	135	mmHg	100	160	

Recommendations for at Home Cares

Diet

No diet restrictions at this time.

Activity

Moderate physical activity (meandering walks, exploring the back yard, playing with toys inside, getting excited when family gets home, etc.) is encouraged, but periods of strenuous aerobic activity (jogging, strenuous outdoor ball play, prolonged play at the dog park, etc.) should be avoided, especially during periods of high heat (> 80 F) and humidity. Dogs with heart disease tend to tolerate cool and cold temperatures much better than high temperatures. Avoid sudden increases in activity (e.g. 2 block walks during the week but 2 mile walks followed by 30 minutes at the dog park on the weekends) as this may be difficult for the cardiovascular system to deal with.

Monitor For

Please call the MedVet Chicago Cardiology department if weakness, significant lethargy, collapse, or other clinical signs of heart disease are noted.

Medications:

Begin the following cardiac medication:

Drug Name	Instructions
Atenolol 25mg (Per Tablet) Atenolol is a beta blocker designed to decrease heart rate, control heart rhythm, decrease or eliminate obstruction and improve the filling of the heart. Most likely, your pet will require this medication for life. This drug can cause sluggishness/lethargy.	Give 1/4 tablet (6.25mg) by mouth once daily for 5 days, then give 1/4 tablet (6.25mg) by mouth twice daily thereafter.

Follow-ups

Consider referral to Purdue University College of Veterinary Medicine for further evaluation, +/- cardiac catheterization, +/- balloon valvuloplasty. The owner has indicated a willingness to pursue this.

Thank you for the referral of Rusty and for your continued support of MedVet. If you have any questions regarding the care of Rusty, please do not hesitate to contact me.

Sincerely,



Michael Luethy, DVM, DACVIM (Cardiology)

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