



Research Article

**RHEUMATIC VALVULAR HEART DISEASE AND UNAFFORDABLE SURGICAL INTERVENTIONS
IN A FINANCE-LIMITED SETTING**

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ABSTRACT

Background: Heart failure in the young is usually associated with non-communicable etiology. Rheumatic valvular heart disease (RVHD) is a common cause of heart failure in this age and usually presents with heart failure. The management of RVHD may require medical and surgical interventions. Here is documented a case of RVHD requiring both medical and surgical interventions, but the patient could not afford the counterpart fund for the surgery and has been hanging in the balance. **Findings:** The patient, a 28-year old woman, presented with features of heart failure – breathlessness on mild exertion, orthopnea, paroxysmal nocturnal dyspnea, tiredness and lower limb swelling that waxed with exertion, of 2 months, mild respiratory distress, pallor, lower limb edema, irregular pulse, normal blood pressure, displaced cardiac apex, pansystolic murmur and basal lung crepitation. She also has an enlarged pulsatile liver and ascites. CXR showed cardiomegaly, unfolded aorta and upper lobe vascular diversion. Echocardiography showed global hypokinesia, aortic stenosis, mitral stenosis, tricuspid and pulmonary regurgitation, EF 36%, FS 28%, septal thickening and LVH. ECG showed evidence of ST T changes in the lateral leads. She was placed on anti-failure regimens. For a period of about 8 months, she was not able to source the counterpart fund necessary to effect a valvular heart surgery. As a result, she could not undergo any heart surgery. **Conclusion:** Surgical interventions for RVHD are not readily available neither are they accessible to patients needing them, as with our index patient.

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INTRODUCTION

Rheumatic valvular heart disease (RVHD) is a heart disease that causes damage to the valves of the heart with variable involvement of the different valves. [1] It is caused by an infective organism, streptococcus pyogenes, and is predominantly observed in low income countries. [2] It may follow an insidious or aggressive course, and affects children, adolescents and young adults. [3] The principal clinical feature of RVHD is heart failure. As the valvular damage is progressive, usually manifesting a combination of stenosis and regurgitation, the clinical features tend to be progressive and irreversible, ultimately requiring surgical interventions, mainly valvular repair or prosthesis replacement. [4]

The prevalence of RVHD is high in Nigeria. [5] Although rheumatic heart disease preventive measures targeted at eliminating streptococcus pyogenes at the local community levels can reduce the incidence and burden of RVHD, many subjects who have this infection would develop RHVD.

Overt RVHD requires medical and, with time, surgical interventions. Surgical interventions, unlike medical measures, require high expertise and costly equipment; these are not readily available in low income countries. [6]

Here is illustrated a case of RVHD who has heart failure, received only medical treatment, and was to benefit from a collaborative effort of a local team with a US team, but could not because she was not able to pay the counterpart fund necessary to facilitate the surgery.

Case Presentation

The patient was a 28-year old woman, who presented with swelling of both lower limbs with exercise accentuation and breathlessness associated with orthopnea and PND of 2 months' duration. She was easily fatigued, anorexic, with previous episodes of sore throat but no fever, palpitation or chest pain.

There was no history of previous swelling of the body, hypertension or diabetes mellitus. No member of her family has a similar illness. She had no history of tobacco or alcohol use. Physical examination revealed mild distress pallor, bilateral pitting lower limb edema and body mass index of 20.0kg/m².

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Pulse rate was 90/min, small volume and irregular. Other peripheral pulses were present and normal. Arterial was not thickened. JVP was raised. Blood pressure was 100/50mmHg sitting. Precordium was heaving. Apex beat was at the 6 left intercostal space at the anterior axillary line. Heart sounds S1 and S2 were heard. Grade 5 pansystolic murmur radiating to the axilla and fine crepitation at the lung bases were heard. Abdomen was distended with moderate ascites demonstrable by shifting dullness. Liver was enlarged and pulsatile, has a span of 15cm, was soft, and has a smooth surface and sharp edge. Spleen and kidneys were not palpably enlarged.



Figure 1 Chest X-ray of the patient showing features of heart failure

Examination of both the central nervous system and the musculoskeletal system was not remarkable.

RESULTS OF INVESTIGATION

Serum urea 22mg/dl, potassium 3.5mmol/l, sodium 139mmol/l, chloride 98mmol/l, bicarbonate 24mmol/l, creatinine 0.66mg/dl

FBC: Hb9.6g/dl, WBC (total and differential) were within normal range. ESR 15mm/hr (normal)

Blood culture did not yield any significant bacterial growth.

CXR: Showed cardiomegaly with left ventricular preponderance, left aortic unfolding, cephalization of the pulmonary vessels. However, there was no focal lung lesion.

ECG Sinus rhythm. Rate 84/min. Left axis deviation. Normal p wave (PR=0.2s), normal QRS duration (0.04s), QT not prolonged (0.4s), SV1+RV6=37mm showed LVH. ST segment and T wave depression in lead I and AVL suggesting ischemic heart changes in the left heart.

Echocardiography

Global wall motion hypokinesia. There was no intracardiac clot or mass. There was left ventricular hypertrophy (IVSD=1.8cm, IVSS=1.7cm septal wall thickness). Posterior

wall diameter PWDD=2.1cm, PWDS=2.4cm. Poor LV contractility ie EF=36%, FS fractional shortening =24%. Mitral and aortic valve leaflets were calcified with restricted motion. Both showed evidence of combined stenosis and regurgitation. Aortic valve velocity=4.2m/sec with pressure gradient =72mmHg. There was functional pulmonary and tricuspid regurgitation.

A diagnosis of Rheumatic valvular heart disease was made.

She was commenced on benzathine penicillin 2.4g weekly, low dose Aspirin 75mg daily, oral hydrochlorothiazide 25mg daily and oral spironolactone 25 daily.

She has been evaluated in University of Nigeria Teaching Hospital (UNTH) and booked for heart valvular surgery in a collaborative framework with a foreign agency, but was yet to receive the surgery. She was not able to pay for the counterpart fund required for this surgery. Subsequently, she died of the complications of RVHD.

DISCUSSION

Global concerns about RVHDs culminated in two International Conferences, the first was held in Dubai and the second in Cape Town. [6,7] During the Conference in Cape Town in which 36 countries participated the burden and challenges of RVHDs were discussed. These deliberated on the primary control at the rural levels including provision and availability of quality penicillin for control of offending organism, medical management of the cardiac complications, surgical management and international and NGO collaborations to enhance prompt and quality medical and surgical interventions in low-income countries which bear the burden of this disease. Stakeholders, include cardiologists, thoracic surgeons, health policy makers and implementers, and governments. [6,7]

In line with the proposals of this body, the UNTH with its Cardiology Unit in collaboration with a US interest group are providing surgery for RVHD patients but require would-be benefiting patients to pay a 'little' counterpart fee of N500,00. This is plausible but is still outside the reach of the common patients. This could account for the inability of our index patient to mobilize the said fund. She died of the complications of RVHD. [8]

Perhaps, national governments should evolve policies that would bolster local programs to alleviate the burden of RHVD and complement the efforts of these collaborators. [9] Until appropriate programs are developed in resource-poor economies, the management of RVHD will continue to elude the majority of the patients who incidentally belong to the low income class. [6]

CONCLUSION

Surgical interventions for RVHD are not readily available or accessible to patients needing them, as with our index patient. There is a need for stakeholders to adopt the recommendations of the RVHD as proposed in Cape Town.

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