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A CASE REPORT OF RHEUMATIC VALVULAR HEART DISEASE IN PREGNANCY

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ABSTRACT
Rheumatic heart disease is the cardiac inflammation and scarring triggered by an autoimmune reaction to infection by group A streptococci. Chronic disease is manifested by valvular fibrosis resulting to Stenosis and/ or insufficiency. At present, 0.2-4% of all pregnancy in western industrialized countries are complicated by cardiovascular diseases, in western world congenital heart disease is the frequent cardiovascular disease present during pregnancy 75-82% while rheumatic valvular heart disease dominate in non-western countries, comprising 56-89% of all cardiovascular disease in pregnancy. [1]n this report we present a 30 year old woman, gravida 3 para 0, at 32 weeks gestational age, admitted at Muhimbili national hospital with presenting complains of difficulty in breathing, easy fatigability and lower limb swelling, EKG was normal, Echo revealed moderate Mitral stenosis and severe aortic regurgitation secondary to rheumatic heart disease with preserved left ventricular systolic function EF=71%. Obstetric USS revealed a viable singleton pregnancy at 32 weeks, cephalic presentation. Thus it was concluded that due to challenges in managing valvular heart disease in pregnancy, it's really important to understand how they present so that we can be able to prevent their complications (maternal and fetal).

INTRODUCTION

Rheumatic heart disease is the cardiac inflammation and scarring triggered by an autoimmune reaction to infection by group A streptococci. Chronic disease is manifested by valvular fibrosis resulting to Stenosis and/ or insufficiency [1]. At present, 0.2-4% of all pregnancy in western industrialized countries are complicated by cardiovascular diseases, in western world congenital heart disease is the frequent cardiovascular disease present during pregnancy 75-82% while rheumatic valvular heart disease dominate in non-western countries, comprising 56-89% of all cardiovascular disease in pregnancy.[2] pregnancy induces changes in the cardiovascular system to meet the increased metabolic demands of the mother and fetus, they include increase in blood volume and cardiac output, and reduction in systemic vascular resistance and blood pressure. A 30-50% increase in cardiac output occurs in normal pregnancy. In early pregnancy the cardiac output increases primarily in relation to rise in stroke volume, however in late pregnancy heart rate is the major factor [2].

The management of valvular heart disease due to congenital or acquired etiologies in pregnant patients can be challenging, there is an elevated incidence of adverse maternal and fetal outcomes in this patient population, several studies have assessed the maternal and fetal outcomes of pregnant patients with congenital and acquired valvular disease and have identified important predictors of adverse outcome. Hameed et al studied 46 pregnancies in 44 patients with valvular heart disease and found that these patients had marked clinical deterioration and morbid events in the mother (congestive heart failure, need for hospitalization, initiation or increase in cardiac

medications and atrial arrhythmias) as well as the fetus (intrauterine growth retardation, low birth weight and prematurity). A clear relationship was found between the severity of mitral or aortic stenosis and adverse maternal and fetal outcomes. Patients with mild mitral or aortic stenosis had outcomes comparable to normal controls. Pre-pregnancy New York Heart Association (NYHA) functional class and the severity of mitral stenosis were the two main predictors of adverse maternal and fetal outcomes. Les´niak-Sobelga studied 259 pregnancies, all of which had valvular disease (158 with mitral disease, 54 with aortic disease, and 47 with prosthetic heart valves). Mitral stenosis was the most common acquired valve disease. Pregnant patients with critical mitral valve stenosis form a high-risk group who are at significantly increased risk of life-threatening complications. In women with severe aortic stenosis, pregnancy can lead to sudden deterioration. Cardiac complications can be expected in patients with left ventricular enlargement and depressed ventricular systolic function. Factors predicting a successful course of pregnancy and labor in patients with prosthetic valves are adequate left ventricular function, properly functioning valves, and effective anticoagulation [3].

CASE REPORT

We present a case report of a 30 year old woman, Gravida 3 para 0, at 32 weeks gestation age, admitted at Muhimbili national hospital with presenting complains of difficulty in breathing, easy fatigability and lower limb swelling, EKG was normal, Echo revealed moderate Mitral stenosis and moderate aortic regurgitation secondary to rheumatic heart disease with preserved left ventricular systolic function EF=71%. Obstetric USS revealed a viable singleton pregnancy at 32 weeks, cephalic presentation.

The aortic valve was also rheumatic, with moderate Aortic regurgitation where the pressure halftime was 255ms, with the regurgitant orifice area of 0.2cm^2.

Our patient was managed by tabs Lasix 40mg bd, tabs Aldactone 25mg od, tabs Isosorbide mononitrate 10mg bd, where by she improved and the symptoms subsided, we continued monitoring her closely with the obstetrician and planned for elective Cesarean section after 4 weeks, but she managed to deliver through spontenous vaginal delivery without any complication with baby scoring 10/10 Apgar score. Currently she has been discharged while on her mediactions but she is planned for Double Valve Replacement early next year.

Figure 1. Showing the M-mode LV systolic function, with an EF of 71%

Figure 2. Showing moderate mitral stenosis with PHT of 148ms

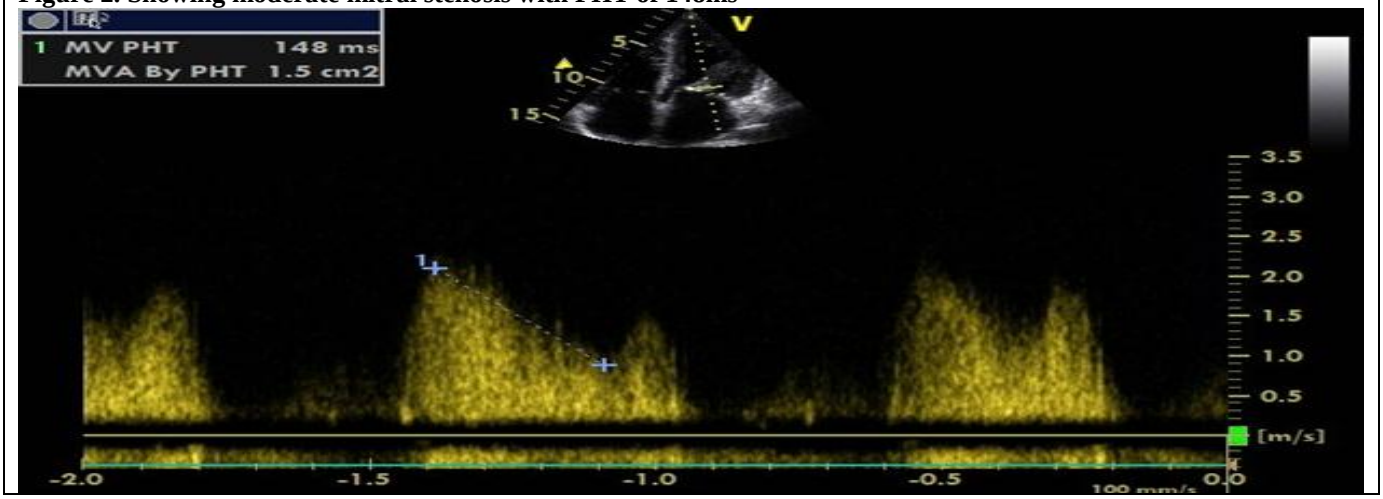

Figure 3. Showing mitral valve area planimetry of 1.0cm^2 indicating moderate mitral stenosis

DISCUSSION AND CONCLUSION

Pregnancy in patients with valvular heart disease tend to pose a challenge to both physicians and their patients and could be associated with an unfavorable maternal and fetal outcomes [4-6], thus it is of crucial significance to understand their clinical presentation and management. Several reports published in recent years on pregnancies in women with heart disease have provided outcome information on over 400 patients with Mitral stenosis in different parts of the world. Hameed etal published a case control study of 46 pregnancies in 44 patients with MS who were compared with a healthy control group of women matched for age, ethnicity, obstetric and medical history, time of initial prenatal care, and year of delivery. 28 of these cases were in NYHA functional class I and 18 were in class II on their initial clinic visit, and of all 44 patients, 74% demonstrated clinical deterioration during pregnancy. Maternal outcome was favorable in patients with mild MS and comparable to their control; in contrast, there was a significantly higher incidence of maternal morbidity in women with moderate and severe MS, including the development of heart failure, arrhythmias (atrial fibrillation or SVT), the need to start and/or increase a dose of cardiac medications, and the need for hospitalizations [7-12].

The management of MS during gestation is more complex because of the potential impact on the fetus related to drug therapy and the exposure to ionizing radiation associated with diagnostic and therapeutic procedures such as cardiac catheterization or percutaneous balloon valvuloplasty, as well as the effect of anesthesia and cardiopulmonary bypass in the case of cardiac surgery. For clinicians treating women with MS, there are two separate groups of patients: the patients with MS who desire to become pregnant and are being evaluated before pregnancy and those who are already pregnant. Patients contemplating pregnancy who are found to have severe MS (mitral valve area [MVA] <1.0 cm2) should be offered percutaneous mitral balloon valvuloplasty (PMBV) before pregnancy. This approach will minimize or even completely prevent the anticipated clinical deterioration documented in such cases and will reduce the need for pharmacologic or interventional therapy during pregnancy. The decision to perform PMBV before conception in patients with moderate MS should be on the basis of their MVA, symptoms, and exercise tolerance. Careful judgment is required in a patient with MS who is not a suitable candidate for PMBV. In such patients, especially those with moderate valvular stenosis who are either asymptomatic or mildly symptomatic, medical therapy during pregnancy may be preferred to mitral valve replacement before the pregnancy. With appropriate follow-up, patients with mild MS (MVA >1.5 cm2) usually have a favorable pregnancy outcome; valve repair before pregnancy, therefore, is not indicated.[4] Reviewing this presentation leads us to conclusion that it is still important to understand how they present and managed.

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