



## Rheumatic Mitral Restenosis with Concomitant Coronary artery Disease

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### Keywords

Coronary, Mitral, Rheumatic, Repair, Stenosis

Rheumatic heart disease (RHD) has practically vanished from developed countries; however one often sees complicated rheumatic valvular disease in elderly individuals, in developing countries. It is not very common to see operated cases of mitral stenosis (MS) coexisting with coronary artery disease (CAD). Studies have reported prevalence of CAD coexisting with rheumatic MS ranging from 1.7% [1] to 28% [2]. We recently had a case of rheumatic MS, who was operated twice, had again developed restenosis, and presented with acute coronary syndrome (ACS) attributed to angiographically documented double vessel disease. Absence of traditional risk factors like smoking, obesity, and diabetes, and the diagnostic and therapeutic issues involved in such condition prompted us to report this case.

A-60-yr-old male presented with sudden onset of severe retrosternal chest pain radiating to left arm, and aggravating on exertion along with anxiety and diaphoresis. He had no history of vomiting or cough or fever. There was a significant history of RHD for the last 40 years. He was diagnosed as severe MS and underwent closed mitral valvotomy (CMV) at age 18 years and was on penicillin prophylaxis and digoxin henceforth. However symptoms recurred and became progressive after next 25 yrs when he developed restenosis, and, he underwent percutaneous transvenous mitral commissurotomy (PTMC) at age 46 years. He was subsequently stable on medications. He is a nonsmoker and nonalcoholic.

His BP was 160/90mmHg and pulse rate 98/min, irregularly irregular. Pedal edema, pallor and cyanosis were absent. BMI was 20.96Kg/sq.m and Waist measured 86cm. CVS examination revealed a loud S1, mid diastolic rumbling murmur. Chest inspection showed a postoperative linear scar extending from anteriorly below nipples through the entire lateral chest wall (Figure 1). Abdomen and CNS were normal. ECG showed ST segment depression in V2 to V6 and

limb leads II, III, aVF with atrial fibrillation (AF) and controlled ventricular rate. Troponin T was positive. Chest x-ray showed cardiomegaly and prominence of pulmonary arteries (Figure 2). Blood sugar, serum creatinine, serum lipids and hemogram were all within normal limits. He was diagnosed as CAD with non ST elevation myocardial infarction and managed in hospital. He underwent coronary angiography which showed significant obstruction in mid left anterior descending artery (LAD) and non significant obstruction in right coronary artery (RCA). Echocardiography showed severe mitral stenosis with calcified valves, mitral valve apparatus-0.8 sq. cm, mild mitral regurgitation (MR), trivial aortic regurgitation, dilated left atrium and left ventricle, global hypokinesia with ejection fraction

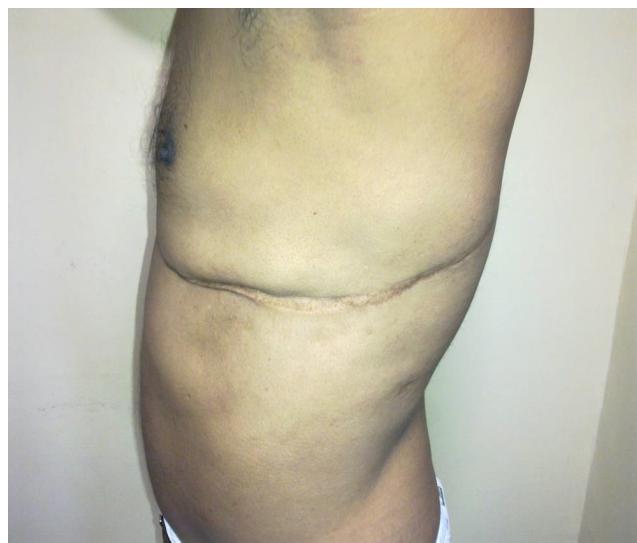


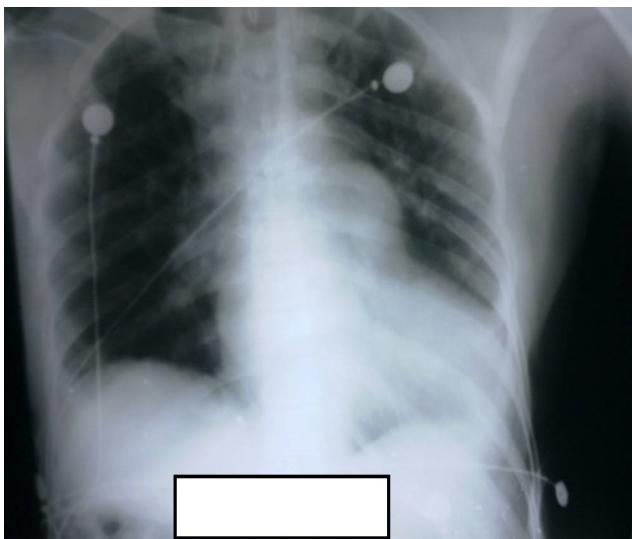
Figure 1: Postoperative scar mark (left lateral chest).

Postoperative scar mark, after CMV was done at 18 years age, extending from anterior through the lateral chest wall.

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**Figure 2:** Chest radiograph showing cardiomegaly and prominence of pulmonary arteries.

Chest x-ray done after the patient presented with chest pain, showing cardiomegaly and prominence of pulmonary arteries.

25%. The important dimensions were LA end systolic(es) 50mm , LVes 40mm, LV end diastolic(ed) 48mm, PW ed 9mm, mitral valve mean diastolic gradient 10mm Hg, and aorta 33mm. There was no clot in left atrium. Right atrium and right ventricle were normal. Later on he successfully underwent mitral valve repair (MVR) along with coronary artery bypass grafting (CABG).

RHD is fairly prevalent in South East Asia. The predominant cause of MS is rheumatic fever. About 25% of all patients with RHD have isolated MS, and about 40% have combined MS and MR. Cases of CAD occurring in patients with preexisting RHD are known, but there is relatively lesser literature in India. Jose VJ had shown the prevalence of coronary artery disease in patients with rheumatic heart disease undergoing valve surgery in India as 12.2% and more in aortic than mitral valve disease [3]. Manjunath CN et al. in their study in Indian subjects have shown that coronary artery disease is relatively uncommon in patients with rheumatic valvular heart disease (4.9%), and its prevalence is highest in degenerative aortic valve disease (23.4%) [4]. Although the possibility of coronary arteritis secondary to rheumatic fever has been discussed, but any association of RHD with CAD has not been proven. CAD may coexist silently with severe MS, as angina pectoris is often a poor predictor of CAD [2]. Mattina CJ et al. [2] showed coexistent CAD in 28 % patients of MS over the age of 40 years. They pointed out that coronary artery sclerosis is common in this population and it can be clinically silent. Alexopoulos D et al. [5] found the prevalence of CAD higher in non-rheumatic valvular heart disease as compared to rheumatic etiology, and that there is predominance of the male sex and older age.

It is interesting to note that the risk factors for CAD in this patient were his advancing age and hypertension. However he was nontobacco user had reasonably normal weight and normal lipids and sugar. Kruczak et al. [6] from Brasil found that the variables most strongly associated to CAD in patients with valvular heart disease, were typical chest pain, diabetes mellitus and dyslipidemia.

Preoperative coronary angiography before valvular surgery, can demonstrate coronary artery disease. Moreover the coronary angiography is indicated as a routine procedure in the preoperative assessment of patients with valvular heart disease in males aged  $\geq 35$  years, pre-menopausal females aged  $\geq 35$  years with cardiovascular risk factors and post-menopausal females [7].

Mitral valve repair (commissurotomy) is the preferred surgical treatment for severe MS in elderly, but mitral valve replacement is often necessary as the valvular morphology in elderly adults is usually unfavorable due to extensive calcification, rigidity and retraction

of valve components. Since our patient had already undergone corrective procedures twice, hence valve replacement was desirable. With significant involvement of his left anterior descending artery along with non-significant right coronary involvement, CABG was the better choice since it can prolong life and can be performed in the same setting as the valvular replacement.

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