

Long-Term Follow-Up of Patients with Mitral Annulus Calcification: an Echocardiographic Study

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Background: Mitral Annulus Calcification (MAC) is one of the commonest cardiac pathologies in the elderly . Its etiology is unknown, but it is associated with atherosclerosis. MAC may cause mitral regurgitation (MR) and infrequently causes mitral stenosis (MS). However, the prevalence, severity and natural history of these abnormalities have not been explored. Therefore, we sought to determine these abnormalities in a large cohort of patients with long-term echocardiographic follow-up.

Methods: Between 1995 and 2006 , all patients with MAC and long (≥ 5 years) transthoracic echocardiographic follow-up were included. Patients with rheumatic heart disease or after mitral valve replacement/ repair were excluded. MAC severity, degree of MR/MS and pulmonary pressure were all evaluated over time. Severe MAC was defined as calcification involving more than one third of the posterior mitral annulus.

Results: One hundred and eighty-nine consecutive patients (110 female-58%, mean age 71 ± 9 years, range 25 to 97) were followed for 84 ± 20 months (range 60 to 144). Co-morbidities were frequent: hypertension-162(85%) ,diabetes-85(44%), coronary artery disease-144(76%), history of stroke-49(25%) and atrial fibrillation-90(47%). At baseline, MAC was mild in 89 patients(47%) and severe in 100(53%), MR was none or mild in 150 patients (79%) and moderate to severe in 39(21%), MS was none or mild in 186(98%) and moderate in 3(2%), pulmonary pressure was normal or mildly elevated in 177(94%) and moderately elevated in 12 patients(6%), and left ventricular function was normal in 157 patients(83%). Progression from mild to severe MAC occurred in 47 out of 89 patients (53%). Mitral valve function worsened over the years: 38 out of 150 patients with initially none or mild MR developed moderate MR (3.6%/year) and 9 patients severe MR (0.7%/year). Moreover, 10 patients developed moderate MS (0.7%/year) and one patient severe MS. Moderate pulmonary hypertension developed in 36 patients (19%) .

Conclusions: Mac is a progressive disease. A limited but not negligible number of patients with MAC develop significant MR, whilst MS is rare, during long-term follow-up.