

Mitral valvotomy in Malaysian patients of 20 years of age and below

Summary:

THE MANAGEMENT of 76 young patients with rheumatic mitral stenosis in Malaysia is reported. They are divided into two groups on the basis of clinical findings, namely, those with pure mitral stenosis and those with predominant mitral stenosis. The surgical findings are presented as well. The operative mortality in patients with predominant mitral stenosis is almost double that in patients presenting with pure mitral stenosis. Some aspects of the clinical manifestations of the disease are very similar to those reported from India.

Material:

Surgical relief of rheumatic mitral stenosis in the young has been reported over the years, as a problem peculiar to certain countries, for example, India (Cherian et al (1964), Roy et al (1963), Sen et al (1966) and Iraq (Al-Naaman et al (1966)). We present our experiences in Malaysia in a series of 76 young patients, who underwent surgery during a period of ten years from January 1959 to December 1968 (Table 1). During this period, a total of 293 mitral valvotomies were performed on patients of all ages.

Table 1

Age	No. of Patients
9 - 11	7
12 - 14	15
15 - 17	29
18 - 20	25

Of the above series, 42 were females and 34 were males, giving only a very negligible preponderance of

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females.

Malaysia is a multi-racial country, with roughly an equal proportion of Malays and Chinese, and about 10% of the population is Indian. There are also 45,000 Aborigines and whilst some rheumatic mitral stenosis is found amongst them, these patients have not been operated upon for various reasons. Of the series of 76 mentioned above, 27 were Malays, 34 Chinese and 15 Indians. There does not seem to be any racial predilection to this disease.

The majority of these patients (64, i.e. 84.2%) came from the rural areas of the country, where the well-known predisposing factors for rheumatic fever prevail - damp, misty riverine conditions, lack of medical care, poor nutrition and ignorance. It is not uncommon to see, under these circumstances, several members of a whole family presenting with manifestations of rheumatic carditis.

A definite history of rheumatic fever was obtained only in 21 cases. Too much reliance cannot be placed on this figure, as history-taking was incomplete in the earlier days. However, amongst these 21 cases, 15 underwent a mitral valvotomy

within five years of the onset of their rheumatic fever, and the remaining six had their operation within ten years. This is similar to the findings of Cherian et al (1964) and Sen et al (1966), that rheumatic carditis, leading to critical mitral stenosis, occurs more rapidly in this part of the world.

The symptomatology of these 76 patients is shown in Table II.

Table II

Symptoms	No. of Patients
Dyspnoea	66
Palpitations	35
Haemoptysis	16 (21%)
Chronic cough	10
Tiredness	9
Ankle oedema	6
Embolic episode	1 (about 1%)
Asymptomatic	6

We believe that mitral valvotomy should be performed only when progressive symptoms of mitral stenosis arise. However, it will be observed that six patients were asymptomatic but mitral valvotomy was performed to enable them to obtain employment.

Diagnostic Criteria:

The diagnosis of mitral stenosis was made entirely on the basis of clinical examination, chest X-ray and E.C.G. records, to the exclusion of elaborate diagnostic methods. We based our diagnosis of mitral stenosis on a tapping apex beat, the presence of a diastolic thrill (this is sometimes absent) and a mid-diastolic murmur leading to a loud first heart sound in the mitral area. An accentuated pulmonary second sound, together with evidence of right ventricular hypertrophy on E.C.G. and the presence of a large left atrium on chest X-ray, were additional factors leading to the diagnosis. There were 53 patients in this category and for subsequent discussion we call this group, Group A.

The remaining 23 patients had a short systolic murmur in the mitral area in addition to the above findings, but were considered to be predominantly mitral stenosis cases. This group will be referred to as Group B.

In addition to the above diagnostic criteria, an opening snap was heard in 23 patients; Kerley's lines on chest X-ray was seen in nine patients.

Radiological evidence of cardiac enlargement was noted in 60 patients; 19 of these belonged to the predominantly mitral stenosis group. Three patients

revealed E.C.G. evidence of atrial fibrillation.

Operative Findings:

The nature of the valve leaflets, as felt by the finger in all instances, was expressed as (a) healthy, (b) rough, nodular or sclerotic, and (c) calcified. There were no clots in the atrium in either group. The valve size and the presence or absence of regurgitation before and after valvotomy were recorded as well. The majority of the valvotomies were performed with the transventricular dilator.

GROUP A – Clinically pure mitral stenosis

In this group of 53 patients, 15 had rough, nodular and sclerotic valves. The remainder presented with healthy valves. There were 40 patients with a valve orifice of 1 cm. or below and ten of these had valve orifices of 0.5 cm (19%). The remaining 13 patients had valve orifices of above 1 cm. Regurgitation was felt in 11 of the 53 and occurred in a further six patients following valvotomy. Four patients died after surgery (operative mortality of 7.5%).

GROUP B – Predominant mitral stenosis

Of 23 patients, seven had rough, nodular and sclerotic valves. All three calcified valves were felt in this group. Eighteen patients had a valve orifice of 1 cm. or less and eight of these patients had a valve orifice of 0.5 cm (35%). The remaining patients had a valve orifice of above 1 cm. Regurgitation was felt in six patients and incompetence occurred in a further six after valvotomy. Three patients died after this operation (mortality of 13%).

The overall mortality in the 76 patients was 9.2%.

Follow-up:

We regret to say that follow-up was possible in only 32 (42%) of this series of 76 patients. Because of a mobile population, it has generally been difficult to get patients who have undergone surgery to attend a particular clinic with any degree of regularity thereafter. The period of the follow-ups available to us varied from one to eight years after valvotomy.

Table III

Time	No. of patients
0 – 1½ years	20
1½ – 3 years	8
Above 3 years	4
	32

The six asymptomatic patients are all well and working. Of the remaining patients followed up, 22

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benefitted from surgery in that they were rendered asymptomatic and are leading normal lives. Four patients have developed symptoms mainly of effort dyspnoea, one of whom, after 5½ years, has definite signs of re-stenosis.

Discussion:

The 76 patients in this series formed about 26% of the total number of valvotomies performed during the 10-year period under review. The male:female ratio is almost equal. In the symptomatology, the incidence of haemoptysis was 21% and embolic phenomena about 1%. These findings are very similar to those reported from India, but differ from the facts published by Sellors et al (1953), Goodwin et al (1955) and Wood (1954) from the U.K., who reported a female preponderance and a much higher incidence of haemoptysis and embolic phenomena.

It is interesting to note that 18 of the 23 patients, presenting as predominant mitral stenosis, had valve orifices of 1 cm. or less. The presence of a systolic murmur in three patients with calcified valves and in three patients with auricular fibrillation can be accounted for, but in the remaining 17 patients, the explanation for the presence of a systolic murmur seems to be obscure on clinical grounds.

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