

MITRAL STENOSIS

By

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Introduction

Relief of Mitral Stenosis is the major work load of any cardiac surgical unit in our country. The diagnosis can be made clinically by any one used to auscultatory finding of the disease. Sophisticated investigations like cardiac catheterisation and Echo-Cardiography are not routinely required. The operation preferred for most of the cases is closed commissurotomy and is simple safe and cheap undertaking with low mortality. Although open mitral Valvotomy is gaining favour in advanced countries for all cases it is mainly because the pattern of disease in these countries has changed over last 30 years. It is bound to happen here also with rising standard of living.

Material and Method

The object of this paper is to review the cases that underwent closed mitral commissurotomy. As this series was done at a time when open heart was being established a wide variety of cases were accepted. Thus cases with known embolic episode, Atrial fibrillation, mixed disease but dominant stenosis, multivalvular involvement and those with severe degree of pulmonary hypertension (PA pressure over 100) were also subjected to closed procedure.

Only cases with doubt about diagnosis were catheterised. The procedure was done

using transventricular Tubb's dilator and finger manipulation to separate the commissures and subvalvular adhesions.

311 cases were operated over a period of 4½ year, July 77 to January 82, 167 were male (53.69%) and 144 were female (46.31%). The usual female preponderance is not evident here. 112 cases (36%) were of juvenile mitral stenosis defined as Mitral stenosis upto 20 years age. Here there was slight preponderance of female but not significant statistically. This incidence of JMS (Juvenile Mitral Stenosis) is among the highest of reported figures.

Tightness of stenosis was judged at operation. If only the tip of the terminal phalanx of Rt index finger fitted in the Valve aperture it was labelled 1.0 cm or less. If about 1/3 of terminal phalanx passed through the valve it was supposed to measure 1.25 cm—1.5 cm. There were many cases which could be labelled very tight stenosis approximately 0.5 cm.

Mild degree of Mitral incompetence was felt in 9.32% cases before commissurotomy. The incompetency was not felt to increase after dilatation of the valve. This was felt in valve measuring approximately 1.5 cm. Post operative regurgitation of mild to moderate degree was judged by finger above the valve and systolic thrill palpable on the back of left atrium. It

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was recorded in 52 cases (19%) Overall incidence of calcific deposits of moderate to severe degree was 20%, 63 cases. Out of these 48 were male and 15 female. Thus calcification is over 3 times more common in males. The incidence of clot in Atrium was also common in calcific valves. clots in Atrial appendages were demonstrated at operation in 18 cases 5.78%. Out of these 12 had calcific valves. About 19% of calcific valves had associated clot in Atrium.

Dislodgment of clot giving rise to peripheral embolus occurred in 4 cases (22%) out of 18 where clot was demonstrated.

Table I: Total No. of Cases—311

	No. of Cases	%age
Age.		
Under 20	112	36%
Over 20	199	64%
Sex.		
Male	167	53.69%
Female	144	46.31%
Degree of Stenosis		
1.0 cm or less	269	86.49%
1.25-1.5 cm	42	13.51%
Associated Mitral Incompetence	29	9.32%
Post. Op. Regurgitation	52/282	19 %
Calcific Valve	63	20 %
Arial Clot.	18	5.78%
Mortality.	12	3.8 %

There were 12 hospital deaths 3.8%. All of them occurred either during or within 24 hours of surgery. Analysis of mortality cases is shown in Table II.

Table II: Hospital Deaths.

Ho.	Age	Sex	Compl-ating/Ea-tor	Cause of Death.
1.	45	M	Calcific Valve	V.F.
2.	25	M	Calcific Valve Atrial Clots—	V.F. Embolism.
3.	25	M	Atrial Clots—	V.F.
4.	40	F		V.T.V.F.
5.	42	M		V.F.
6.	40	M	Restenosis Redo Operation.	Resp. Failure.
7.	24	F		Cardiac arrest.
8.	15	M	Cardiomyopathy.	Arrhythmia.
9.	47	F	Atrial Tear	Haemorrhage.
10.	18	F	Cardiomyopathy.	Arrhythmic.
11.	20	M	V. Tight Stenosis Pul.Hypertension	V.F.
12.	20		Tight Stenosis Calcific Valve	Post. Op. Respiratory failure.

There were two cases of cardiomyopathy, proved histologically later on. Both these were subjected to surgery on clinical findings. When heart was exposed the appearance suggested cardiomyopathy. However to exclude Mitral Stenosis valve was palpated. Both developed fatal ventricular fibrillation.

Discussion

Closed Mitral commissurotomy holds an important place in developing countries where shortage of funds is a constant problem. It is a simple and safe procedure and well suited to the working conditions. Commissurotomy

under cardio pulmonary by pass, is reserved for older age group, persistent Atrial fibrillation especially where there is evidence of clot in Atrial appendage, evidence of incompetence alongwith dominant stenosis and calcific valves where decision for repair and replacement is made on inspection.

As explained earlier majority of cases in this series were done when facilities for open heart surgery were being developed. This experience can be a guide to developing units where per force Stenosis has to be relieved by closed procedure inspite of various contra-indications listed above. The incidence of Juvenile Mitral Stenosis is 36% which is very high indeed¹. The result in age group 15—20 are good. The incidence of regurgitation in very young was high. Their valves were tough and less pliable. Non-availability of child size dilator compounded the difficulty. Another problem about the very young was their predilection of going into pulmonary oedema. Three cases (around age 10) died following severe pulmonary oedema on pre-operative night. Since then we put all juvenile cases on Beta blockers to prevent emotional and exercise Tachycardia. There has been no repetition of that dreadful complication. We expect greater incidence of restenosis in these younger patients².

Females have not out-numbered males as is common belief. May be it is due to social factors that they pull on with their disease rather than come for surgery. Any operation is looked upon with fear in our society and Heart operation more so. Thus it is accepted as last resort when the patient is almost bed ridden. Tightness

of stenosis as measured at operation by finger showed about 86% to 1.0 cm or less in diameter. 30 cases 9.6% had very tight (0.5 cm) stenosis. It is indeed remarkable how cardiac output is maintained to sustain life through small pin hole meatus. Many patients with calcific valves had satisfactory commissurotomy and subsequent relief of symptoms. The incidence of 20% Calcific valves in the series is not much greater than say 18% in one series³, male female ratio were 3:1: clots were common with calcific valve. Overall incidence of clots were 6% Embolism as a result operative procedure occurred in 4 cases of which two proved fatal. Mitral incompetence of some degree felt before commissurotomy was noted in 9.32% of cases, and operative procedures did not make it worse in the majority.

Post operative regurgitation was recorded in 19% of cases with pure stenosis. Regurgitation as such does not jeopardize satisfactory relief of symptoms except in minority of cases of older age group with Rigid valves. Regurgitation was noted to occur in several cases when efforts were being made to separate sub valvular adhesions. Probably there was rupture of minor Chordea. The other cause would be an accentric tear in a rigid fibrotic or Calcific commissure. One young man with Calcific valve developed moderately severe regurgitation resulting in CCF which necessitated valve replacement in three months time.

Mortality in selected cases of pure Mitral Stenosis in Sinus rythm and mobile valves is quite low.

In this series over all mortality was 3.8%.

All types of complicated cases have been included. Operation was not refused on the ground of severe pulmonary hypertension, Tricuspid incompetence clots in atrium, Calcific Valves or associated other Valve involvement.

Diagnosis of dominant Mitral Stenosis with or without complicating factors was enough to earn close Mitral Valvotomy during early part of this series.

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