

158. Percutaneous Balloon Mitral Valvuloplasty Success in Rheumatic Mitral Stenosis With Prior Commissurotomy

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Body

Background: Few studies reported percutaneous mitral balloon valvuloplasty (PBMV)'s safety and success rate in rheumatic mitral stenosis (MS) with prior commissurotomy. However, repeat PBMV may be suitable in mitral restenosis with favorable valve morphology and may delay MV surgery. The present study aimed to compare the PBMV success rate between rheumatic MS patients with and without prior commissurotomy and determine predictors for PBMV success in rheumatic MS patients.

Methods: We studied PBMV using Inoue balloon between June 2002 and February 2021 in Songklanagarind hospital. The interatrial septal puncture was guided by transesophageal echocardiography. Patients were classified into two groups: group 1 without prior commissurotomy and group 2 with prior commissurotomy (mitral restenosis after percutaneous or surgical commissurotomy). PBMV success was compared between the two groups in the adjusted logistic regression model. PBMV success was defined as post-PBMV mitral valve area (MVA) ≥ 1.5 cm² or $\geq 50\%$ increase in MVA and mitral regurgitation less than grade III without death, stroke, mitral surgery, and cardiac tamponade.

Results: There were 647 PBMV procedures in 617 patients during the study period. Thirty-nine procedures (5.77%) were performed in patients with prior commissurotomy (group 2). Both groups showed female predominance, and the mean age was approximately 40 years old. The median Wilkins score was 8 and 9 in groups 1 and 2, respectively (p-value 0.01). Compared with group 1, group 2 had higher median pre-PBMV MVA (0.92 vs 1.02, p-value 0.004) and lower mean pressure gradient (12 vs 9, p-value 0.01). The median maximum balloon size was 25 millimeters in group 1 and 26 millimeters in group 2 (p-value 0.0001). PBMV success rate was 78.76% in group 1 and 64.10% in group 2 [p-value 0.56, adjusted odds ratio =0.79, 95% CI (0.36-1.72)]. The incidence of emergency surgery was not different between the two groups (group 1 vs. 2; 2.63% vs. 5.13%, adjusted p = 0.79). MVA before PBMV and Wilkin score ≤ 8 were independent predictors for PBMV success, while prior commissurotomy was not.

Conclusion: PBMV was safe in rheumatic MS with mitral restenosis after commissurotomy. The PBMV success rate in mitral restenosis was comparable to those without prior commissurotomy. MVA before PBMV and Wilkins score were independent predictors for PBMV success.

PBMV success* Prior vs. no prior commissurotomy
OR 0.79 (0.36-1.72), P = 0.56

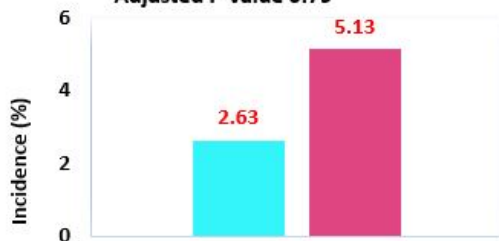


■ No prior commissurotomy ■ Prior commissurotomy

*post-PBMV MVA ≥ 1.5 cm² or $\geq 50\%$ increase in MVA and MR < 3+ without death, stroke, MV surgery and cardiac tamponade.

Emergency surgery

Adjusted P-value 0.79



■ No prior commissurotomy ■ Prior commissurotomy

Predictors for PBMV success in multivariable logistic regression model

	Adjusted Odd ratio for PBMV success	95%CI	P-Value
Age	0.99	0.97-1.01	0.87
AF	0.91	0.57-1.46	0.70
Pre PBMV MVA	0.37	0.14-0.95	0.04
Wilkin score <8	1.68	1.1-2.56	0.01
No prior commissurotomy	0.79	0.36-1.72	0.56
Functional class IV	3.84	0.47-31.36	0.21
RVSP	1.00	0.99-1.01	0.80
Severe TR	0.57	0.24-1.36	0.20

Clinical Implications: My study will help enable cardiovascular clinicians to decide treatment strategy in rheumatic MS with mitral restenosis.