Conclusion: In patients with severe mitral stenosis and few or no symptoms, PMC: 1) Can be safely performed 2) Provides good immediate and long-term results in a large variety of patients. 3) Should be considered in particular in patients aged ≤50 years, in whom it prevents functional deterioration in half of the cases 20 years after PMC.

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Factors predicting mitral restenosis after successful percutaneous mitral commissurotomy

Leila Bazdah, Hédi Baccar, Wejdène Ouechtati, Slim Sidhom, Hbib Ben Ahmed, Sami Marouène, Imène Fradi, Saoussen Antit
Hôpital Charles Nicolle, cardiologie, Tunis, Tunisie

Introduction: Percutaneous mitral commissurotomy (PMC) is the alternative treatment of choice for mitral stenosis (MS). Its immediate and medium term results are comparable to those of surgical commissurotomy, however in the long term there is a risk of restenosis. The purpose of this study is to determine the factors predicting restenosis after PMC.

Methods: 322 patients (66% women), average age: 35 ±13 years (9-75 years) having a tight MS and treated by PMC with Inoué balloon. The anatomic aspect of the mitral apparatus before PMC has been studied according to the criteria of the Wilkins score with a concomitant study of the state of mitral commissures. The primary success of PMC is defined as follows: mitral area (MA) post-PMC >1,5 cm^2 and gain in MA >25% and mitral regurgitation (MR) ≤ grade 2. Mitral restenosis is defined as a MA <1,5 cm^2 and/or loss >50% of initial gain in MA.

Results: The rate of primary success of PMC was 86% and mean MA post PMC was 1,82±0,33 cm^2 compared to MA pre-PMC of 1±0,18 cm^2 (p <0.0001). Opening of two commissures has been observed in 74% of patients. After an average period of 62±32 months, only 12% of patients had a dyspnea stage III-IV of NYHA, MA was 1,64±0.3 cm^2 (p<0.001) and mitral restenosis happened in 47 patients (20%) after a period of 60,48±27 months (22 – 124 months).

The independent predictors of mitral restenosis after a successful PMC were: previous surgical commisurotomy, Wilkins score >8, MA after PMC <1,8 cm^2 and absence of bicommissural opening post PMC.

Conclusion: A favorable anatomy of mitral apparatus and the optimisation of immediate result of PMC are the guaranty for the maintain of good result in the long term.

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Percutaneous mitral balloon commisurotomy in patients with restenosis after surgical commisurotomy: a comparative study

Leila Abid (1), Ahmed Tounsi (2), Samir Kammoun (3)
(1) Hôpital Hédi Chaker, cardiologie, Sfax, Tunisie – (2) FMS, University Hédi Chaker hospital, cardiology, Sfax, Tunisie – (3) CHU Hédi Chaker, cardiologie, Sfax, Tunisie

Methods: We performed percutaneous mitral balloon commisurotomy (PMC) in 361 patients to compare the effectiveness of PMC between patients with mitral restenosis after surgical commissurotomy (group 1) and patients with unoperated mitral stenosis (group 2). Thirty-nine had undergone closed or open mitral commissurotomy 8.4 years before.

Results: There were no significant differences in clinical profiles between the two groups. The mitral valve area was increased from 1.1 0.31 to 1.94 0.58 cm^2 in group 1 and 0.94 0.3 to 2 0.7 cm^2 in group 2 (p>0.05). The mitral gradient was decreased from 14.6 5.9 to 6 2.6 mm hg in group 1 and 18 7.0 to 7 5.3 mm hg in group 2 (p>0.05). The increment of mitral regurgitation and significant left to right shunt after PMC were not significantly different (8.9% versus 13.7%, 4.2% versus 8.4% respectively). Optimal results were attained in 81% of the patients in group 1 and in 88.3% of the patients in group 2 (p>0.05).

Conclusion: These results suggest PMC in mitral restenosis after surgical commissurotomy may be safe in selected patients and may be equally effective as in unoperated mitral stenosis.

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Relationship between cut-off values of peak aortic valve velocity and those of other Doppler echocardiographic parameters of severity in patients with aortic stenosis and normal flow

Anne-Laure Castel
CHU Amiens, cardiologie B, Amiens, France

Background: Previous studies have reported inconsistencies between echocardiographic parameters of severity in aortic valve stenosis (AS). Peak aortic valve velocity (Vmax) strongly predicts outcome in AS patients. The present study was therefore designed to identify the cut-off values of echocardiographic parameters of severity in normal flow (NF) AS corresponding to a Vmax ≥3 m/s, ≥4 m/s, 5 m/s or 5.50 m/s. This study was therefore designed to identify the cut-off values of echocardiographic parameters of severity that correspond to Vmax≥3, 4, 5 and 5.5 m/s.

Methods and results: We retrospectively reviewed the echocardiograms of 528 consecutive patients with AS, left ventricular (LV) ejection fraction>0.50 and NF (stroke volume index>35 mL/m^2). The accuracy of mean pressure gradient (MPG), aortic valve area (AVA), and indexed AVA for BSA (IAVA) to predict Vmax≥3, 4, 5 and 5.5 m/s ranged from 0.89 to 0.99, and the best predictor was MPG for various levels of Vmax. The best values of MPG, AVA, and IAVA to predict Vmax≥3 m/s were 22 mmHg, 1.15 cm^2, 0.60 cm^2/m^2, respectively. While a cut-off of Vmax≥4 m/s to define severe AS was consistent with a value of 39 mmHg for MPG, corresponding values for AVA and IAVA of 0.90 cm^2 and 0.48 cm^2/m^2 respectively were substantially different from those recommended in current guidelines. MPG≥60 and 65mmHg, AVA≤0.76 and ≤0.68 cm^2, and IAVA≤0.41 and ≤0.35 cm^2/m^2 were identified as predictors of Vmax≥5 m/s and ≥5.5 m/s (very severe AS), respectively.

Conclusions: Guidelines recommended cut-off values for AVA and IAVA are not consistent with those of Vmax and MPG. The results of the present study may serve as safeguards in case of apparent inconsistencies between echocardiographic parameters of severity in NF AS.

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Short and long-term outcome of low flow, low gradient severe aortic stenosis with preserved left ventricular ejection fraction: results from a cardiac catheterization study

Dania Mohty (1), Philippe Pibarot (2), Julien Magne (3), Mathieu Deltreuil (1), Najmeddine Echahidi (1), Claude Cassat (1), Victor Aboyans (1), Marc Laskar (4), Patrice Virot (1)
(1) CHU Limoges, cardiologie, Limoges, France – (2) Hôpital Laval, Institut de Cardio pneumologie de Quebec, Quebec, Canada – (3) CHU Sart Tilman, cardiology, Liège, Belgique – (4) CHU Limoges, chirurgie cardiaque, Limoges, France

Background: The exact prevalence, characteristics and impact on both short- and long-term outcome of low flow, low gradient severe aortic stenosis (LFLG) despite preserved left ventricular ejection fraction (LVEF), remain debatable. The aim of our study is to describe the outcome of a large group of patients with LFLG AS using cardiac catheterization data.

Methods and Results: Between 2000 and 2010, 770 patients with preserved LVEF (>50%) and severe AS (valve area <1cm^2) without significant other valvular heart disease having underwent cardiac catheterization, were retrospectively analyzed. Mean age was 74±8 years, 42% were female, 46% had associated coronary artery disease. LFLG (indexed LV stroke volume<35 mL/m^2 and mean pressure gradient<40 mm Hg) were found in 13% of patients (n=99), normal flow/high gradient (NFHG) in 50% (n=388), LFHG in 14% and NFLG in 22%.

In comparison with classical patients with NFHG, those with LFLG were significantly older, and more often female. The cardiac cathererization hemodynamic data including the systemic compliance, vascular systemic resistances and the valvulo-arterial impedance were significantly impaired in LFLG patients as compared to those with NF/HG. Thirty-days mortality was higher in patients with LFLG when compared to NFHG (9 vs. 4%, p=0.06) and 10-year survival was significantly reduced in LFLG (32±8%) when compared to NFHG (66±4%; p=0.0005) (figure). Furthermore, after adjustment for

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