References


Percutaneous mitral balloon commissurotomy: a useful and necessary treatment for the western population

See page 1691 for the article to which this Editorial refers

Since the first publication by Inoue in 1984[1] on percutaneous mitral balloon commissurotomy, a considerable number of patients with mitral stenosis have been treated by this method, enabling us to assess its efficacy and risks and also to determine the long-term results. For patients with favourable characteristics, i.e. young patients with favourable anatomy, several studies, including randomized ones[2], have demonstrated that percutaneous mitral balloon commissurotomy appears to be the procedure of choice, provided that it is affordable. On the other hand, much remains to be done in refining indications for patients with unfavourable characteristics, especially those with unfavourable anatomy who are the most common subgroup in Western countries. The study by Hildick-Smith et al[3] in this issue provides useful information on this subject by presenting the long-term outcome of a typically Western population of 100 patients treated using percutaneous mitral balloon commissurotomy and carefully followed-up.

The characteristics of this population provide a good snapshot of the demographics of mitral stenosis in the Western world[4], half of the patients were over 65, with significant co-morbidity in two-thirds of them. The vast majority were severely symptomatic, in atrial fibrillation, and frequently with a history of previous surgical commissurotomy. Anatomy was unfavourable, as defined by an echo score >8, in 60% of cases. The authors deliberately chose to use a conservative approach, aiming at an improvement of valve function sufficient to relieve symptoms and at low risk. In fact, good immediate results, defined by a valve area >1.5 cm² without mitral regurgitation >2/4, were obtained in 61% of cases, and the mean final valve area was 1.6 cm². These final results are inferior to what is usually observed[5]. These less than optimal results are partially due to patient-related factors, as it has been established that unfavourable clinical and anatomical characteristics are predictive of poor immediate results of the procedure. It is also related to the performance of the technique, especially to the absence of echocardiographic monitoring, which optimizes the result of the Inoue balloon technique, using a stepwise approach. On the other hand, the conservative strategy was successful as regards safety, as no patient died, major complications were rare, and in particular no severe mitral regurgitation occurred despite the unfavourable characteristics.

One of the strengths of this paper is the quality of the follow-up, which used clinical and echocardiographic

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assessment, which is rare. After 6 years, survival, event-free survival (freedom from death, mitral valve replacement or repeat valvuloplasty) and freedom from re-stenosis were, respectively, 82%, 56% and 75%. Once again, these results are less satisfactory than the results usually reported with the technique, which reports event-free survival ranging from 65–84% after 7–10 years[6,7]. Here again, these results should be interpreted in the light of the patients’ characteristics, which are less favourable than in previously published studies. The authors confirmed the multi-factorial nature of the prediction of the long-term results of balloon commissurotomy, which do not rely solely on valve anatomy but also on clinical factors, age, and consequences of valve disease. However, the quality of the long-term results of these patients can also be explained by the suboptimal immediate results, as it has been consistently demonstrated that the quality of the immediate results is a strong predictor of the long-term results[3].

As regards indications in patients with unfavourable anatomy, percutaneous mitral balloon commissurotomy is the technique of choice in patients who have contraindications or who are at higher risk for surgery. However, for patients with heavy calcification or bi-commisural calcification, surgery should be the initial treatment.

In the other patients with unfavourable anatomy, there is some debate, as some favour immediate surgery because of the less satisfying results of percutaneous mitral balloon commissurotomy, whereas others prefer percutaneous mitral balloon commissurotomy as the initial treatment for selected candidates, and only resort to surgery in the event of failure. Valve replacement has its drawbacks, which are operative mortality, especially in the elderly, and prosthesis-related complications whose cumulative incidence compromises late outcome, particularly in young patients who are most exposed to the risk of long-term deterioration of the bioprosthesis or a thromboembolic event in the case of mechanical valve replacement. After percutaneous mitral balloon commissurotomy, however, despite frequent deterioration on follow-up, continuing good long-term results are possible in patients with unfavourable anatomy but who have otherwise favourable characteristics. Percutaneous mitral balloon commissurotomy makes it possible to defer surgery in such patients.

As a matter of fact, the strategy of aiming at a moderate increase in valve area in patients with unfavourable characteristics is debatable and has not been proven to be better than a more aggressive percutaneous procedure, or surgery. However, the conclusions from the authors may lead to recommending conservative balloon procedures in certain patients, who are satisfied by suboptimal results. In our opinion, such a strategy might be recommended for patients who are at high risk for surgery or who have contraindications for surgery, such as elderly or pregnant patients. However, this is probably not the case for patients who are still candidates for surgery. For them, it could be preferable to perform a more aggressive balloon procedure using a stepwise dilatation technique under echo guidance, which would provide better long-term results if successful, or will be followed by surgery in the event of unsatisfactory initial results. Such an approach will avoid mid-term deterioration and the need for delayed re-operation in patients who are at higher risk.

To conclude, percutaneous mitral balloon commissurotomy has an important role in the treatment of the ‘typical’ Western population with severe mitral stenosis, not as a rival but as a complementary technique to surgery.

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References