

## Percutaneous mitral valvuloplasty: the debate is there

### *Perkütan mitral valvüloplasti: Burada tartışma var*

Rheumatic mitral stenosis continues to be quite prevalent in many developing countries. Obviously driven by a low incidence of rheumatic fever, the prevalence is remarkably lower in Western communities. An estimation quoted from the Euro Heart Survey demonstrated that mitral stenosis accounts for 12% of the single native valve disease (1). Such a figure has likely been influenced by migration from developing countries.

Until the early 1980s, surgery was the only trade-off to tackle the problem of mitral stenosis. After a long wait, the first introduction of percutaneous mitral valvuloplasty (PMV) by Inoue and his colleagues actually heralded a new era in dealing with the problem (2). Thereafter, during the past two decades, PMV has turned out to be the standard of care in most patients with symptomatic mitral stenosis (3). A large body of evidence from several large series reported not only an excellent outcome on the short- and long-term (4-8), but also a low incidence of serious complications (9). More interestingly, in patients with mitral valve morphology suitable for balloon valvuloplasty (a favorable valve morphology), results of randomized trials comparing PMV with surgical commissurotomy (both open and closed) have demonstrated comparable clinical, echocardiographic, and hemodynamic outcome between the two therapeutic strategies, in addition to shorter hospital stay and lower morbidity and mortality in the setting of PMV (10-14).

In this issue of the Anatolian Journal of Cardiology, Korkmaz et al. (15) present a single-center but well-powered well-designed prospective study that explored the immediate and long-term outcome of PMV in patients with moderate to severe mitral stenosis, trying to identify the predictors of good outcome at the two time points of follow-up. The salient points of their conclusion were an excellent immediate success rate quite comparable to the figures reported in literature, predicted by the preprocedural mitral valve area; and a good long-term outcome at five years follow-up, predicted by both the preprocedural peak pressure gradient across the mitral valve and the percent increase of mitral valve area following the procedure. In this way, the authors seem to add another piece to the already expanded puzzle of literature on the topic.

An issue of immense clinical interest is identifying *a priori* the 'lucky' patients who will have a good outcome following the

procedure, both immediately and on the long run. In the quest to refine patient selection beforehand, echocardiographic scoring systems have been put forward, based on mitral valve 'favorable' characteristics. The most widely acknowledged of these was the Massachusetts General Hospital (MGH) scoring system that includes scoring values for mitral valve leaflet thickness, mobility restriction, calcification and subvalvular affection (16). Although revered and time-honored, this scoring system has recently come under intense scrutiny, chiefly after an emerging body of literature emphasized the key role of commissural calcification and subvalvular affection in determining a 'poor' procedural outcome (17, 18). More recently, a novel scoring system was suggested based only on these two parameters, and better predicted immediate outcome following the procedure, as compared with the standard MGH score, in a late-breaking small randomized study (19). Excluding other parameters (namely, leaflet thickness and mobility) not closely related to the outcome of PMV would further improve the immediate success rate of the procedure, and rigorously contribute to long-term event-free survival.

A lingering question remains as to whether asymptomatic or minimally symptomatic patients with severe mitral stenosis should also undergo PMV. Owing to the invasive nature of the procedure, it should reasonably be reserved to the following categories: (1) extraordinary risk of thromboembolism (including recurrent atrial fibrillation), (2) severe pulmonary hypertension, (3) need for extra-cardiac surgery, and (4) intention to become pregnant. Another issue relates to those with 'unfavorable' valve characteristics, a condition encountered rather frequently in Western communities. Which is the 'better' strategy for intervention in this group (surgical or percutaneous) continues to be a matter of debate. Given the unsatisfactory results of PMV, some authorities vote for surgical intervention from the start, whereas others endorse the performance of PMV initially in 'selected' patients, resorting to surgery on the event of procedural failure or late deterioration. In view of the lacking evidence from randomized trials, the decision should be individually 'tailored' for each patient, keeping in mind that predictors of success are multifactorial in nature. In this context, patients with mild to moderate non-commissural calcification, but otherwise

**Address for Correspondence/Yazışma Adresi:** Wail Nammas, MD, Department of Cardiology, Ain Shams University, Cairo-Egypt  
Phone: +2124063718 Fax: +2224820416 E-mail: wnammas@hotmail.com

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favorable characteristics, such as young age and sinus rhythm, may be 'good' candidates for PMV. On the other hand, commissural calcification, significant subvalvular affection, in the presence of other unfavorable clinical characteristics would invite early surgical intervention.

### Wail Nmmas

Department of Cardiology, Ain Shams University,  
Cairo-Egypt

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