Editorials

Percutaneous mitral commissurotomy: an effective treatment in ‘ideal’ candidates whatever the approach

See page 1765 for the article to which this Editorial refers

Ten years after its introduction by Inoue[1] a considerable number of patients with severe mitral stenosis have been treated by percutaneous mitral commissurotomy. The good immediate[2] and mid-term results[3] obtained have led to increasing use of the technique, which has become the second most important in the field of interventional cardiology. Several areas are still subject to debate: long-term results, selection of patients, and technical aspects. Important technical advances during this time have been mainly in the area of balloon design, but also concern the route of catheterization, following the publication of Stefanidis et al.[4], who proposed a retrograde non-transseptal approach, thereby avoiding the inconvenience of transseptal catheterization.

The study published in this issue by Bahl et al.[5] is the first to compare the efficacy of the accepted, traditional antegrade approach with the retrograde non-transseptal technique; furthermore it is the largest series of cases performed using the retrograde approach, other than that of Dr Stefanidis himself. In addition to being of technical interest, this publication is of value in presenting a large single-centre experience of more than 1000 treated patients.

This series represents a good example of the epidemiology of mitral stenosis in countries where rheumatic fever remains endemic: the patients concerned were young often in sinus rhythm, and most had favourable anatomy without valve calcification. It should be noted that the absence of sophisticated anatomical classification in this paper belies a somewhat pragmatic approach to the technique. Comparison of the results obtained with retrograde and antegrade techniques should take account of the fact that the study was retrospective and non-randomized with inherent bias.

Technically, the expertise of the operators is demonstrated by the very high success rate, the short procedure, and the low complication rate. Technical failure occurred in 0-9% of cases using the antegrade technique, due to difficulties in transseptal catheterization or crossing the mitral valve, and slightly more often in cases using the retrograde approach (2%) due to inability to enter the left atrium. In these cases, the authors were able to benefit from their familiarity with both techniques by successfully using the alternative approach. The duration of the procedure (excluding the first cases) was particularly short: with, once again, a slight advantage in favour of the antegrade technique: 15 ± 8 min vs 22 ± 14 min. These findings indicate that the retrograde approach is not as straightforward as initially suggested and requires technical skill and a significant learning curve.

Overall, the complication rate was very low. The complications illustrate, in part, the respective disadvantages of the two methods: on the one hand, 2% cardiac tamponade and 1% left-right inter-atrial shunt related to transseptal catheterization following the antegrade technique, and on the other, 2% vascular complications requiring surgery, 1% blood loss requiring transfusion, 28% transient conduction problems, and 2% complete heart block following the retrograde technique. Finally, the incidence of severe mitral regurgitation (4% and 5%, respectively) were identical in the two groups. One might have assumed that the rate of severe mitral regurgitation would have been higher using the retrograde technique, due to the risk of accidental introduction of the guidewires (and subsequently the balloon) into the subvalvular apparatus; however, this series confirms the results of Dr Stefanidis, who reported that this complication is rare.

As one would expect in a young patient group with favourable valvar anatomy, the results of balloon dilatation were excellent: 94% of patients had a final valve area ≥ 1-5 cm² with no significant mitral regurgitation. This immediate improvement in valve function was maintained in the mid-term and correlated with good functional results. The valve areas obtained after dilatation by the antegrade approach were slightly larger than those obtained using the retrograde technique. But these differences are small and may result from methodological bias due to the non-randomized nature of the study and the use of haemodynamic measurements which are not the ‘gold

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standard' for the assessment of the early results of percutaneous mitral commissurotomy, especially when a transseptal approach is used with its inherent risk of inter-atrial shunt[6].

Finally, the problem of cost is addressed in this study. Overall, we should remember that the duration of hospitalization was short (24 h) and that re-use of balloons is commonplace in developing countries. In fact, the comparison of costs in the present study is a comparison of the balloons used rather than the technique itself, with an advantage in favour of polyurethane balloons over the Inoue balloon.

This study therefore demonstrates excellent results obtained using percutaneous mitral commissurotomy in a country where rheumatic heart disease is endemic, where the patients are numerous, with favourable clinical and anatomical characteristics, and where the operators are able to perform a high number of procedures and thereby acquire a high level of expertise. This situation is, of course, the ideal field of application and can be achieved provided the means exist. Finally, the series of Dr Bahl is an important contribution to the literature concerning the retrograde technique. The study does not demonstrate the superiority of the retrograde technique over the antegrade approach, but suggests that the two approaches can be complementary, particularly in technically difficult cases.

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References

The absence of ventricular premature beats on a Holter is like a normal sedimentation rate

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Hedblad et al[1] report in this issue on the increased mortality from ischaemic heart disease (hazard ratio 3.0, 95% CI 1.7-5.2) during a 10-year follow-up of a cohort of 456 men aged 68 years (men born in 1914 in Malmö, Sweden) who had frequent or complex ventricular arrhythmias detected on a 24-h ambulatory (Holter) ECG recording. The increased mortality risk persisted after adjustment for history of coronary heart disease, traditional risk factors, and cardiovascular therapy. One question raised by this study is whether ventricular arrhythmias are a marker for silent ischaemic heart disease in elderly men.

Detection of silent myocardial ischaemia gained popularity in the mid-1980s when there was particular focus on asymptomatic ST segment depression on Holter recordings. For the most part, these studies involved patients with established coronary disease, with the clinical significance of asymptomatic ST segment depression directly related to the proximity of the recording of an acute coronary event. When we studied cardiac patients 2 months or more after an acute coronary event, Holter-recorded ST segment depression had no prognostic value[2].

In the setting of acute and chronic coronary disease, ventricular premature beat frequency and complexity are associated with an increased risk of recurrent coronary events and death[3,4]. However, the risk posed by these ectopic beats are of borderline significance when compared to the risk associated with cardiac symptoms (advanced New York Heart Association class) or signs (ejection fraction <0.40) of