surgery and MVS. We concluded that the beating heart method was a safe alternative to conventional surgery in redo operations in high-risk groups in particular [15]. Re-operation via the right thoracotomy has become popular because of the difficulties stated above concerning re-operations. We preferred thoracotomy in patients requiring re-operative sternotomy as the right anterolateral thora-
cocomy required minimal dissection and mitral valve could be exposed almost perfectly. Re-operative sternotomy poses various risks, such as cardiac injury, embolism, graft injury, sternal dehiscence, phrenic nerve injury, and exces-
sive bleeding. There are also other advantages of thoracot-
omy over resternotomy, since the course of the operation is faster with fewer events and it results in less bleeding in the postoperative period requiring less transfusion. Con-
sequently, thoracotomy is a far less complicated operation for the surgeon, and is more easily tolerated by the patients. Of the 29 patients requiring re-operation in the present study, nine underwent the right anterolateral thoracotomy.

The beating-heart left thoracotomy approach is a possible choice for patients undergoing operation two or more times. Suzuki et al. reported that they operated 16 redo cases successfully with beating-heart left thoracotomy [16]. Although the technique used in beating-heart MVS is rather simple, it yields low mortality and morbidity rates, indicating the applicability of the technique. Compared with the conventional method, it has shorter operative times, postoperative intubation time and length of hospital stay. Furthermore, less drainage volume and less blood transfusion was observed in this group. Consequently, the postoperative quality of life is improved.

One of the weak point of our study is some level of heterogeneity of the groups variables, DM, HT at control group and chronic obstructive pulmonary disease (COPD), active endocarditis at study group are more common. During study period patients were selected randomly for the groups but as a result some variables were aggregated for one of the group.

Besides, mitral valve repair procedure are more common in the study group. Because we believe that beating heart valve surgery creates an advantage for the valve repair procedure [17].

We conclude that beating-heart MVS can be performed successfully in selected high-risk patients in particular which will lead to increased morbidity and mortality in the postoperative period. So that this procedure is a choice taken into consideration especially in high-risk patients.

References


eComment: Right thoracotomy for redo mitral valve surgery with perfused heart on ventricular fibrillation

Author: Ovidio A. Garcia-Villarreal, Department of Cardiac Surgery, Hospital of Cardiovascular Disease No. 34, IMSS, Monterrey, Mexico
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As Babaroglu et al. have demonstrated [1], beating heart mitral valve (MV) surgery can be successfully performed. Of note, there was statistically a significant difference for length of hospital stay which was shorter for the beating heart MV surgery group. Despite finding no significant impact on the rate of mortality or morbidity, the usefulness of this article lies in demonstrating that MV surgery can be carried out safely with both the conventional aortic clamping as well as beating heart. Similar results were reported by Holman et al. [2] working with cases of redo MV surgery through a right thoracotomy. Excluding cases of aortic insufficiency with retrograde flow obscuring the operative field of the MV, the most important limitation that I find with this technique is the fact that it is very difficult to perform a MV repair beyond the MV annuloplasty due to the constant motion of the heart, and conse-
quently, of the MV.

On the other hand, I think that this concept of beating heart for MV surgery is an excellent choice for redo MV surgery via right [2] or left thoracotomy [3]. In these cases, multiples adhesions due to previous cardiac
operations or the presence of coronary bypass grafts make it extremely risky to aortic cross-clamping. The right thoracotomy approach avoids the problems associated with dissection around the aorta. The procedure can be performed on beating heart or ventricular fibrillation without aortic cross-clamping.

Unpublished data by me about 13 cases for redo MV surgery through a right thoracotomy showed very similar results to those by Babaroglu et al. [1] and Holman et al. [2]. All these cases were operated on with cardiopulmonary bypass on ventricular fibrillation, at a perfusion temperature of 25–28°C. Indeed, there were no operative deaths, and the length of hospital stay was 7 (6/24) days.

References