

Abstract

Background. Although minimally invasive approaches for valvular heart surgery have been widely used for almost ten years, the advantages of such techniques are still controversial when this approach is compared to the conventional median sternotomy.

Methods. Retrospective case-matched control study of two groups of 60 patients, who underwent minimally invasive (MIAVR) and standard sternotomy (SAVR) for aortic valve replacement (AVR), performed by a single surgeon. Sixteen parameters were considered in the matching process: age, sex, body surface area (BSA), past medical history, valvular pathology, associated coronary artery disease (CAD), New York Heart Association class (NYHA), ejection fraction (EF), other concomitant valve disease, active endocarditis, size and type of valve implanted. Student t test, Chi square test and ANOVA were used for the comparisons. *Results.* Minimally invasive aortic valve procedures were associated with earlier extubation ($p=0.0049$), less use of narcotics ($p=0.0007$), shorter length of stay (LOS) ($p=0.00018$), and significant in-hospital cost savings ($p=0.00018$). No differences were found in the use of inotropic agents, blood products, incidence of arrhythmias, stroke, infections and re-operation for bleeding. Operative times were significantly increased in the minimally invasive cohort ($p<0.0001$). In-hospital mortality was lower in the minimally invasive approach group (1.6% vs. 5%). *Conclusions.* AVR can be safely performed with minimally invasive techniques. Better cosmetic results, less postoperative pain, shorter hospitalization, lower costs and early return to normal life support this technique as a surgical choice.