

Outcomes in superior transeptal and left atrial approach: does the number of valves matter?

Amer Harky¹, Runzhi Chen², and Andrew Muir¹

¹Liverpool Heart and Chest Hospital NHS Foundation Trust

²University of Liverpool

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Running Head: Approaches to the Mitral valve

Amer Harky MSc^{1,2}, Runzhi Chen MBBS³, Andrew D Muir MD²

1. University of Liverpool, Liverpool, UK

2. Department of Cardiothoracic Surgery, Liverpool Heart and Chest, UK

3. Faculty of Medicine, Imperial College London, UK

Corresponding author

Amer Harky

MRCS, MSc

Cardiothoracic Surgery

Liverpool Heart and Chest

UK

E-mail: aaharky@gmail.com

Tel: +44-151-600-1616

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Dear Editor,

We read with interest the recent article by Izzat *et al.* [1] in which they concluded that superior transeptal approach (STS) for mitral valve surgery has equivocal clinical outcomes to left atriotomy (LA) aside from higher arrhythmia rates.

Whilst we agree with some of their conclusions, there are many aspects of this study that we question. In our recent meta-analysis, we compared 16 studies, a total of 4,537 patients, (n=1,472 for STS and n=3,065 for LA) including two randomised trials [2]. STS was associated with higher rates of post-operative cardiac arrhythmias in cohorts that had combined or multiple cardiac procedures [2]. However, when comparing isolated mitral valve surgery through either LA or STS approach, all such differences were eliminated with no differences in cardiopulmonary bypass and aortic cross clamp times observed (98±27 vs 101±26 minutes

in LA and STS, WMD -3.20 minutes, 95% CI [-16.02, 9.63], $p = 0.62$ and 73 ± 21 vs 77 ± 21 minutes in LA and STS, WMD -2.51 minutes, 95% CI [-14.14, 9.12], $p = 0.67$ respectively). Similarly, no differences in new post-operative atrial fibrillation or permanent pacemaker requirement were observed (RR 0.87, 95% CI [0.68, 1.11], $p = 0.25$ and RR 0.72, 95% CI [0.41, 1.26], $p = 0.25$ respectively).

It would therefore have been more robust for the authors to conduct a sub-analysis comparing isolated mitral valve surgery outcomes. We acknowledge that this would have been difficult as their STS cohort was associated with 94.2% additional interventions leaving either a very small comparison group or the potential for significant bias not limited to operative times and arrhythmia. Attempts at having more similar groups could have been attempted to avoid invalidating their conclusions [3]. Furthermore, the LA cases were done at a rate of 11 per year in the 1st half of the study with the STS cases at 21 per year in the 2nd half of the study. These differences would appear to be seniority related, meaning comparisons may be unwise.

References:

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