Reviewer’s report

Title: Improved Operative and Recovery Times with Mini-Thoracotomy Aortic Valve Replacement

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Reviewer: Antonio Maria Calafiore

Reviewer’s report:

The Authors report their experience with 503 patients who underwent isolated AVR from 2012-2015 using one of three techniques: 1) Mini-thoracotomy, 267 (53.1%), 2) Mini-sternotomy, 120 (23.8%), 3) Conventional sternotomy, 116 (23.1%). MT patients, compared to MS and CS, had significantly shorter bypass times, lower incidence of prolonged ventilator support and shorter ICU and postoperative stays, resulting in an overall shorter hospitalization. Incidence of other postoperative complications were lower in the MT group compared to mini-sternotomy and conventional sternotomy, without significance. Minimally invasive techniques trended towards better survival [MT 1.5%, MS 1.67%, and CS 5.17% (p=0.13)]. The Authors conclude that the MT mini-thoracotomy approach showed decreased operative times, decreased lengths of stay, decreased incidence of prolonged ventilator time, and a trend towards lower mortality when compared to MS and CS.

@ The Authors do not specify how the patients were chosen for one approach instead than another. However, patients’ selection is biased toward lower risk patients in the MT group. Lower complications rate can be expected.

@ It is not clear why cross clamping time is lower in MT group. In CS patients vision is good and there is no reason, if patients are the same, that any difference exists in any technical aspect. I am wondering if CS patients are operated on by younger surgeons and trainees, and the MT patients by more expert surgeons.

@ I think that this paper is missing a correct patients' selection. At least, propensity matching has to be performed, including surgeons' experience. The final message is not correct.

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