

ORAL PRESENTATION

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Less invasive surgery of the proximal aorta

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From 23rd World Congress of the World Society of Cardio-Thoracic Surgeons
Split, Croatia. 12-15 September 2013

Background

Partial upper sternotomy (PUS) is established less invasive approach for single and double valve surgery. Reports of aortic surgery performed through PUS are rare.

Methods

The records of 52 patients undergoing primary elective surgery on the proximal aorta through PUS between 2005 and 2011 were reviewed. Patients mean age was 57 years, 35% were in NYHA Class III or IV, 59% had recent cardiac decompensation, and 17% had pulmonary hypertension. The PUS was taken down to the 4th left intercostal space in 44 patients (85%).

Results

No conversion to full sternotomy was necessary. The aortic cross-clamp, cardiopulmonary bypass and operative times averaged 136 ± 20 min., 186 ± 36 min. and 327 ± 83 min., respectively. In eight patients, the right axillary artery was cannulated for establishing cardiopulmonary bypass; the others were cannulated centrally. All patients except one received a procedure on the ascending aorta, either replacement in 30 (58%) or reduction aortoplasty in 21 (40%). Aortic root replacement was additionally performed in 31 patients (60%), including David in 20 (38%) and Ross procedure in 6 (11.5%). The aortic arch was replaced either partially in 5 (10%) or totally in 3 (6%) patients, in moderate hypothermia employing antegrade cerebral perfusion. Additional procedures, included mitral valve repair in 15 (29%) patients and coronary grafting. Ventilation time, intensive care unit and hospital stay averaged 17 ± 12 hours, 2 ± 1 , and 11 ± 9 days. Chest drainage was 470 ± 380 ml/24 hours. Permanent neurologic deficit did not occur. Wound dehiscence was observed in a single patient (2%). Thirty-day and hospital mortality were not observed.

Conclusions

Less invasive surgery on the aortic root, ascending aorta and aortic arch can be performed safely and reproducibly. Potential benefits include a minimized risk of wound dehiscence and reduced postoperative bleeding. The PUS does not compromise the quality of the operation.

Published: 11 September 2013

doi:10.1186/1749-8090-8-S1-O36

Cite this article as: Risteski et al.: Less invasive surgery of the proximal aorta. *Journal of Cardiothoracic Surgery* 2013 **8**(Suppl 1):O36.

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