

Results: 48 patients underwent the procedure over the period examined. 19 patients had an aggressive resection while 29 patients had a conservative resection. There were no differences in gender between the “aggressive” and “conservative” groups with a preponderance of females (58% vs 76%, $p = 0.22$). The mean age was lower in the “aggressive” group (16.46 years vs 29.12 years, $p = 0.007$). There were no significant differences in indications for sympathectomy between the groups which included Long QT syndrome (subtypes 1 to 3), CPVT and other. Procedural times were longer in the aggressive group as the mean operating time was longer using the 3-port technique in comparison to the single-port technique (43.95 mins vs 20.38 mins, $p < 0.0001$). Only 1 patient required insertion of chest drain post-operatively for a pneumothorax and there was no difference in hospital stay (1.32 days vs 1.36 days, $p = 0.81$). There was no significant difference in the shortening of the QT interval between the 2 groups (66.7% vs 56%, $p = 0.55$). There were no differences between the 2 groups for later requirement for implantable defibrillators, further arrhythmias or death (31.25% vs 26.92%, $p = 1.0$). Compensatory hyperhidrosis was not significantly different between the groups (6.25% vs 15.38%, $p = 0.63$). Partial Horner’s syndrome occurred only in the “aggressive” group in 5 patients (31.25% vs 0%, $p = 0.005$); in only 2 patients did a mild left ptosis persist for longer than 6 months.

Discussion: Aggressive approaches that sacrifice the lower third to half of the stellate ganglion run the risk of resulting in a partial Horner’s syndrome, without conferring additional electrocardiographic or clinical benefit. The majority of the stellate ganglion therefore should be spared, and only the very bottom of it should be sacrificed. A single port access technique is an efficient access method for such procedures.

Reference

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<http://dx.doi.org/10.1016/j.hlc.2014.12.063>

Towards the perfect anastomosis - quantitative assessment of simulated anastomoses



D.I Verrelli¹, J. Wood^{1*}, K. Karunanthi¹, C. Savage¹, Y. Qian¹, M.K. Wilson^{1,2}

¹Australian School of Advanced Medicine, Macquarie University, Sydney, Australia

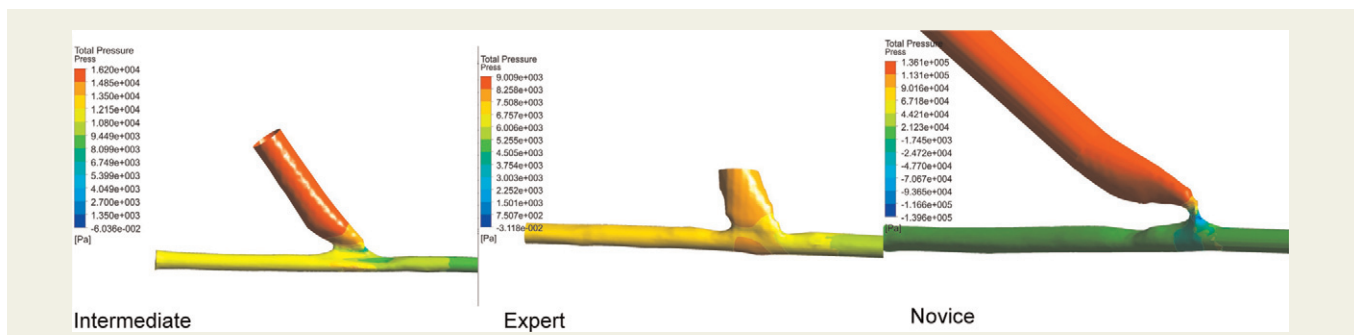
²Royal Prince Alfred Hospital. Sydney, Australia

*Corresponding author.

Introduction: Simulation training in coronary anastomosis has been demonstrated to improve the ability to carry out an anastomosis on simulated vessels. Performance has been measured using well-validated rating scores to provide a structured objective assessment of simulated surgical skills on video review (OSATS). We perceive barriers to the incorporation of such simulations into cardiothoracic surgical training to be the reliability, consistency and considerable surgeon review hours required to generate these reviews. We have sought to develop quantitative assessment of several aspects of anastomotic skills to offset this.

Methods: Five cardiothoracic surgical trainees and three cardiac surgeons were asked to perform two simulated coronary anastomoses each using silicon vessels of 3 mm internal diameter. The forces exerted on the recipient vessel and the operator’s heart rate were monitored continuously and later synchronised with a 3-camera video recording of the procedure to produce a composite assessment tool. Data extracted from CT scanning of the completed anastomoses was used to observe the vessel’s internal geometry. 3D computational fluid dynamic (CFD) technology was applied to estimate the haemodynamic outcomes of the anastomoses.

Results: Using the composite assessment tool it was possible to correlate force data accurately with events and supplement an OSATS with more detailed advice regarding technique. Using velocity streamlines pressure and wall shear contours generated from CFD simulations, it was possible to differentiate between novice and expert operators and provide trainees with quantitative data as part of a formative feedback. With our small numbers at each stage of training it was not possible to demonstrate significant differences.



Discussion: Our initial findings suggest that it is possible to measure quantitative data that is useful for the assessment of performance in simulated coronary anastomosis. We believe that continued refinement of our model would allow us to complement the feedback provided by tools such as the OSATS and provide a more detailed evaluation of surgical

skill. This will be invaluable for both formative feedback and ultimately summative assessment both in the simulated and clinical environments.

<http://dx.doi.org/10.1016/j.hlc.2014.12.064>

Replacement of the aortic root with a composite valve-graft conduit: risk factor analysis in 246 consecutive patients



Kei Woldendorp^{1,2,3,4,5,6*}, Eric Starra^{1,2,3,4,5,6},
Michael Seco^{1,2,3,4,5,6}, P. Nicholas Hendel^{1,2,3,4,5,6},
Richmond W. Jeremy^{1,2,3,4,5,6}, Michael K. Wilson^{1,2,3,4,5,6},
Michael P. Vallely^{1,2,3,4,5,6}, Paul G. Bannon^{1,2,3,4,5,6}

¹University of New South Wales Medical School, Sydney, Australia

²Sydney Medical School, The University of Sydney, Sydney, Australia

³The Baird Institute of Applied Heart and Lung Surgical Research, Sydney, Australia

⁴Cardiothoracic Surgical Unit, Royal Prince Alfred Hospital, Sydney, Australia

⁵Cardiology Department, Royal Prince Alfred Hospital, Sydney, Australia

⁶Australian School of Advanced Medicine, Macquarie University, Sydney, Australia

*Corresponding author.

Introduction: Composite valve-graft (CVG) replacement of the aortic root is a well-studied and recognised treatment for various aortic root conditions, including valvular disease with associated aortopathy. There have been few previous studies of the procedure in large numbers in an Australian setting.

Method: From January 2006 to June 2013, 246 successive patients underwent CVG root replacements at our institution. Mean age was 56.8 years, 85.4% were male, and 87 had evidence of bicuspid aortic valve. Indications for operation included ascending aortic aneurysm in 222 patients, annuloaortic ectasia in 67 patients, and aortic dissection in 38 patients.

Results: The overall unit 30-day mortality was 5.7%, including: elective 30-day mortality of 2.2%, and emergent 30-day mortality of 17.2%. Statistically significant multivariate predictors of 30-day mortality were: acute aortic dissection (OR = 20.07), peripheral vascular disease (OR = 11.17), new ventricular tachycardia (OR = 30.17), re-operation for bleeding (OR = 14.42), concomitant mitral stenosis (OR = 68.30), and cerebrovascular accident (OR = 144.85).

Discussion: Low postoperative mortality in our series matches closely with results from similar sized international studies, demonstrating that this procedure can be performed with low risk in centres with sufficient experience in the operative procedure.

<http://dx.doi.org/10.1016/j.hlc.2014.12.065>