

Results: Final pathologic examination revealed benign fibroma. The patient made an uneventful recovery and remains free of recurrence at three-year follow-up, with normal RV function.

Conclusions: Benign cardiac tumours causing haemodynamic compromise require resection which can be accomplished safely, despite encroachment of major coronary arteries, which are displaced but not invaded by tumour.

F21

FOLEY CATHETER INSTEAD OF SIDE CLAMP

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Objectives: In order to prevent bleeding during the performance of aortic anastomosis in CABG (with or without cardiopulmonary bypass), aortic side-clamping has traditionally been used. To avoid the drawbacks of aortic side-clamping, different devices have been introduced. These devices, which have been used to achieve a clear view of the anastomosis site, are not only non-reusable, expensive and difficult to use, but have also been reported to have complications such as air embolism. We have introduced another simple method using a Foley catheter. This method can be used effectively in off-pump CABG during proximal anastomosis, where aortic side clamping is implicated in neurologic sequelae. It can also be used for redo CABG or in patients where the aorta is calcified.

Methods: We use a Foley catheter in the proximal anastomotic site and we suture the graft in two layers. At the completion, the Foley balloon is drained and the catheter withdrawn from the anastomotic site.

Results: We used this method in 25 patients. In only one case was the Foley balloon ruptured, but there was no complication because the balloon is always filled with saline. There were no neurological events in these patients. All patients had uncomplicated hospital stays.

Conclusions: Applications of this method are: unusual aorta (redo, calcified), anastomosis in unusual sites. Advantages are: there is no need for side-biting clamp (with associated complications), perfusion occurs immediately after each anastomosis, shorter bulldog occlusion time, exact length and direction of anastomosis, usable in OPCAB, applicable in other anastomoses (e.g. shunt).

F22

A NEW METHOD OF STERNAL CLOSURE IN CARDIAC SURGERY WITH THERMOREACTIVE NITINOL CLIPS: THE TECHNIQUE AND A RETROSPECTIVE REVIEW

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Objectives: The standard method for closure of the sternum post cardiac procedures is by using steel wires. However, healing complications such as dehiscence, osteomyelitis or mediastinitis may occur. We describe a new method of sternal closure with thermoreactive nitinol clips (Flexigrips).

Methods: Nitinol is characterised by shape memory and superelasticity depending on the temperature. The clips become malleable at low temperatures (<10 °C) and return to their original shape when the temperature increases. To apply the clips, two steel wires are applied in the manubrium and one near the xiphoid, and tightened. The clips are mounted onto an applicator that splays them open and then applied around the sternum. In body temperature, the clips return to their original shape and strength. We retrospectively reviewed 1119 patients undergoing major cardiac surgery over a 1 year period in our centre. Flexigrips were used in 235 patients (Group 1) and steel wires in the remaining 884 patients (Group 2). The mean values for risk factors between Group 1 and Group 2 were, respectively, age 70.1±10.9 and 67.1±12.9 years ($P<0.01$), EuroSCORE 6.5±3.4 and 6.0±3.5 ($P=0.07$), body mass index (BMI) 29.5±6.1 and 27.5±8.1 ($P<0.01$), diabetes 19.2% and 16.8% ($P<0.01$) and pulmonary comorbidity 17% and 11% ($P<0.01$).

Results: The overall incidence of sternal wound complications was 2.2% (25/1119). The incidence was higher in Group 2 (2.3%) compared to Group 1 (1.7%) ($P=0.8$). All patients in both groups needed further procedures (average 1.96/patient).

Conclusions: We believe that this is a safe, easy, and potentially more efficient technique for chest closure.

Aortic Valve Replacement with Biological Substitutes Tuesday 20 October 2009 08:30-10:00

108

THE ISTHMUS STUDY: A 20 YEAR, MULTICENTRE EVALUATION OF THE MITROFLOW SYNERGY PERICARDIAL BIOPROSTHESIS

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Objectives: A multicentre experience with the mitroflow synergy (MS) pericardial bioprosthesis has been evaluated longitudinally over a 20 year period.

Methods: From 1988 to 2008, 1603 patients (mean age, 75±7 years (range, 16-90 years, 60% female) from 12 centres had a MS in the aortic ($n=1592$) or mitral position ($n=11$). Concomitant coronary artery bypass was performed in 42% ($n=673$) of patients, emergency surgery in 9.6% ($n=154$), replacement of degenerated prosthesis in 2.3% ($n=36$), and other cardiac procedures in 8.2% ($n=134$), respectively. Follow-up (7.447 patient-years) was 99.2% complete. Mean follow-up was 66±1 months. The study was carried out in accordance with AATS/STS/EACTS Guidelines for Reporting Valve Morbidity and Mortality.

Results: The early (30 day) mortality was 6.5% ($n=104$). Actuarial survival rates at 10, 15 and 18 years were 53%, 34% and 27%, respectively (2.2 patient-years). Reoperation was required in 96 patients (5.9%), of whom 59 were for structural valve degeneration. Actuarial freedom from prosthetic valve degeneration at 18 years was 65.5% (78% in patients >70 years) with a linearised rate of 1.4 patient-years (0.8 patient-years in patients >70 years). At 18 years, freedom from embolism was 82% (0.9 patient-years), freedom from valve endocarditis was 89% (0.6 patient-years) and freedom from bleeding episodes was 95% (0.2 patient-years), respectively.

Conclusions: This independent multicentre study indicates that the MS pericardial bioprosthesis provides favourable long-term postoperative results with a low rate of valve-related events and need for reintervention, particularly in patients >70 years.

109

THE ROSS OPERATION: LESSONS FROM LONG-TERM FOLLOW-UP

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Objectives: The Ross operation is indicated for aortic valve replacement in children and in selected young adults who want to avoid anticoagulation therapy. However, recent data have suggested relatively high rates of pulmonary autograft failure raising concern regarding its clinical utility. We analyse long-term outcomes of our Ross series.

Methods: Between 1991 and 2006, 260 consecutive patients underwent Ross operation. Mean age was 35±15 years (range: 1 day-64 years). The technique for autograft implantation was root replacement in 70% ($n=183$), inclusion technique in 28% ($n=73$) and subcoronary in 2% ($n=4$). Pulmonary homografts (94%) or xenografts (6%) were used to reconstruct the right ventricular outflow tract (RVOT). Mean clinical follow-up (97% complete) was 97±46 months (13-196 months) and echocardiographic follow-up was available in 234 survivors (94%).

Results: Hospital mortality was 1.9% ($n=5$). At 12 years, overall survival was 93±4%. Freedom from autograft reoperation was 82±7. Freedom from RVOT reintervention was 95±4%. Autograft dilatation was the main cause of reoperation ($n=30$). Predictors of autograft dilatation (>45 mm) were the absence of inflow buttressing, unrepaired dilated ascending aorta, preoperative aortic valve insufficiency, root technique. Freedom from thromboembolic event and freedom from any valve related event were 98±1% and 73±8%, respectively. At follow-up, 4% of the patients had anticoagulation therapy because of supraventricular arrhythmia.

Conclusions: This study confirms the excellent survival after Ross operation with a very low rate of thromboembolic and bleeding events. The root technique is associated with increased risk of autograft dilatation, and should be avoided especially in adult patients with preoperative aortic valve insufficiency.