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MINI-OPCABG an alternative to hybrid coronary revascularization

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From 1990 to 2016 38 patients received Hybrid coronary treatment during the same Hospitalization in our Institutions with different surgical off pump approaches, Sternotomy, MIDCAB and MINI OPCABG. 20 patients were stenting after a MINI OPCABG operation. The average age was 69 ± 4.8 , 4 patients had Left Main and a Right coronary lesion 10 patients had three vessels disease and 6 two vessel disease; the average SYNTAX score was 35.2 (range 33-43). Eight patients received a circumflex and right coronary stenting six patients a right and six a circumflex coronary stenting. We described the technique and methodology for this approach.

Technique: The patients are prepared as for standard coronary bypass operation through medium sternotomy. A skin incision is made from the xiphoid up to the level between the third and fourth intercostal space. The sternum is open and the left table is lifted to dissect the left mammary up to the third intercostal space, in general around 7 to 10 cm. isolated without the veins. It is important that the angle of the superior part where the mammary is attached to the sternum has to be below 20° to avoid any potential kinking. After the pericardium is cleaned to identify the area of the pulmonary artery, the pericardium is open to the apex and towards the right around 5 to 6 cm., initially in that moment in most of the cases the area of the LAD is seen and the potential area of the anastomosis is defined, mechanical stabilizer is always in position in this place with the opening part towards the head of the patient to avoid any problem of damaging the graft when you need to take it. The anastomosis is performed in a running way with 7 or 8 polypropylene depending on the size of the artery. We didn't use shunt, normally except if the artery has more than 2,5 mm in size.

Results: No thirty day mortality was reported in our series. All patients completed hybrid procedure and there wasn't any conversion to full sternotomy. Mean intubation time was 1.5 ± 3.2 hrs and length of hospital stay was 3.2 ± 1.2 days, two patients received packed RBC (red bloodcells) transfusion, hospital MACCE was 0%. During PCI procedure angiographic evaluation LIMA grafting was routinely performed and LIMA patency rate was 100% at one year follow up. Patients freedom from MACCE was 100%.

Conclusion: The introduction of DES with lower rates of restenosis and better clinical outcomes may make hybrid coronary revascularization a more sustainable and feasible option than previously reported. Nevertheless, this hybrid approach has not been widely adopted because practical and logistical concerns have been expressed. These concerns implicate the need for close cooperation between surgeon and interventional cardiologist, logistical issues regarding sequencing and timing of the procedures and the use of aggressive antiplatelet therapy for DES can be minimised. We believe that with MINI-OPCABG can solve these issues because this surgical technique reduces the surgical trauma without opening pleural space with less discomfort for the patient, moreover the partial dissection of LIMA reduces the risk of post operative bleeding.

The HCR procedure was associated with short hospital stays (including ICU stay and intubation time), low MACCE and 30-day mortality rate, low PRBC transfusion requirements. This study has limitations because it was based on the retrospective design, moreover patients for one stop hybrid coronary revascularization were also carefully selected and our good results should be interpreted with caution. However there is a small sample size and longterm follow-up and randomized multi center trial comparing one stop hybrid revascularization with MINI-OPCABG with conventional CABG will be needed.

These favourable preliminary findings warrant further investigation.

Biography

Vincenzo Cianci is senior registrar in cardiothoracic surgery at the University of Swansea in UK, previously was staff resident of cardiac surgery at the University of Sacred Heart in Campobasso (Italy). He obtained his medical degree at University of Naples (Italy), and he completed his post graduate training at University of Milan. Dr Cianci began his surgical career as fellow at Humanitas Gavazzeni clinic in Bergamo, after he was staff resident at University of Pavia for five years. In 2011 he was senior registrar in cardiothoracic surgery at Queen Elizabeth Hospital at University of Birmingham (UK). In 2012 He was staff resident in cardiocentro Ticino Lugano (Switzerland). His past clinical practice has encompassed the full spectrum of adult cardiovascular and thoracic surgery including experience in heart and lung transplantation, left ventricular assist device. His current practice focuses on minimally invasive coronary By pass graft, thoracoscopic epicardial atrial fibrillation. He collaborates actively with Prof. Benetti for the development of Hybrid coronary revascularization with a novel surgical technique.

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