Royal Brompton and Harefield hospitals NHS

A Retrospective Analysis Of 23 Years Single Institution Data Of Hybrid Coronary Artery Revascularization

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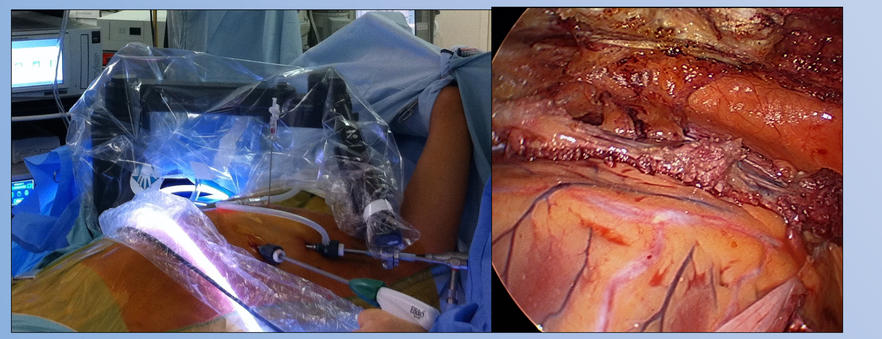
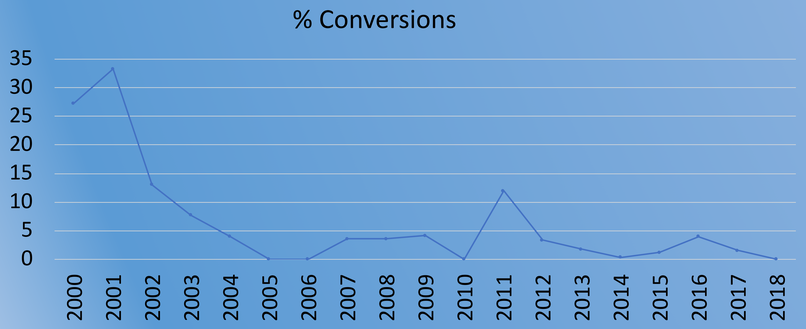
BACKGROUND: Endoscopic atraumatic coronary artery bypass surgery (EndoACAB) is a now established procedure performed in specialist centers. In our institution, this technique is often combined with percutaneous coronary intervention as part of a "hybrid" coronary revascularization approach to achieve complete revascularization for multivessel coronary artery disease. Here, we report our institution results of hybrid coronary revascularization.

METHODS: Retrospective review of single center cardiac surgery database over a period of 22 years and 10 months. Patient characteristics, post-operative complications and in hospital mortality are reported.



Robotic left internal mammary harvesting

Post EndoACAB angiogramdemonstrates LIMA to LAD graft patency



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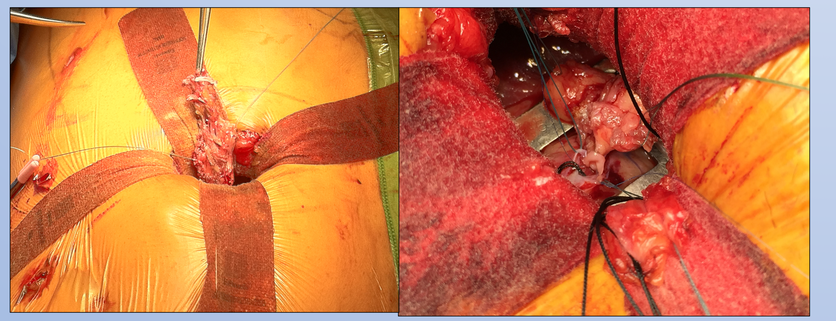
RESULTS: Between January 2000 to October 2023, a total of 1076 patients underwent Endoacab in our institution, in 413 of the cases (38.4%) in combination with PCI to non-LAD lesions to achieve complete revascularization. Within the hybrid group, 16.9% of the patients (n=70) underwent a “reverse hybrid” procedure, with PCI performed acutely to the culprit lesion followed by EndoACAB with a LIMA to LAD at a later date. In 259 patients (62.7%) 1 vessel was treated with PCI, in 143 patients 2 vessels were treated (34.6%) and in 11 patients more vessels were treated (2.7%). In our series, there were 3.35% conversions to sternotomy(n=36), 3 procedure was abandoned and PCI was performed instead. Hospital mortality was 0.74% (n=8/1076) in a group of high risk patients. The most common complication was atrial fibrillation experienced by 10.03% of the patients (n=108/1076). 2.14% presented acute kidney injury (n=23/1076), 1.4% of the patients had significant wound infections (n= 15), all of this in female with high BMI and diabetes. In 0.84% (n=9) of the cases Lima to LAD anastomosis required required PCI for occlusion or irregularities. We had one case of emergency sternotomy during PCI as second part of complete revascularization.



Preparation and set up of LIMA (A, B) and anastomosis of LIMA to LAD

CONCLUSIONS: We demonstrated that hybrid coronary revascularization can effectively treat multivessels coronary disease with results from a large series. Mortality cases occurred in high risk cases subgroup.