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Retrograde Coronary Chronic Total Occlusion Revascularization: Procedural and In-Hospital Outcomes

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Introduction: Chronic total occlusion of coronary arteries (CTO) are observed in 15-30% of all the coronary angiographies and 30-50% of patients with significant coronary artery disease. Percutaneous coronary intervention (PCI) of CTO accounts for 10% up to 20% of all angioplasties. Technical difficulties of the procedure, high costs, and increased exposure to radiation are the mostly encountered problems while treating these kind of lesions. Successful PCI of CTO has been associated with improved left ventricular systolic function, reduced anginal symptoms, increased exercise capacity, decreased need for bypass surgery, and most importantly, an increase in survival. We investigated the success and reliability of retrograde approach for CTO revascularization.

Materials-Methods: Forty-eight patients that underwent angiographical study via retrograd approach between 2007 and 2013 evaluated retrospectively. Septal collaterals used in 73% and epicardial collaterals used in 27% of the patients. Coronary lesions with CTO were passed with different techniques. Drug-eluting stent in the appropriate size was implanted after balloon angioplasty. The patients mean age was 58 ± 9 years, 39 (81%) were male, 19 (39%) had diabetes mellitus, 41 (85%) had hypertension, 38 (79%) had hyperlipidemia, 22 (45%) were smoker, 18 (37%) had previous myocardial infarction. The left anterior descending artery was culprit in 11 patients (23%), left circumflex artery in 9 patients (19%), and right coronary artery in 28 patients (58%). Mean procedural time was 84 ± 36 minutes, the mean scope time was 38 ± 22 minutes, and the mean amount of contrast used was 488 ± 156 ml. Twenty-three patients underwent control coronary angiography at sixth month. Five (21%) patients had restenosis. None of the patients experienced periprocedural death, myocardial infarction, stroke, or emergent coronary artery bypass graft operation. Coronary arterial dissection occurred in three patients (6.2%). Haematoma or pseudo aneurysm occurred in three patients (6.2%). Contrast induced nephropathy developed in eight patients (16%), but none of the patients underwent haemodialysis. None of the patients reported acute/subacute stent thrombosis. Result: Procedural success was 87.5% (42 of 48 patients). Retrograd approach for CTO revascularization could be performed effectively and reliably by experienced operators in centers with high patient volume.

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Postoperative Clinical and Angiographic Results of Robotic Assisted Coronary Artery Bypass Surgery

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Objective: Nowadays, applications of the operations on beating heart has gained importance due to the advances in technical level and recently it is commonly used with the developed minimally invasive techniques. Robotic-assisted coronary artery bypass grafting (CABG) is a minimal invasive surgical technique which is performed successfully since 2004 in our clinic. The purpose of this study was to evaluate mid-term clinical results and graft patency by cardiac catheterization and multislice tomographic angiography.

Methods: Between April 2004 and November 2012, 260 patients underwent robotic assisted coronary artery bypass grafting on beating heart. Sixty patients underwent invasive coronary angiography and multislice computed tomographic angiography for assessment of graft patency.

Results: Follow-up time of sixty patients was a mean period of 48.29±18.87 months (range,12-83 months), average operative time and left internal mammary artery harvest time was 163.87±22.5 and 40,65±5.9 (30-55) minutes. Length of stay at the intensive care unit was 14.4±2.61 hours. Percentage of the patients who received blood products perioperatively was found to be 16%. Length of hospital stay was 5,54±1.71 (range,4-10 days). There were no operative mortality, stroke or early reintervention. Postoperative graft patency rate was 94%. Freedom from target vessel reintervention was 98%.

Conclusions: Robotic-assisted CABG was accomplished with low morbidity, mortality and reintervention rates. It is a safe procedure in selected patients and produces excellent midterm graft patency that is comparable with published data. Our results which showed similarities with contemporary literature lead us to the idea of future importance and common usage of minimally invasive interventions.

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