

Minimally Invasive Total Arterial Coronary Artery Bypass Grafting In Left Main Stem Disease

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BACKGROUND : The aim was to show that Minimally Invasive total arterial revascularization for left main stem disease via a left anterior Mini thoracotomy using bilateral internal thoracic arteries, is feasible, reproducible and safe.

METHOD : From April 2019 to September 2023, 21 patients with left main stem stenosis, left main equivalent disease and unprotected left main with triple vessel disease underwent off pump minimally invasive multivessel coronary artery bypass grafting using either insitu pedicled Bilateral Internal Thoracic arteries or Left and Right Internal Thoracic artery Y composite conduits Via Left Anterior Mini Thoracotomy.

RESULTS : 21 patients with left main stem stenosis, underwent total arterial revascularization using bilateral internal thoracic arteries. Left main stem stenosis was present in 15 patients, Unprotected left main stem stenosis with triple vessel disease in 4 and left main equivalence in 2 patients. In this cohort, 15 patients with only left main stem stenosis had 2 grafts each , 4 patients with left main and triple vessel disease had 3 grafts and both patients with left main equivalent disease had 2 grafts respectively. The average number of grafts were 2.1. 1 patient was converted to open sternotomy as an emergency because of hemodynamic instability and myocardial revascularization was done on cardiopulmonary bypass (4.6%). The average hospital stay was 3.6 days. Ejection fraction was 46 +/- 5 %. There was one mortality to surmise the in hospital and 30-day mortality (4.6%) and this was due to acute renal failure leading to multi organ failure. The average ICU and hospital stay was 36 +/- 8 hours and 3.5 days.

CONCLUSIONS: Multi vessel total arterial revascularization using left and right internal thoracic arteries, were performed via a left anterior Mini thoracotomy on patients with left main stem disease and showed that it was safe, reproducible and will help extend the armamentarium of the surgeon in minimally invasive Coronary artery bypass grafting to patients with left main stem disease and help enhance the potential for shorter hospital stay ,increased survival, decreased morbidity and earlier return to full activity. Usage of Pre induction IABP reduces hemodynamicinstability, emergent conversions, arrhythmias, inotrope usage and intra operative myocardial infarctions