

Advancing Coronary Surgery: Total Coronary Revascularization Via Anterior Thoracotomy In A Single Surgeon Heart Centre, Sabah Malaysia.

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Introduction: Sternum-sparing approach in cardiac surgery has emerged as an alternative to conventional median sternotomy in selected patients. Total coronary revascularization via anterior thoracotomy (TCRAT) offers potential benefits of reduced surgical trauma, faster recovery, and favourable early post operative outcomes.

Methods: A retrospective analysis was performed on a cohort of 28 patients (26 men; 57.5 ± 7.96 years; range 41-73 years) who underwent TCRAT at Queen Elizabeth Hospital II (QEHI), Sabah Malaysia between February 2024 to August 2025. All patients had multivessel coronary artery disease (75% 3-vessel-disease; 25% 2-vessel disease; and 71.43% left main stem disease). We included patients at old age (older than 60 years, 32.14%), with hypertension (100%), dyslipidaemia (100%) and diabetes (32.14%). The mean left ventricular function was 52.96 ± 3.52 and the mean European System for Cardiac Operative Risk Evaluation II score was 0.94 ± 0.005 . Our primary endpoints includes duration of intensive care unit (ICU), duration of hospital stay, perioperative morbidity and mortality.

Results: Left internal mammary artery (78.57%) and saphenous vein (100% used) grafts were used, with 96.42% of patients received at least 2 conduits (35.61% 2 grafts; and 60.71% 3 grafts) to revascularize the territories of left anterior descending (100%), left circumflex (71.43%), and right coronary (50%) artery. The total operation duration was 544.64 ± 68.06 minutes, cardiopulmonary bypass time was 259.57 ± 47.34 minutes, and aortic cross-clamp time was 105.89 ± 22.32 minutes. We had no perioperative stroke, no postoperative myocardial infarction and no postoperative liver failure. There were 3 (10.71 %) conversion to sternotomy, 1 (3.57%) mortality, 1 (3.57%) re-exploration for postoperative mediastinal bleeding, 4 (14.29%) postoperative atrial fibrillation, 2 (7.14%) transient acute renal failure and 1 (3.57%) leg wound infection. The mean ICU stay was 4.38 ± 2.04 days (range 2.63-11.77 days) and average hospital stay 8.75 ± 3.87 days (range 5-20 days).

Conclusion: TCRAT is a feasible and safe alternative to conventional sternotomy for coronary revascularization in carefully selected patients, demonstrating favourable perioperative and postoperative outcomes. However, further studies with larger cohorts and long term data are warranted to validate these findings.