

Long Term Outcome of Revascularization with Composite T Grafts: Is Bilateral Mammary Grafting Better Than Single Mammary and Radial Artery?

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Objective:

Bilateral Internal Mammary (IMA) grafting is associated with improved survival. However, many surgeons are reluctant to use this revascularization technique due to the potentially increased risk of sternal infection. The composite T graft with radial artery attached end-to-side to the left IMA provides complete arterial revascularization without the associated increased risk of sternal infection. The purpose of this study is to compare early and long-term outcome of these two revascularization strategies.

Methods:

Between 1996 and 2001, 1145 consecutive patients (1021 bilateral IMA and 124 single IMA and radial artery) underwent arterial revascularization using the composite T graft technique.

Results:

Occurrence of female sex (36.5% versus 23.8%, radial group versus bilateral IMA, respectively), patients older than 75 (28% versus 17.5%), diabetes (46% versus 34.3%) and COPD (18% versus 5.8%) was higher in the radial group. The radial group also had a higher Euro score (6.64 versus 6.00, $p=0.046$). On the other hand, CHF (29% versus 15.6%) and recent MI (34.4% versus 16.4%) were more prevalent in the bilateral IMA group. Propensity score matching was used to account for these differences. The 113 pairs thus created had similar operative mortality (0.9% versus 3.5% for the radial and bilateral IMA, respectively). There was a trend for higher occurrence of sternal infection in the bilateral IMA group (0% versus 3.5%, $p=0.062$). Mean follow-up was 12.5 years. Kaplan Meier 10 year survival (65% versus 73%, $p=0.446$ Log-Rank test), as well as Cox adjusted survival ($p=0.429$) of the two groups were similar. Age (HR 0.927, 95% Ci 0.900-0.956), Diabetes (HR 2.160, 95% Ci 1.425-3.279) and PVD (HR 2.347, 95% Ci 1.508-3.650) were independent predictors of decreased survival.

Conclusions:

This study suggests that long-term outcome of arterial revascularization with composite T graft constructed using left IMA and radial artery is similar to that of bilateral IMA.