

Coronary Revascularization of the Circumflex System: Different Approaches and Long-Term Outcome

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Purpose and hypothesis: Minimally invasive direct coronary artery bypass, without cardiopulmonary bypass, through a left lateral thoracotomy approach (*lateral MIDCAB*), is a safe alternative to coronary artery bypass surgery on-cardiopulmonary bypass (*On-pump CABG*) of the circumflex system via median sternotomy.

Methods: We compared the perioperative outcomes of patients undergoing *lateral MIDCAB* (n=34) versus conventional *On-pump CABG* of the circumflex system (n=16) from June 1996 to July 1999. The two groups were similar with respect to baseline characteristics and risk stratification. Patients who required only one or two grafts for complete revascularization were included.

Results: *Lateral MIDCAB* patients had a lower need than *On-pump CABG* patients for intraoperative (12% *MIDCAB* vs. 43% *On-pump CABG*, $p=0.03$) and postoperative transfusions (29% vs. 69%, $p=0.01$), had fewer neuropsychologic changes (0% vs. 19%, $p=0.03$), and had a lower rate of postoperative atrial fibrillation (12% vs. 44%, $p=0.02$). *Lateral MIDCAB* was also associated with a significantly lower postoperative length of stay (5 ± 2 days vs. 7 ± 3 days, $p=0.02$). Actuarial survival at a mean period of follow-up 19 ± 11 months was 97% for the *lateral MIDCAB* versus 88% for the *On-pump CABG* group ($p=0.1$). Event-free survival was 88% for *lateral MIDCAB* versus 81% for *On-pump CABG* ($p=0.6$).

Conclusions: *Lateral MIDCAB* may safely be performed in patients with isolated coronary artery disease of the circumflex system with improved early morbidity and an abbreviated hospital stay compared with conventional median sternotomy *On-pump CABG*.