

Bilateral pectoralis advancement flaps and transverse plate fixation system for sternal reconstruction in the complicated sternal wound

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Objective: To report our experience with bilateral pectoralis advancement flaps and a transverse plate fixation system for sternal reconstruction in the complicated sternal wound.

Methods: Between 2008 and 2012, 24 patients with a complicated sternal wound underwent a sternal reconstruction with bilateral pectoralis advancement flaps and a transverse plate fixation system. The median age of the cohort (4 female and 20 males), was 65.8 years (range: 33-83 years). In 19 patients, a bilateral internal thoracic artery had been used. Considerable preoperative risk factors were present: morbid obesity with Body Mass Index (BMI) ≥ 35 (range: 35-49.7:13 patients); chronic obstructive pulmonary disease (COPD) without steroid therapy preoperatively (7 patients); Diabetes mellitus (7 patients). Concomitant laparoscopically harvested omentoplasty was performed in case of overt mediastinitis (4 patients). In 14 cases, the mediastinal wound was prepared with negative pressure wound therapy following surgical debridement. An internal fixation of the sternum by titanium locking plates with sternal and rib-to-rib fixation and bilateral pectoralis advancement flaps were performed in all patients. The postoperative course was followed by clinical follow-up.

Results: Early post-operative sternal stability was seen in all 24 patients. The 30-day perioperative mortality rate was zero, with an overall survival of 100% until today. Postoperatively 2 (8.3%) small superficial and 1 (4.1%) deep surgical site infection (SSI) were appreciated. Follow-up ranged from 6.5 to 54.5 months (median: 26.5 months).

Conclusion: Combination of bilateral pectoralis advancement flaps and a transverse plate fixation system for sternal reconstruction can contribute to a successful outcome following a complicated sternal wound.

Biography

J.M. De Raet received an international medical and surgical training at the K.U.Leuven (Belgium) in cardiac surgery, at the Vrije Universiteit Brussel (Belgium) in general surgery, at the University of Maastricht (Netherlands) in microsurgery, at San Raffaele University Hospital of Milan (Italy) and St. Antonius Hospital Nieuwegein (Netherlands). He is a member of national and international scientific organizations, reviewer of several cardiac surgery journals, and faculty member of the international scientific advisory board regarding postoperative bone/wound complications. Currently, he is also a Europe-wide instructor for anastomotic skills simulation training with emphasis on off-pump CABG. At present, he is an evaluating member in a project on distant technical learning regarding anastomotic techniques. His main interests are off-pump coronary artery bypass surgery (OPCAB) with complete arterial revascularization and no touch-aorta, sternal wound/bone complication management, minimally invasive heart surgery and surgical education (training & simulation).

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