

The laparoscopically harvested omental flap and transverse plate fixation for sternal reconstruction in complicated sternal wound infection after cardiac surgery

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Background: Complicated sternal wound infection after cardiac surgery has an incidence of 0.4-6.9% and mortality of 7-80%. The ideal reconstructive procedure is still a matter of debate.

Aim: To report our experience with the laparoscopically harvested omental flap and transverse plate fixation for sternal reconstruction after complicated sternal wound infection.

Methods: Between 2010 and 2011, 6 patients with type IV deep sternal wound infection underwent a sternal reconstruction with a laparoscopically harvested omental flap and transverse plate fixation. The median age of the cohort (1 female and 5 males), was 72.5 years (range: 49-78 years). In 5 patients, a bilateral internal thoracic artery had been used. Considerable preoperative risk factors were present: Obesity with Body Mass Index (BMI) ≥ 33 (range: 33-35: 3 patients); chronic obstructive pulmonary disease (COPD) without steroid therapy preoperatively (4 patients); Diabetes mellitus (type 1: 2 patients; type 2: 1 patient). Abdominal surgery had previously been performed in 4 patients. In 5 cases, the mediastinal wound was prepared with negative pressure wound therapy following surgical debridement. An internal fixation of the sternum was made by titanium locking plates with sternal and rib-to-rib fixation. The postoperative course of these patients was followed by clinical follow-up.

Results: Early postoperative sternal stability was seen in all 6 patients. The 30-day perioperative mortality rate was zero, with an overall survival of 100% until today. Postoperatively no superficial or deep surgical site infections (SSI) were appreciated. Follow-up ranged from 24 to 41 months (median: 28 months).

Conclusion: Combination of a laparoscopically harvested omental flap and transverse plate fixation can contribute to a successful outcome following complicated sternal wound Infection and deserves serious consideration, regardless of the co-morbidity or previous abdominal surgery.

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 organisations, 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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