

Omentum flap as a salvage procedure in deep sternal wound infection

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Dear editor

We read with great interest the report by Dr Spindler and coworkers about the utilization of omentoplasty as salvage procedure in deep sternal wound infection.¹ First of all, we congratulate the authors on the excellent results. Mortality rates in this high-risk cohort of patients can be attributed to advanced age, comorbidities, and other complications, but neither the timing nor the type of reconstruction performed.

It is not clear whether omentoplasty was performed after average 60 days due to late infection onset or patient's poor medical condition. Complete mobilization of omentum is sometimes necessary because there is an abundant amount of omentum to cover the whole sternal defect, and the upper one-third of a sternal defect can be additionally covered with pectoral flaps over the underlying omental flap. We agree that the high rate of hernia formation is the most common complication, but in a life-saving setting, it can be tolerated. Laparoscopic flap harvest is of limited use, especially in cardiac patients, due to hemodynamic changes that pneumoperitoneum can trigger.

The initial treatment of mediastinitis should be debridement and application of topical negative pressure wound therapy, preferably with irrigation, for a few days, followed by additional debridement and reconstruction. Such treatment sequence provides better survival.^{2,3} Morisaki et al report that the best survival is achieved with initial treatment with topical negative pressure followed by the reconstruction with flap.⁴

We have routinely utilized latissimus dorsi flap in breast reconstruction, but it would not be the first choice for sternal reconstruction. Technical issues over patient positioning in 1-stage reconstruction led us to reserve its use for patients in whom we either have no other options or other options have been previously exercised. Pectoralis major flap, either as rotatory advancement flap or turnover flap represents our first choice for sternal reconstruction.

We utilize omental flap after partial (lower third) or complete sternal resection to cover the mediastinum and fill the sternal defect, and reduce the possibility of sternal reinfection. Omental flap is useful in reconstruction due to its immunologic properties, it can fill the deepest recesses and large defects and is considered to be superior to muscle flaps, especially for lower third of sternum, or the whole sternum with good stability of thorax.⁵ Therefore, omental flap is very useful, if not, irreplaceable in certain indications of sternal reconstruction, most notably after resection of the lower third of the sternum.

Disclosure

The authors report no conflicts of interest in this communication.

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Authors' reply

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Dear editor

With great interest, we have taken into account the annotations to our article "Omentum flap as a salvage procedure in deep sternal wound infection."

We agree in great parts with the given remarks, as they summarize nicely our main statements expressed in the referred publication.

However, existence of a deep sternal wound infection (DSWI) was diagnosed on average 31 days following the initial cardiac operation, hereby fulfilling the premises for Type 2 classification of Pairolero.¹ Due to the poor medical condition of the patients, they were apriori treated by the cardiac surgeons, and after stabilization of their health condition, presented to our division for reconstruction.

In our population, we indicated the omentum flap as a salvage procedure for therapy refractory DSWI mainly caused by superinfected non-removable artificial material. As stated by Hultman et al, we generally do not prefer the omentum flap as a first-line solution.²

Nowadays, the portfolio of the plastic surgeon contains a wide spectrum of pedicled and free muscle, as well as myocutaneous flaps.³⁻⁶

However, due to our patients' long stay in an intensive care unit, the pectoralis major muscle shows a relatively more intense atrophy than the naturally larger and more voluminous latissimus dorsi muscle. A safe coverage of the lower third of the sternum is hereby also in bi-lateral use only hardly possible. We furthermore see an average skin defect in the sternal region of 6 cm width caused by retracted skin borders. A primary closure would, therefore, put too much tension on the wound. The recommended and well-established pectoralis muscle flap is, therefore, not our first choice for reconstruction following DSWI.

The myocutaneous latissimus dorsi flap allows a voluminous filling of the dead space in the mediastinal region and makes sufficient coverage throughout the entire length of the sternum possible, especially in the lower third. The skin island averages 18.6×5.8 cm in size and promotes a tensionless wound closure.

Disclosure

The authors report no conflicts of interest in this communication.

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