nal defects following adequate debridement). For larger defects, or in more extensive disease, current best evidence obliges surgeons not simply to rely on preference when selecting reconstruction with MF rather than OF. The omentum instead of a complex MF reconstruction warrants serious consideration. Harvesting the omentum laparoscopically, rather than through a laparotomy, may tip the scales. The case series of reconstruction with a laparoscopically harvested OF are currently too small for comparative purposes. Confounding factors that may influence both the choice of flap and the outcome could be elucidated by a future randomised study.

References


eComment: Omental transfer as the strategy for postoperative deep sternal wound infection

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I read with great interest the article by van Wingerden and associates [1]. They concluded that the weight of current evidence is insufficient to prove the superiority of reconstruction with muscle flaps over omental transfer, and that use of the omentum may be associated with lower mortality and fewer complications. Both muscle and omental flaps transfer. However, we also underline the final conclusion of the study that in spite of their properties of neovascularization and absorbing exudates, which the omentum has, have not been sufficiently proven. Thus, we prefer omental flap transfer over muscle flap transfer for the treatment of DSWI.

References


eComment: Omental versus muscle flaps in the reconstruction of deep sternal wound infection

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This is a well evidence-based comparison study regarding the treatment of deep sternal wound infection (DSWI) following median sternotomy by either omental (OF) or muscle flap (MF) reconstruction [1]. A clear outcome of this important study is the confirmation that early and aggressive reconstruction of DSWI is strongly indicated. In addition, both methods of treatment are equally effective as far as the healing process of the infection is concerned. However, we also underline the final conclusion of the study that in spite of the lack of strong evidence, it seems that OFs appear to be associated with lower mortality and fewer complications as compared to MF reconstruction [2]. The feared extension of the infection to the abdomen after OF treatment has never been reported in this excellent review of the literature. Omentum is rich in lymphatics and blood vessels and so can absorb inflammatory exudates rapidly and prevent further extension of local infection. The complications associated with OF reconstruction are minimal, compatible with life, and rarely require additional treatment [2, 3]. In particular, the
incidence of diaphragmatic or abdominal hernia is relatively low (2.7–4.8%) and might be even lower with the use of laparoscopic techniques, something which needs to be proven [4].

In our institution we have totally switched to OFs due to: a) ease of performance, b) operation can be done by the same primary surgeon at the same institution, c) the procedure time is shorter, and d) an aesthetically superior final outcome more acceptable to the patient is achieved. We should also mention that the irrigation of the sternum and subcutaneous space with autologous blood products has contributed significantly to the reduction of DSWI following median sternotomy which is the subject of a work in progress [5].

References


eComment: Management of deep sternal wound infections; placed in perspective!

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van Wingerden et al. have tried to analyse a very heterogenous patient group, and restricted their analysis to only centres using both omental and muscle flaps, had a high percentage of patients who had prior interventions (debridement and drainage, irrigation, sternal reconstruction), had a high Publication/contribution by plastic surgeons and presumably patients with more extensive destruction of bony structures [1]. It should therefore be interpreted as an analysis on a small cohort of severe grade deep sternal infection patients at the extreme end of the spectrum. Our annual incidence of deep sternal wound reintervention has decreased to 0.5–0.8%, as reported by others [2]. Vacuum assisted closure therapy combined with systemic antibiotics is used immediately upon any sign of significant wound infection - superficial versus deep possibly not yet clearly apparent [3]. This may alter the progressive course of the infective process by very early removal of infective material, stabilising any initial sternal instability and reducing dead space. Sternal dehiscence once manifested is then managed with surgical debridement. Once the acute infective process is resolved and wound cultures negative, we then do primary sternal closure, insert closed irrigation – suction drains and if required do bilateral myocutaneous pectoral advancement flaps [4, 5]. In the 11-year period (2000-2010; 9253 cardiac procedures) our in-hospital mortality for 85 patients requiring reintervention for deep sternal wound infection has been 7% vs. 3% for all other patients during this period, and notably the sternal infection patients had higher logistic EuroSCOREs 10.2% vs. 7.9%, reflecting their higher preoperative co-morbidities. Therapy failure requiring subsequent plastic surgical assistance with further flaps has been required in 6% of our infected patients. The predominant ‘single flap literature’ excluded from van Wingerden’s analysis is probably the more accurate representation of most cardiothoracic surgical strategies, which as in our experience has good results. Immediate initial management is as important as ‘flap selection’. The use of an omental flap is though an excellent additional option that warrants more frequent consideration, but in select patients.

References


eComment: Advantages of laparoscopic omental flap in the treatment of deep sternal wound infection

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The article from Dr. van Wingerden and colleagues [1] is a very interesting study on an important issue in thoracic surgery. The severity of clinical situations requiring surgery for infected median sternotomy wounds is highly variable. Most thoracic surgeons who treat sternal infections retain the use of the omentum for the most critical situations and reserve the use of muscle flaps for non life-threatening conditions. Muscle flaps are more commonly used because they are readily available and induce a lower surgical trauma compared to laparotomy-harvested omentum. Furthermore, such procedures are preferred because they are relatively quick and simple. The present study demonstrates that muscle flaps are not superior to omental flaps (harvested through a laparotomy), despite the heavier surgical trauma induced by the latter. The greatest disadvantages of the omentum for treating postoperative sternal osteomyelitis are linked to the laparotomy. The laparotomy is responsible for postoperative ileus (delayed oral nutrition) and postoperative pain (impairment of ventilatory dynamic, mucus retention, possible respiratory infections). The possibility of harvesting the omental flap by a laparoscopy is a well-known method and a technically easy procedure. We believe that this method is not being used very frequently, mainly because of the lack of experience of thoracic surgeons in laparoscopy. In patients with severe mediastinitis resulting from an infected median sternotomy wound, laparoscopically-harvested omentum allows the advantage of the plastic properties of the omentum, without significant surgical trauma. The most important advantages of the laparoscopic technique compared to the open procedure are reduced postoperative pain, shorter postoperative bed rest, lower rate of respiratory and wound complications, and earlier resumption of oral nutrition. Omental flaps are preferable to muscle flaps because they allow better filling of the inferior third of the mediastinum, provide more important bulk to fill wide defects (especially in female and in sicker patients) and conform better to the deepest recesses of the mediastinum [2].

References