eComment. Post-sternotomy mediastinitis management: negative pressure is the key

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doi: 10.1093/icvts/ivt399
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I read with great interest the paper by Yu et al. in which they compare outcomes of vacuum-assisted closure (VAC) therapy with conventional management in patients with post-sternotomy mediastinitis (PSM) [1]. There is no general consensus concerning the appropriate surgical approach to PSM and multiple wound healing strategies have been proposed [2]. The treatment of PSM has changed radically with the advances made in VAC systems since the concept of negative wound pressure therapy was first described in the mid 1990s. VAC therapy was introduced to clinical practice in 1995 in North America and two years later it was available in Europe. Since the introduction of VAC techniques in the management of sternal wound infection, there has been a paradigm shift toward the use of this less invasive strategy as a first-line therapy in the management of PSM [2].

Although I recognize the efforts of Yu et al. in reviewing the literature to find the best strategy for patients with PSM, I would like to mention one important point that they failed to include in their report.

Closed drainage with Redon catheters is another alternative technique for PSM first used by Durandy et al. [3]. The high negative pressure (-700 mmHg) induced by the bottles fulfills exactly the role of VAC in a different fashion. Vos et al. [4] were the first to perform a prospective study comparing clinical outcomes of VAC with primary closure using Redon catheter in the setting of PSM. They included in their study 161 patients with PSM; there were 89 patients in the VAC group and 43 patients in the Redon group. Both groups were similar in risk factors and severity of mediastinitis. Hospital stay was significantly shorter in the Redon group (45 +/- 38 days) compared with the VAC group (74 +/- 61 days). The in-hospital mortality rate was similar in both groups, however re-infection rate was higher in the VAC group probably due to the increased risk of wound contamination during dressing changes. The authors of the present study concluded that this treatment modality using Redon drains provides sternal wound healing without repeat intervention while significantly reducing the hospital stay without compromising mortality.

By applying negative pressure to a sternal wound either by VAC or Redon drain connected to bottles several advantages are combined: removing exudate from the infected area and increasing blood flow into the wound. None of these studies is a randomized trial; therefore a prospective clinical trial is required to address this issue at a higher level of evidence.

Conflict of interest: none declared

References