

Vacuum-Assisted Closure System with Direct Contact to Native Arteries and/or Vascular Grafts to Improve the Outcome of Perivascular Infection

NOTES

Dieter O. Mayer, MD, Zurich, Switzerland; M. Enzler; R. Inderbitzi; H. Schuster; M. Wilhelm; M. Genoni; M. Lachat, Zurich, Switzerland

Purpose

The purpose of this study was to evaluate the safety and impact of a vacuum-assisted closure system (VAC, KCI) with direct contact to native arteries and/or vascular grafts.

Methods

A prospective analysis was performed of 25 patients with 30 perivascular infection sites (n = 26) or lymphatic fistulae (n = 4). The vacuum-assisted closure (VAC) system was directly applied on the vessel wall or vascular graft with suction of 50 to 125 mm Hg. Three patients had multiple wound infections over time. The black and white sponges were used 29 and 4 times, respectively, including the so-called sandwich therapy. Exchange of VAC system was done every 3 to 10 days.

The VAC system was applied to the following areas: neck (n = 2), retroperitoneum (n = 4), groin (n = 18), thigh (n = 5), and calf (n = 1). The following vessels were covered: carotid artery (n = 2), iliac artery (n = 2), femoral artery (n = 7), and femoro-distal vein bypass (n = 2), Shelhigh bypass (n = 5), homograft (n = 5), polytetrafluoroethylene (n = 4), and Dacron (n = 3) prosthesis.

Results

The technical success rate was 100%. No vascular erosion or bleeding occurred. Bacterial swabs were negative after 4 to 56 days of VAC application. Wounds healed after a mean time of 19.5 days (range 4 to 97 days).

Conclusion

The direct application of a VAC system on native vessels and/or grafts is safe. Wound infections otherwise requiring daily revision in the theater could be treated every 3 to 10 days on the ward, and extra-anatomic bypasses were avoided. Further studies are needed to prove long-term results and cost effectiveness.