Postoperative negative pressure therapy significantly reduces flap complications in distally based peroneus brevis flaps: Experiences from 74 cases.

Abstract:
The distally based peroneus brevis muscle flap is a valuable therapeutic option for coverage of tissue defects around the ankle and the distal lower leg. However, the rate of postoperative flap complications requiring revisional surgery is high due to an impaired venous drainage and oedema formation. The purpose of this study was to evaluate if postoperative negative pressure therapy is able to reduce flap complications. From April 2010 until March 2014, we treated 74 patients with distally based peroneus brevis muscle flaps for defect coverage at the lower leg. In four cases, an osteomuscular composite flap has been used to treat partly stability-relevant bone defects. In 43 cases, negative pressure therapy (75mmHg, continuous) with a circular dressing was initiated after the flap procedure for 7 days. In 31 cases no negative pressure therapy was initiated. We retrospectively analysed those two groups of patients. The primary endpoint was the incidence of flap complications with a need for revision surgery, which were classified in three grades. The group treated with negative pressure therapy had significantly less flap complications when compared to the control group (p<0.0001). Concerning the single grades of complication, the negative pressure therapy-group had a significantly smaller rate of skin graft necrosis (Grade 1; p=0.014) and
partial flap loss (Grade 2; p=0.002) compared to the control group. There were no statistically significant differences concerning complete flap loss (Grade 3) between both groups. Postoperative negative pressure therapy for 7 days reduces flap complications in distally based peroneus brevis flaps.