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CASE REPORT

Vacuum-assisted wound closure for the management of a foot ulcer due to Buerger's disease

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KEYWORDS

Buerger's disease;
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closure;
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Summary Thromboangiitis obliterans is a segmental inflammatory disease of the small- and medium-sized vessels mainly affecting the extremities. Although there are numerous reports concerning the treatment of these debilitating, chronic ulcers, such as skin grafting, local flaps, and free flaps, this report is the first published case of a patient with Buerger's disease, successfully managed with vacuum-assisted closure (VAC) application. This therapy decreases the period of hospital stay and increases patient comfort between dressings. Further clinical studies are needed to demonstrate the effectiveness and safety of VAC therapy in treatment of ulcers due to different kinds of vasculitis.

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Thromboangiitis obliterans is a segmental inflammatory disease of the small- and medium-sized vessels mainly affecting the extremities. First described by Felix von Winiwarter in 1879, it was revisited by Leo Buerger, a surgeon at the Mount Sinai Hospital in New York, who presented his paper on thromboangiitis obliterans in 1908. After his presentation, thromboangiitis obliterans became commonly referred to as Buerger's disease.¹ Although the

exact aetiology is unknown, there is a strong correlation with smoking. The majority of the patients are young males presenting mostly with ulcerations and gangrene of the extremities.² There are numerous reports concerning the treatment of these debilitating, chronic ulcers, such as skin grafting, local flaps, and free flaps.^{3–6}

It is now common in practice to apply the vacuum-assisted closure (VAC) device temporarily in order to improve the wound bed. Although application of the vacuum-assisted closure device is not a substitute for proper wound debridement and the device should only be applied once the wound is clean, VAC could improve blood circulation in wounds by increasing capillary calibre and blood volume by stimulating angiogenesis and could decrease the permeability of blood vessels and wound oedema by narrowing endothelial spaces

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Figure 1 Appearance of the foot ulcer during the course of treatment. (a) Initial presentation of the wound, (b) increased wound size after failure of neural island flap, (c) healthy granulation on the wound base after VAC therapy, (d) almost complete closure of the wound with split thickness skin graft and VAC therapy, (e) appearance of the defective area 9 months after the last surgical intervention.

and by restoring the integrity of capillary basement membranes.⁷

When treating ischaemic ulcers in a patient with Buerger's disease, vascular reconstruction should be considered first in order to salvage the limb. After revascularisation, there are very few local flaps that can be used to cover the defect in a patient with Buerger's disease.³ This report is the first published case of a patient with Buerger's disease,

successfully managed with VAC application after failure of possible local flaps.

Patient and methods

A 42-year-old male with a non-healing foot ulcer on his heel was referred to our clinic. He had resting pain on his feet

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