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MEETING ABSTRACT Open Access

Wound bed preparation with NPWT in diabetic foot ulcers: case report

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Background

Negative Pressure Wound Therapy (NPWT) is primarily used for very complex chronic wounds. The surgical treatment of the diabetic wounds with loss of soft tissue usually consists of closure using split-thickness skin grafts or transposition flaps. However, the first step consists of standard wound care with moist gauze dressing with the aim to prepare the wound bed for final closure. Clinical and experimental studies reported that negative pressure increases local blood flow and decreases bacterial colonization. Localized negative pressure removes fluids from the wound and promotes the granulation tissue, which is required for wound closure.

Materials and methods

A 68 years old man, with diabetes and peripheral neuropathy but without vascular dysfunctions was observed in our outpatient service in consequence of a traumatic wound of left foot with exposed bones and tendons. Antibiotic drugs were provided and NPWT was applied for three weeks. During this period, an increase of granulation tissue and decrease of nonviable tissue were observed. After this period, amputation of third, fourth and fifth left toe were performed because of bone necrosis. He continued NPWT for 2 weeks until complete granulation of the wound bed, and subsequently the wound was closed with a thin skin graft (Figure 1).

Results

NPWT achieved a faster granulating wound bed in order to prepare it for surgical closure technique.

Discussion

NPWT reduces wound surface area by the traction force of negative pressure which increases mitosis of tissue around the wound.

Faster wound healing during the treatment of diabetic foot ulcers may decrease hospital stay and prevent extensive surgery for wound closure. NPWT can improve therapeutic results, major amputations being avoided.

Figure 1 (Clinical Case)

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