Multimodal and synergistic approach to treat diabetic foot wound using regenerative medicine techniques: A case report

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Diabetic foot wound (DFW) represents a major cause of leg amputation. Risk factors implicated in DFW development are mainly vascular, neuropathic and mechanical. A multidisciplinary approach is mandatory to treat the wound and avoid amputation. We present a case of a 57 years man, affected by peripheral vascular disease and already subjected to revascularization, with diabetic foot complicated by a third grade heel wound, a forth grade hallux wound and fifth metatarsal bone osteomyelitis.

First of all, we have cleaned all the wounds using a surgical debridement and we have removed the fifth infected metatarsal bone. The heel wound bed was necrotic and edges were inactive. Second of all we have made a hydrosurgery debridement followed by fifteen days of local oxygen therapy performing a wound bed preparation and reducing tissue hypoxia. Then we have obtained wound healing reactivation exploiting the synergy between platelet rich plasma and autologous adipous micrograft injected into the bed and the edges of the wound, in addition to another cycle of local oxygen therapy. In order to guide the healing advanced dressings were applied. The affected leg was kept from carrying body weight for 30 days and gradually was helped to carry the body weight by a specific footwear. The wound size reduced itself by more than 50% after 60 days and healed completely in 120 days, allowing the affected leg to carry full body weight.

The wound has healed completely thanks to the synergy of a multidisciplinary wound care team and throughout the different regenerative techniques used at the right timing according to wound healing process.

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