

Success of Combined Therapy (LASER, PDT, BIOMODULATION AND PRF) in Healing of Vascular Ulcer in a Patient with Acute Occlusive Disease: Case Report

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Introduction:

Acute Occlusive Disease (AOD) is characterized by the sudden and severe obstruction of blood vessels, leading to interrupted blood flow, especially in the lower limbs. This condition can result in complications such as vascular ulcers and amputations, often in patients with comorbidities like diabetes and hypertension. In Brazil, the prevalence of AOD has increased due to the rise of peripheral vascular diseases and risk factors such as obesity, smoking, and diabetes. The treatment of these ulcers requires advanced approaches like laser therapy, regenerative therapy, and PDT, which aim to promote wound healing, control infection, and reduce pain. The field of Acute Occlusive Disease and Its Complications is constantly evolving, focusing on improving patients' quality of life and preventing severe complications such as amputation.

Primary Objective

To evaluate the efficacy of combining laser therapy, PDT, biomodulation, and regenerative therapy (PRF) in the treatment of vascular ulcers in diabetic and hypertensive patients, with an emphasis on wound healing and infection control.

Methods:

This is a descriptive and explanatory study in the form of an experience report, conducted at a specialized clinic in Campinas-SP, Brazil. The patient is a female, diabetic and hypertensive, with a below-knee amputation on the left lower limb (LLL), due to a vascular ulcer worsened by Acute Occlusive Disease. Wound characteristics: wound bed located on the Achilles tendon, between zone two and zone three, with an area of 26 cm², necrosis in part of the tendon fibers, intense odor, and presence of purulent exudate. Pain scale: 8. Previous treatment: Primary coverage with hydrofiber with silver (Ag) and hydrocolloid dressing. After specialized assessment, we modified the treatment due to TIMERS and added laser therapy with a PDT protocol and biomodulation. Sequential debridement was performed until the removal of all nonviable tissue. With the patient's consent, the first PDT session was applied, followed by closure with ionic silver alginate and secondary coverage with cotton gauze.

Results:

After the therapeutic change, during the first 10 sessions, we applied laser therapy, alternating PDT protocol with red light (9J) and biomodulation with red light (1J). We also applied infrared laser (3J) at the wound edges, with a higher dose (4J) on the calcaneus area. After these 10 sessions, with the wound bed granulated, we started the application of Regenerative Therapy (PRF), combined with laser therapy. Full wound regeneration occurred after 21 sessions, totaling 2 and a half months of treatment.



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Conclusion:

Considering the pain criteria and aiming for immediate relief, as well as the risk of infectious worsening, we opted for selective conservative debridement of necrotic fibers, promoting intensive drainage of the exudate collection. The pain scale response was positive, decreasing from 8 to 3, observed only during the treatments. The combination of advanced therapeutic techniques proved to be effective in promoting wound healing and controlling pain and infection, with positive results in the treatment of vascular ulcers

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