

Treatment of Difficult-Healing Venous Ulcer with Compression Therapy Associated with the Use of Low-Density Laser: Case Report.

Introduction:

Venous ulcers account for approximately 70% of lower limb ulcers and are common in patients with chronic venous insufficiency. When healing is difficult, a combined therapeutic approach should be used to promote an effective response to tissue regeneration. Treatment with compression therapy is considered the gold standard in the management of these lesions, as it promotes venous return and helps control edema. However, the complementary use of photobiomodulatory therapies, such as low-density laser, has been explored as a way to enhance clinical results.

Objective:

To report and analyze the effectiveness of treating a difficult-to-heal venous ulcer by combining compression therapy with the use of low-density laser, highlighting its effects on improving the healing process and improving the quality of the repaired tissue.

Methods:

This is a descriptive, qualitative case report based on the clinical follow-up of a patient diagnosed with a chronic venous ulcer resistant to previous treatments. The patient underwent a combined therapeutic protocol involving standard wound care, compression therapy, and photobiomodulation with low-density laser.

Case report:

- 72-year-old female patient with diabetes and obesity, with a history of chronic varicose veins and a sedentary lifestyle, presented with a lesion on the left lower limb (LLL), with the presence of exudate and local pain for approximately one year, with no signs of healing even after previous treatments.
- At the initial evaluation, the lesion was located in the medial supramalleolar region of the left leg, measuring 19 cm long by 14 cm wide. It had irregular edges, granulation tissue and a high level of exudate.
- The patient reported intense pain, classified as 7/10 on the Visual Analog Scale (VAS).
- The diagnosis was confirmed by clinical evaluation and venous Doppler examination, which revealed no signs of arterial insufficiency.
- Treatment consisted of dressings with non-adherent gauze, application of a compressive bandage and use of low-density laser, with wavelengths of 660 nm and 808 nm.
- The dose applied was 2 J for each wavelength (660 nm + 808 nm), totaling 4 J/cm² per point, with a power of 100 mW.
- The frequency of application was every 72 hours.
- The treatment lasted a total of six weeks.
- The clinical evolution was favorable:
 - in the third week, a reduction in exudate and the beginning of the epithelialization process were observed.
 - At the end of the sixth week, the wound was completely healed, with a reduction in pain from 7 to 2 on the VAS scale.
 - No signs of infection or other complications were observed throughout the treatment.



Figure 1.

Contaminated wound with the presence of serosanguineous exudate and signs of local infection.



Figure 2.

In the third week, reduction of exudate and beginning of the epithelialization process.



Figure 3.

At the end of the sixth week, the wound was completely healed, with visible tissue regeneration and no signs of infection or inflammation.

Conclusion:

- The combined treatment proved to be effective in the management of difficult-to-heal venous ulcers, promoting the acceleration of the healing process and improvement of symptoms.
- This case reinforces the potential of phototherapy as an adjuvant resource in the care of complex wounds, representing a promising alternative for patients with limited response to conventional methods.