

Case Report: Diabetic Patient with Arterial Ulcer

Introduction:

Arterial ulcers are difficult-to-heal ischemic lesions, usually associated with peripheral arterial obstructive disease. When they affect diabetic patients, the risk of complications such as infections, necrosis and amputations is significantly higher, requiring careful and individualized clinical management. This case report describes the therapeutic approach adopted in a diabetic patient with arterial ulcer, highlighting the importance of early diagnosis, vascular evaluation and the choice of interventions aimed at improving perfusion and controlling systemic factors.

Objective:

To present a clinical case of arterial ulcer in a diabetic patient, describing the diagnosis, therapeutic management and results obtained, with emphasis on essential care for approaching this condition in clinical practice.

Methods:

Descriptive clinical case report of a diabetic patient with arterial ulcer. Data were obtained through anamnesis, physical examination, vascular evaluation with Doppler and outpatient follow-up. Treatment included glycemic control, local wound care and interventions according to perfusion assessment and clinical evolution..

Case report:

- A 67-year-old male patient, with a history of type 2 diabetes mellitus for two decades and systemic arterial hypertension, presented with an ulcer on the right lower limb (RLL), associated with pain at rest.
- At the initial clinical evaluation, the lesion was located on the dorsal region of the right foot, measuring approximately 4 cm in length, 6 cm in width, and 1 cm in depth.
- The ulcer presented with regular edges, the presence of devitalized tissue, and low exudate. Clinical examination, complemented by arterial Doppler ultrasound, revealed a significant reduction in distal blood flow, confirming the diagnosis of an ischemic arterial ulcer.
- A multidisciplinary treatment plan was implemented, focusing on strict glycemic control, individualized nutritional guidance, and appropriate local wound care.
- Mechanical debridement was performed to remove necrotic tissue, and dressings were selected based on the wound healing phase, respecting the specific needs of each tissue type.
- As an adjuvant therapy, low-intensity laser therapy (photobiomodulation) was initiated. Laser wavelengths of 660 nm (red) and 808 nm (infrared) were applied, delivering 4 J per wavelength—totaling 8 J/cm² per point—with a power output of 100 mW. The protocol was followed consistently, targeting stimulation of cellular repair, neovascularization, and analgesic effects.
- After three months of treatment, a significant reduction in lesion size was observed, with progressive improvement in epithelialization. By the ninth month, the wound was completely healed. The patient was discharged from care, reporting a marked improvement in pain symptoms and overall quality of life.



Figure 1.
Wound with devitalized tissue and presence of inflammatory signs.



Figure 2.
After three months of treatment, well-vascularized granulation tissue is observed, with no apparent depth, indicating favorable progression of the healing process.



Figure 3.
Completely healed wound, with restored skin integrity, absence of inflammatory signs and complete re-epithelialization of the previously injured area.

Conclusion:

- Effective treatment of arterial ulcers in patients with diabetes requires a multifaceted approach, including strict glycemic control, assessment of blood circulation, and specific local care.
- Laser therapy, combined with adequate metabolic control, has been shown to be effective in patient recovery, promoting significant improvement of the lesion. Comprehensive and early interventions are essential to prevent serious complications, such as extensive infections and amputations.