

Title: Association of hyperbaric oxygen therapy and laser therapy in the healing of Achilles tendon rupture

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Introduction: Achilles tendon injury can result in poor quality of life for the patient due to its functional mobility. In addition, it is a great challenge for the health team to work on the regeneration of this injury and functional rehabilitation. Among the new technologies available for the treatment of wounds, there is hyperbaric oxygen therapy (HBOT), which consists in the application of 100% oxygen in hyperbaric chambers, aiming in systemic hyperoxia in the body, accelerating the healing process. Laser therapy also emerges as a new technology in treatment of wounds that, added to the hyperbaric one, potentiates the local action, they act in cellular and biochemical events.

Results: Female patient, 53 years old, Diabetes Mellitus, Controlled Systemic Arterial Hypertension. last surgery June 6, 2021 – lesion measuring 8.0 x 2.0 cm (granulation tissue and medium amount of serous exudate);
On the same day, the lesion was cleaned with 0.9% warm saline, the 1st laser therapy session was performed using 0.5 joules of red laser in the path of the points and 2 joules of infrared in the cardinal points in the granulation region. The wound was closed with rayon gauze, sterile gauze and bandage. Procedure repeated on June 27, July 7, July 9, July 16 and July 30, with removal of the stitches on July 8; Treatment ended with 72 sessions of HBOT and 6 sessions of laser therapy, with good evolution and epithelialized tissue.

Objective: To describe the benefits of the association of hyperbaric oxygen therapy and laser therapy in the healing of Achilles tendon rupture.

Methods: This is a qualitative approach research, an experience report. The case was experienced by a nurse in a private HBOT clinic/RS. The precepts ethical were met, the patient signed the consent form authorizing the images and case report.



Conclusion: In this case, a favorable evolution was verified, associating the two therapeutic measures, reinforcing what the literature has shown in relation to their benefits. Exposure to high concentrations of O₂, increase oxygen saturation, forming neoangiogenesis and fibroblast proliferation, which, added to the stimulation of local laser therapy, increase the production of adenosine triphosphate (ATP) accelerating the healing process.