

C A S E R E P O R T

Use of hyperoxidized oils-based medical devices for the wound healing in post-surgical patients

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Abstract. Postoperative injuries of the lower limb represent a challenging complication after surgery. The use of advanced dressings, local flaps, reconstructions with grafts or dermal substitutes represent the most common therapeutic solutions. With the present paper, we describe a case of a postoperative wound of the leg treated with the use of hyperoxidized oils-based medical device: NOVOX©. An 88-year-old woman presented in September 2022 an ulcer on her left leg, on the external malleolus. Authors decided to treat the lesion with NOVOX© in the form of a dressing pad. The controls initially lasted every 48 hours, subsequently every 72 hours and in the last month only once a week. The progressive clinical examination showed a global reduction of the wound area. According to our experience, the novel oxygen-enriched oil-based dressing pad (NOVOX©) is simple to use, secure, and successful in treating old patients receiving postoperative therapy for leg ulcers. (www.actabiomedica.it)

Key words: plastic surgery, wounds, postoperative ulcers, dressings, hyperoxidized oils-based medication

Introduction

Postoperative injuries of the lower limb represent one of the most difficult complications for the plastic surgeon to deal with (1). The treatment of such ulcers is a challenging task for surgeons due to high recurrence rate. The use of advanced dressings, local flaps, reconstructions with grafts or dermal substitutes represent the most common therapeutic solutions, but often with high costs and very long healing times (2,3).

Ozone (O₃) has been identified as a healing promoter for several chronic wounds (diabetic, as well as ischemic or trophic ulcers). Due to its capacity to stabilize O₃ between the double layer of unsaturated fatty acids, olive oil is one of the finest ozone reservoirs (4). NOVOX© (MOSS SpA, Lesa, Novara, Italy), an ozonized olive oil-based medication, is supplied as an oily gel in a sealed syringe or as flat dressing.

This study aims to evaluate NOVOX©'s effectiveness in a post-surgical patient presenting with persistent injury of the lower limb.

Case report

In September 2022, the authors evaluated an 88-year-old female patient who had previously undergone orthopedic surgery. The woman had an ulcer on her left leg, on the external malleolus. At the first clinical observation, the lesion appeared as inflamed on the periwound, with an extension of 16.2 cm² and signs of infection. The patient refused any surgical solution, so the treatment was focused on topical therapy with outpatient monitoring. As regards the management of the infection, a deep sample was taken for culture examination with antibiogram. An X-ray exam ruled out osteomyelitis, but targeted therapy with sulfamethoxazole/trimetoprim was required to eradicate local bacterial contamination. Authors therefore decided in October 2022 to treat the lesion with NOVOX© in the form of a dressing pad. The controls initially lasted every 48 hours, subsequently every 72 hours and in the last month only once a week. The progressive clinical examination, helped



Figure 1. Treatment of a 88-year-old female patient who had undergone orthopedic surgery. From left to right – up to down clockwise: first clinical evaluation, 2 weeks, 1 month, 2 months, 3 months, last evaluation after 103 days.

by a computer software and the TIME-H prognosis evaluation (5,6) showed a global reduction of the wound area, the total reduction of the perilesional inflammatory area and the complete absence of signs of infection in about 100 days (Fig.1).

Discussion

Innovative medical dressings have been created to aid in the treatment of postoperative wound healing. Reactive oxygen species (ROS), a crucial element of

the normal wound-healing response, have shown in several lines of research to be hindered under hypoxic environments, where wound healing is also reduced. A novel oxygen-enriched oil-based product named NOVOX© (Moss SpA, Lesa, Novara, Italy) has recently been demonstrated to enhance the healing of deep and narrow wounds, including those caused by surgical operations, and to produce a local microenvironment unfriendly to pathogen development.

According to our experience, the novel oxygen-enriched oil-based dressing pad (NOVOX©) is simple to use, secure, and successful in treating old patients receiving postoperative therapy for leg ulcers. In individuals treated by surgery followed by secondary intention healing, it seems to give quicker wound healing with satisfactory cosmetic effects. It is highly recommended to continue in this way the research, with bigger sample sizes to corroborate our initial findings for this case.

Ethic Committee: USL Umbria 1 – 2022 – RB12USL1SE4 – Perugia (Pg).

Informed Consent: Written informed consent was obtained from the patient concerned.

Conflict of Interest: Each author declares that he or she has no commercial associations (e.g. consultancies, stock ownership, equity interest, patent/licensing arrangement etc.) that might pose a conflict of interest in connection with the submitted article.

Authors Contribution: All of authors from original idea to final realization.

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