

A New Integrated Approach for the Treatment of Complicated Ulcers

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INTRODUCTION

Lipofilling is a surgical technique involving the use of autologous adipose tissue for both aesthetic and reconstructive purposes. The rationale of the technique is based on the presence, inside the adipose tissue, of multipotent stem cells, which can be used to improve texture, smoothness, and elasticity of the pathologic tissue (scars, ulcers, and irregularities of the skin profile).¹ Inside the aspirated adipose tissue are also present multipotent cells (adipose derived stem cells [ADSCs]) and vascular endothelial growth factor, important for their ability to induce regenerative processes favoring the healing of complex wounds.² We present a new surgical approach that provides surgical hydrolytic debridement associated to lipofilling³ to facilitate healing and functional recovery of the upper and lower limbs suffering from multifactorial ulcers.

MATERIALS AND METHODS

Between November 2014 and May 2016, 9 patients: 4 with venous ulcers, 4 with posttraumatic ulcer of which 1 was complicated by osteomyelitis, and 1 patient suffering from necrotizing ulcer localized at the back of the hand, as result of an unspecified arachnid bite, were treated at our Operative Unit. All patients were subjected in the first instance to surgical debridement of the ulcer bed with Versajet and subsequently at 2 sessions of lipofilling (Fig. 1) with withdrawal from the abdominal and trochanteric region according to Coleman.⁴ The patients were then subjected to dressings twice a week; at regular intervals of 15 days they were sub-



Fig. 1. Intraoperative. Chronic vascular ulcer of mixed type in treatment with lipofilling.

jected to serial evaluations, performed by a single surgeon, for the assessment of: reduction in ulcer extension, cutaneous trophism, tissue elasticity,⁵ joint mobility, pain in the passive and active pressure (visual analogue scale [VAS] scale).⁶

RESULTS

After 45 days, at third observation, the lesions were evaluated in terms of reduction in the diameter of the ulcer, presence of granulation tissue, and trophism of surrounding skin. In 7 of 9 patients, we observed a complete healing (Fig. 2); those still in treatment have experienced significant reductions both in diameter and depth. All patients treated reported an almost complete remission of chronic pain (9 to 5 seconds VAS scale).

DISCUSSION

Lipofilling is a technique of easy execution, minimally invasive, executable in day-hospital, repeatable, with high compliance by the patient, effective both for regenerative and for reconstructive purposes.⁷ The clinical study presented shows

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Fig. 2. Postoperative. Aspect at 75 days with excellent clinical, symptomatic, and functional response to lipofilling.

that the autologous fat transplantation, through the tissue regeneration stimulated by vascular endothelial growth factor, associated to surgical hydrolytic debridement, generates in the course of time considerable benefits in terms of wound healing, improvement in tissue trophism,⁸ prevention against any relapses, and reducing the algic symptoms.

CONCLUSIONS

Properly planned and implemented, it does not present major complications. Careful preoperative assessment, associated with serial evaluations, allowed the development of a valid model approach for the care and rehabilitation of complicated ulcers.

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