

Skin Grafting in the Treatment of Diabetic Foot Soft Tissue Defects

Anca Bordianu¹, Florin Bobircă², Traian Pătrașcu²

¹“Bagdasar-Arseni” Emergency Hospital, Plastic and Reconstructive Department, Bucharest, Romania

²“Dr I. Cantacuzino” Clinical Hospital, General Surgery Department, Bucharest, Romania

Abstract

Background: According to the World Health Organization, cases of diabetes have risen from 108 million in 1980 to 422 million in 2014, with a more rapid rising in middle- and low-income countries. Diabetes causes yearly approximately 1.6 million deaths, and is a major cause of heart attacks, stroke, kidney failure, blindness and lower limb amputation. This article provides information on the treatment of a frequent complication related to diabetes, namely toe/ partial foot amputation. Broad, deep operative defects of the diabetic foot represent a reconstructive challenge. The aim of the study is to analyse the efficiency of healing methods using splitted skin graft corroborated with negative pressure therapy for wounds resulted after diabetic foot surgery. Second of all, the study intends to highlight the role of a sequence of the multidisciplinary approach, in this case general surgeon-plastic surgeon, in assuring the functionality of the pelvic limb.

Methods: 63 diabetic patients were retrospectively analysed, patients that were admitted in Dr.I.Cantacuzino and Bagdasar-Arseni Clinical Hospitals, with different types of wounds resulted after diabetic foot surgery, between January 2016 and December 2017.

Results: The reconstructions were successful in 56 patients, and, during the follow-up period, there were no complications. From the 7 patients with complications (skin graft necrosis, skin graft infection), one had an auto avulsion of the skin graft.

Conclusion: Direct closure is feasible for small-sized wounds. Skin grafts provide effective coverage for large wounds, although they may often produce concave, caved-in, non-aesthetic closures. NPWT (negative pressure wound therapy) is also a very helpful procedure. Flap reconstruction often provides superior functional and aesthetic appearance. Adjacent tissue transfers may be used to close many wounds, but dermal restraint may hinder motion and lead to closure tension. Alternative solution of repair remains the reconstruction with free flaps, which also poses problems, due to arteriopathy.

Key words: diabetes, diabetic foot, splitted skin graft, negative pressure wound therapy, foot amputation