

Primary dermis fat grafting for socket reconstruction: retrospective comparison of electrocoagulation versus scalpel dissection for epidermis removal.

Abstract:

Purpose: To evaluate outcomes of the use of electrocoagulation for epidermis removal in dermis fat grafting (DFG) compared to the conventional scalpel dissection in patients who underwent primary anophthalmic socket reconstruction.

Design: Retrospective, observational, and comparative study.

Methods: A retrospective review was performed on patients who underwent primary DFG for socket reconstruction between 2017 and 2019 at tertiary teaching hospitals. Patients with previous orbital surgery, previous radiotherapy to the periorcular region, any medical condition that affects healing, cicatrizing ocular surface disease or heavy smokers were excluded. Patients with complete documentation of preoperative and postoperative data only were included. Patients were divided into two groups; group A: epidermis removal by the traditional scalpel dissection and group B: epidermis removal using low power setting electrocoagulation. The main outcome was the timing of complete epithelialization of the dermis layer. Other outcomes included implant motility, prosthesis fitting, patient's satisfaction, and any complications.

Results: A total of 27 patients met the study criteria, and the mean follow-up period was 24.81 months. There were no differences between both groups regarding preoperative characteristics. The mean duration of complete epithelialization of the DFG implant was 9.15 ± 2.94 weeks in group A compared to 22.29 ± 4.43 weeks in group B (p value <0.001). Dermal ulceration was noticed in 9 patients (64.3%) in group B compared to none in group A (p value $=0.001$). Dermal ulceration was significantly associated with long conjunctival healing period (p value <0.001). Volume loss was more common in group B while graft hirsutism and granuloma were more evident in group A. Final prosthesis fitting was possible in all included patients.

Conclusion: Epidermis removal using the electrocoagulation is related to much more delayed epithelialization of the dermis with a higher rate of dermal ulceration compared to the scalpel dissection technique. However, there was no significant difference between both groups regarding the final prosthesis fitting or the overall patient satisfaction.