Intraoperative Electrosurgical Depilation of a Skin Graft

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Abstract

Full-thickness skin grafts harvested from hair-bearing areas may negatively impact cosmetic outcomes if the recipient site is hairless. Intraoperative depilation of unwanted hair follicles using an electrosurgical device can permanently remove hair with a single treatment and improve overall cosmesis.

Keywords: Electrolysis, hair removal, Mohs micrographic surgery, reconstructive surgery, skin graft

Introduction

Autologous full-thickness skin grafts can effectively reconstruct large and complex surgical skin defects. The best cosmetic results are obtained when the graft donor site accurately mirrors the color, texture, sebaceous density, and thickness of the recipient site. However, cosmesis may be compromised if unwanted hair from the donor site is transplanted to the recipient site. Traditionally, unwanted skin graft hair is removed using intense pulsed light, lasers, or transcutaneous electrolysis, but these treatments are usually used several months after the graft has matured. Consequently, the patient may have unsightly hair in the interim. These devices also require multiple treatments, which can incur a large cost. At-home patient-directed hair removal methods include plucking, shaving, waxing, or depilatory creams; however, these modalities often yield poor results and must be repeated on a regular basis to sustain optimal cosmetic outcomes.[1]

We report the use of a commonly available electrosurgical device to successfully and permanently remove unwanted hair from a full-thickness skin graft with a single intraoperative treatment.

Innovation

A 60-year-old man presented with the reconstructive conundrum of a 6.5 cm × 5.5 cm defect on the left temple following Mohs micrographic surgery of a nodular basal cell carcinoma [Figure 1]. There was insufficient donor skin available on the face to repair the defect. After discussing the risks and benefits, a full-thickness skin graft was harvested from the left hair-bearing skin of the lower abdomen with a total area of 42 cm^2 [Figure 2]. Following removal of the subcutaneous fat from the donor skin, all the hair follicles were ablated from the undersurface of the skin using a 30-gauge needle connected to a sharp electrode tip of a monopolar electrosurgical unit at a power of 7 W (Hyfrecator 2000, ConMed, Utica, New York) [Figure 3]. Six months after surgery, there was 100% graft take with no evidence of hair regrowth [Figure 4]. The patient was highly satisfied with the cosmetic result and reported no adverse effects from the surgery or hair removal treatment.

Discussion

Transplantation of terminal hairs to a non-hair-bearing recipient area commonly occurs when a full-thickness skin graft is harvested from the trunk and limbs. It can also occur when a large graft is harvested from the preauricular or postauricular region that includes sideburn or scalp hair. Fortunately, the technique of intraoperative

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Figure 1: Left temple defect following tumor excision

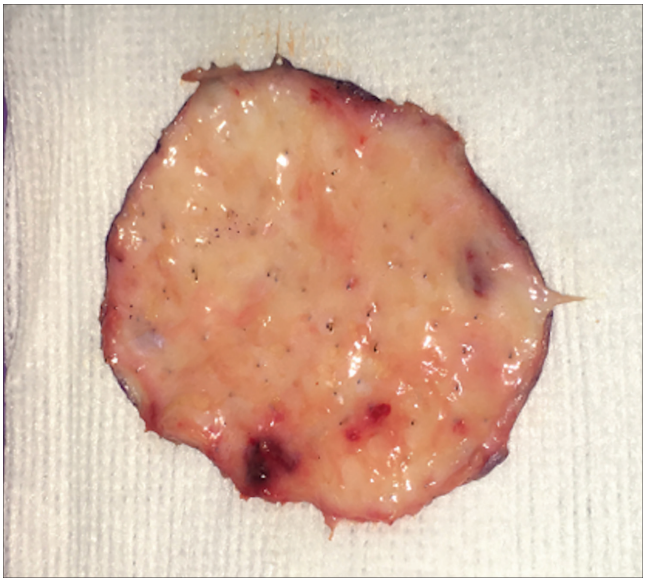

Figure 2: Lower abdominal skin graft

electrolysis of the undersurface of a skin graft is a highly effective, economical, and efficient method for permanently depilating a skin graft. Further studies are needed to assess the use of intraoperative electrolysis for the management of hair-bearing skin grafts.

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Conflicts of interest

There are no conflicts of interest.

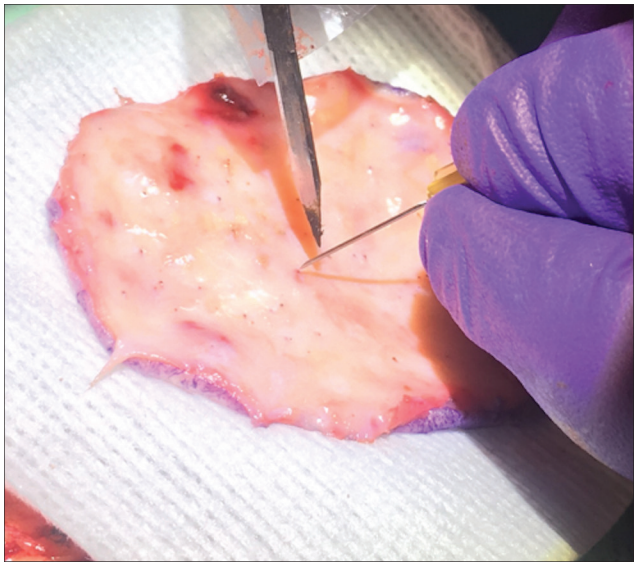

Figure 3: Depilation using a 7 W current conducted to the hair follicles via a 30-gauge needle connected to a sharp electrode tip of a monopolar electrosurgical unit at a power of 7 W

Figure 4: 100% skin graft take with no evidence of hair reoccurrence, 6 months postoperatively

Reference

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