

Case Report

Reconstruction of the Cheek, Moustache, and Beard by Transferring an Expanded Cervical Flap

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The human face is a very important feature as it contains vital elements like the eyes, nose, lips, and eyelids. Numerous factors can damage soft tissue in the face causing functional and cosmetic defects. One of the common causes of disfiguring facial scars is burns. There are different methods of reconstruction each with their own merits and demerits. Herein, we describe a method for the facial reconstruction of an extensive unilateral burn scar using an expanded pedicled flap from the cervical area, with special attention to the hair line of the face.

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Introduction

The face is a very important feature in humans because it is the most visible part of body and contains fine and complex elements which are essential in terms of both beauty and functionality. There is no protection for the face, so it is susceptible to injury by several factors. Burns are one of the common causes of face deformities which result in functional and cosmetic issues.

In men, extensive scars of the face can involve both hairy and hairless areas of the lip and cheek. Under such conditions, both hairy and hairless tissues need to be reconstructed. To date, different methods, such as full and partial thickness graft, local flap, and free flap have been described.

Herein, we present a method in which the skin in the cervical area is expanded and transferred as a pedicled flap for unilateral facial reconstruction.

Case Report

A 42-year-old man presented with an extensive

burn scar on the left side of his face, involving his lip, cheek, chin, and part of his forehead, since childhood (Figure 1). To reconstruct this, a crescent-shape expander was inserted in the anterior surface of his neck and expanded over three months (Figure 2). After full expansion, the expander was removed. The expanded tissue was



Figure 1. Preoperative views of our patient: A) anterior view, B) lateral view.

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Figure 2. After insertion of the tissue expander and inflation.

designed as a bipedicle flap, the edges of which were then sutured together to form a tube to ensure feasibility for transfer and prevention from weeping (Figure 3A). After three weeks, the burned areas of the upper and middle parts of the face were excised. The pedicles were then transferred to the face, using the nonhair-bearing portions for the deformity on the left side of the nose, lip, and the anterior cheek, and the hair-bearing portion for reconstructing the beard and sideburns (Figure 3B). Three weeks later, the other end of the flap was separated from the donor area, and was used for reconstruction of the remaining burned area; a portion of the hair-bearing flap was also used for the left side of the mustache (Figure 4).

Surgical technique

In supine position, under general anesthesia,



Figure 3. A) Tube formation by suturing the edges of the flap. B) After transfer of the tube flap.



Figure 4. Our patient, five years after the operation.

after infiltration of 1:100,000 epinephrine, an incision was made 2 cm above the neck hairline. A pocket was created over the platysma and a tissue expander was inserted (vol: 400 mL, crescent-shape) which was expanded twice weekly. After complete expansion, it was removed and the expanded tissue was formed into a bipedicle flap containing both hairy and hairless tissues which were adjusted for covering the face.

This flap was then transformed into a tube. The donor site was primarily closed and each pedicle of the flap was transferred to the left side of the face in two stages with a three-week interval after excision of the scar.

Transfer of the flap was designed so that the hair growth pattern on both sides of the face was symmetric and the transitional zone of the cheek (hairy-hairless border) was reconstructed with the same kind of tissue from the cervical area.

Discussion

Reconstruction of the burned area of the face is one of the challenges in the field of reconstructive surgery.¹ Several techniques have been described and each method has its own merits and demerits. Some authors recommend skin graft such as full thickness skin graft (FTSG) and split thickness skin graft (STSG). However, none of the grafting techniques restore the normal appearance and texture of the face. Some researchers

recommend flap coverage such as local flaps, free flaps, etc.^{1,2} Local flaps are not large enough to cover one side of the face and free flaps from other areas may not match the facial skin color and texture.

Almaguer et al.³ compared outcomes of grafts vs. flaps on the face. STSG from below the clavicle resulted in poor color match in 50% of patients. FTSGs from above the clavicle, however, had acceptable color and texture match in 98%; but those from below the clavicle, provided poor color match in 55% of instances.

In recent years, the introduction of tissue expanders^{4,5} has provided an excellent alternative for cheek reconstruction. Reconstruction of unilateral facial burn in men is important in terms of resurfacing the beard and mustache area and therefore, special tissue is needed. That is why we used the expanded tissue from the cervical area in

a way that both hair-bearing and nonhair-bearing skin was included in the flap. Then, we transferred the flap to the burned area of the face with special attention to provide symmetry.

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