Facial Scar Management by Hair Transplant: A Case Report

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Abstract
Facial scars in hair-bearing areas are a difficult problem to deal with owing to the nature of the scar tissue and the poor survivability of the grafts. A 26-year-old male presented with a scar on the right cheek area. The patient complained of recurrence and widening of scar and resultant facial asymmetry after serial excision in another hospital. The scar was the result of a burn injury sustained 15 years back. The scar was managed by using 2,642 hair grafts harvested from the scalp area. The patient had excellent hair growth at the end of 1 year with a high satisfaction level. There was a visible improvement in the lip deviation. Restoration of hair in the hair-bearing region of the face may be considered a permanent single-stage solution in such patients.

Keywords beard scar
► hair transplant
► scar management
► hypertrophic scar

Introduction
Cicatricial alopecia is a difficult problem to deal with owing to the nature of the scar tissue and the poor survivability of the grafts. The beard area poses a different challenge because of variable responses to medical treatment and changing direction of hair grafts in close proximity to each other. Scars in this area have been managed by conventional methods like serial excision, tissue expanders, full-thickness grafts, and scar-modifying methods like lasers, etc. Hair transplant is an important tool in the armamentarium of aesthetic surgeons.

Case Report
A 26-year-old male presented with a scar on the right cheek area (►Figs. 1A and 2A) following a burn injury sustained 15 years ago. Subsequently, the patient had undergone serial excision of the scar tissue in a different hospital. He complained of widening of scar and resultant facial asymmetry due to depression in the malar area. The scar extended from the right sideburns area onto the beard area involving the chin and the mental area with lip deviation on the same side. The scar was soft and supple, without any tendency of hypertrophy.

The scar was managed with hair transplant surgery using 2,642 hair grafts harvested from the scalp area using follicular unit extraction (FUE) technique with a 0.9-mm punch under loupe magnification (2.5 × , Carl Zeiss AG, Germany). The procedure was done on day care basis under tumescent anesthesia, Xylocaine 2% with adrenaline (20 mL) + Sensorcaine (10 mL) diluted with normal saline (30 mL). The donor area was evaluated for hair quality, density, color, and texture of the hairs before harvest. The harvested grafts were stored at 2 to 4°C. Coronal slits were marked in accordance with hair direction using a 18G needle. Two and 3 follicular units were used all through the scar region. Single follicular unit with

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300 to 400 hair grafts was used on the margin of the scarred area and in the intervening nonscarred area to replicate the opposite side with an average density of 35 to 40 grafts/cm². The grafts were then implanted onto the recipient area following the natural direction of hair in the beard region (Figs. 3 and 4). Hair transplantation was extended by 1.8 cm in the malar area compared with the opposite side to completely cover the scar tissue.

He was prescribed antibiotics, analgesics, and advised to keep the transplanted area moist by using a normal saline spray at frequent intervals. Postoperative recovery was uneventful (Figs. 1B and 2B).

The use of tretinoin and minoxidil would not be effective in postburn scarring type of hair loss, where the follicles have been destroyed. Antiandrogen agent like finasteride was not advised. The patient had excellent hair growth at the end of 1 year. There was visible improvement in the lip deviation and an apparent improvement in the malar depression.

The hair line on the affected side was designed to cover the complete scar. He has been advised a session of hair transplant on the opposite side to match the hairline on the transplanted side and nanofat graft in the malar area to correct the residual depression.

Discussion

Patients who desire to get facial hair restorations are very specific about their requirement. Thus, it is essential to listen to the patient’s exact goal like in any other cosmetic procedure. Patients with scarring have additional functional goals apart from cosmetic correction. With the increasing trend in gender reassignment surgeries and gender dysmorphophobia, facial hair transplant is not restricted to male patients only.

Hair restoration in the beard and moustache area have been described for almost half a century now; in 1972, Vallis transplanted hair from parietal scalp to the upper lip to create a moustache using a full-thickness strip graft.

Transplanting hair in the beard region is much more challenging compared with the scalp given the multidirectional and disparity in densities in natural growth of hair.

Sideburns and cheek beard region require coronal slits with hair direction parallel to existing hair. For a natural soft feathery appearance, along the cheek border less density is recommended, and a fuller appearance of the body of cheek with high density around 800 to 1,000 grafts each side. The submandibular or jawline region gets concealed in the shadow area, thus minimal grafts are required there.

FUE techniques have largely replaced traditional follicular unit transplantation. Scalp hair transplants usually bear
fruitful results on the face with high regrowth percentage.\textsuperscript{6} Hair loss in scar tissue is primarily due to excessive fibrosis due to which follicles get strangulated causing cicatricial alopecia.\textsuperscript{7} The scar must be mature, freely mobile, and supple to carry out hair transplant. Reconstruction of facial esthetics in postburn cases aids in boosting confidence.

Various methods for beard enhancement are topical application of tretinoin, isotretinoin synergistically with minoxidil 5\% when hair follicles are intact.\textsuperscript{8} Camouflage techniques like usage of pigmented powders, sprays, or lotions lead to only short-term benefit.\textsuperscript{9} Micropigmentation using tattoo has been promoted; however, there is added risk of allergy, infections, or pigment change.\textsuperscript{9} Microneedling induced hair growth and upregulation of hair growth factors.\textsuperscript{10} Laser therapy with fractional CO\textsuperscript{2} and low level laser therapy are used for hair growth.

Hair transplant seems to be the best option with optimal results for facial hair growth.

Minoxidil is commonly prescribed for treating hair loss disorder. While presence of higher levels of androgens is correlated to balding scalp, literature suggests that finasteride, an antiandrogen which is routinely used in scalp hair transplant, is prohibited for hair growth on the armpit, pubis, and beard as hair in these areas requires androgens.\textsuperscript{11}

**Conclusion**

Hair transplant can be a viable treatment option in facial scars in hair-bearing regions in male patients. In the hands of an experienced surgeon, a hair transplant leads to a good aesthetic outcome in such facial scars and is a permanent form of treatment.

**Conflict of Interest**

None declared.

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