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Moustache restoration using follicular unit extraction technique for esthetic repair of prolabial alopecia in adult male patients with repaired bilateral cleft lip: An initial report in eight patients

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ABSTRACT

Prolabial alopecia is an inherent feature of bilateral cleft lip cases, occurring in varying degrees which is worsened following cleft lip repair. In the Southeast Asian population, a strong healthy moustache is considered a symbol of pride and hence many patients seek treatment of their alopecic prolabium due to the cleft lip. The alopecic prolabium also adds to the patients dented confidence by adding to the typical cleft lip look. Among the two techniques mentioned in the literature for hair restoration, namely, follicular unit extraction (FUE) and follicular unit transplantation techniques, the FUE technique offers a minimally invasive and virtually scar less option and is often preferred by most of the patients as well as the surgeons. A very few studies have focused on moustache restoration in adult male patients presenting with prolabial alopecia following bilateral cleft lip repair. This article presents the initial report in 8 adult male patients presenting with prolabial alopecia after repaired bilateral cleft lip that underwent moustache restoration using the FUE technique of hair restoration.

Key words: Bilateral cleft lip, follicular unit extraction, minimally invasive, moustache, prolabial alopecia

the vicinity of the defect.^[1,2] Such appearance serves as a constant reminder for the patients about their defect and dents the overall confidence of the patient both on the personal as well as social front. Furthermore, it can also contribute to psychological disturbances related to self-image and self-esteem.^[3]

Moustache restoration of the alopecic prolabium is probably the final cosmetic procedure that can be offered to such patients after all the functional issues have been dealt with and the patient has reached adulthood. With the current advances in hair restoration techniques, more and more patients demand minimally invasive and virtually scar less procedures in addition to superior cosmetic outcome. The follicular unit extraction (FUE) of hair restoration is one such technique.

The present article presents the initial report in 8 patients with repaired bilateral cleft lips who had undergone moustache restoration of the alopecic prolabium using the FUE technique of hair restoration. Furthermore, an effort is also made to explain the possible reasons for prolabial alopecia in such patients.

CASE REPORT

A series of eight consecutive adult, male patients ranging from 18 to 29 years, reporting to our unit with

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INTRODUCTION

In male patients with repaired bilateral cleft lip, the situation of alopecic prolabium is a frequent observation that is often compounded by the growth of moustache in

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prolabial alopecia following all end stage bilateral cleft lip repair were managed using FUE technique of hair restoration after obtaining an informed written consent. The ethical approval for the study was sought from the hospital's ethical committee.

Preoperatively, all patients were subjected to photographic documentation and routine hematological investigations following which the procedure was carried out in the operation theatre under local anesthesia. The recipient area was carefully studied and the number of follicles that would be required to fill the defect was roughly calculated. The donor site was selected below the level of occipital protuberance based on the literature evidence that the hair follicles in this region are permanent and long lasting and not affected by the process of miniaturization like the rest of the scalp.^[4] A strip of hair measuring roughly 4–5 cm in length and 0.6–0.8 cm in width was isolated from the rest of the hair using micropore tape all around the selected donor area. Following adequate anesthesia, a motorized punch of 0.9–1 mm was used to extract individual hair follicles in a randomized manner. The harvested follicles if present as 2, 3, or 4 units were divided into single hair micrografts and preserved in refrigerated normal saline solution. Then, a roll of sterile gauze was placed intraorally between the upper lip and maxillary teeth to provide a firm base during transplantation of individual hair micrografts [Figure 1a]. This was followed by making small vertical slits of 3 mm to a depth of 5–6 mm, approximately 2–3 mm apart in 5–7 rows using precut 1 mm blades [Figure 1b]. The slits were made in such a manner that it matched the exit angle of the moustache



Figure 1: Intra-operative photographs of the surgical procedure, (a) placement of gauze on the undersurface of the upper lip for forming a firm base, (b) making of slits in the recipient area, (c) dense packing of the recipient site

hair.^[2,4,5] The individual grafts were then implanted into the slits using a pair of magnification loupes and micro forceps in an interdigitating pattern until an illusion of dense packing was achieved.[Figure 1c].

Postoperatively, all patients received oral antibiotics for 5 days and oral analgesics for 3 days. Excessive lip movement was advised to be avoided for the first 3–5 days postsurgery. A saline spray was handed over to all patients for spraying the recipient area at least 6–8 times a day for the initial 4 days to avoid desiccation of the graft site. The use of minoxidil 5% solution gently over the implanted site was encouraged in the postoperative period. The patients were regularly followed up for at least one year and photographic documentation was performed at every visit. The development of any postoperative sequel was also noted.

RESULTS

The following observations were made. On an average, 70–100 grafts were required in the initial sitting for achieving esthetically pleasing results in all patients [Figure 2a-b]. No patient had postoperative sequelae at either the donor or recipient sites during the entire follow-up duration. In two of the patients, graft failure was seen in the range of 50%–60% necessitating the need for a second sitting at 6–9 months from the first sitting [Figure 3a-b]. On examination of the donor site at 15 days postoperatively, the punched out depressions in the donor site were virtually imperceptible. The hair growth in the bilateral scars of the cleft lip repair and alopetic prolabium was found to be disproportionate with growth in the alopetic prolabium noted earlier at 3–4 months postsurgery as compared to growth in the bilateral lip scars that was noted at 5–6 months postsurgery. The remaining six patients were satisfied with the results of the initial surgical outcome. The remaining two patients with graft failure are currently been scheduled for the second sitting.

DISCUSSION

An alopetic prolabium is inherently deficient with hair follicles to varying degrees and this gets exaggerated following bilateral cleft lip repair. Scarring coupled with congenitally affected morphology and the function of the skin especially referring to skin appendages and neurovascular plexus strongly influence the etiopathogenesis of alopetic prolabium. The sensitivity of skin appendages to wounding, scarring, and subsequent tissue tension has been shown to be more



Figure 2: Clinical photographs of one of our patients, (a) preoperative photograph, (b) postoperative photograph at 2 years showing cosmetically acceptable outcome

than other structures, which is potentiated beyond doubt by surgery at the time of bilateral cleft lip repair.^[2,6]

Some of the authors of the current article had a difference in opinion with regard to one important question that was raised in the context of this study; whether hair follicles were present in the bilateral scars and the alopecic prolabium or whether they were not present at all. While some of the authors opined that hair follicles do exist in the affected area but are not conducive to growth, the others were of the opinion that no follicles existed as a consequence of previous surgical insult courtesy bilateral cleft lip repair. The study by Duskova *et al.* well supports the differences in opinion of the authors in the present study.^[2] Using histologic sections of tissue of either primary lip reconstructions ($n = 2$) or secondary lip revisions ($n = 3$), these authors demonstrated scarring in two patients and sufficient number of hair follicles mostly in the catagenic nongrowth phase in the remaining three patients. Immunohistochemical testing of these three patients showed the presence of minute nerves in the area of hair papilla and smaller number of mesenchymal cells mainly in the area of lower segment of the hair follicle. The absence of mesenchymal cells may result in no maturation of hair follicle or possibly even no growth of the hair papilla. The results of immunohistochemical testing indicated that despite the presence of hair follicles in the affected area, they were incapable of reactivity and growth.

Over the past decade and a half, hair restoration techniques have undergone tremendous refinements. Two basic techniques consistently described in the literature are FUE and Follicular unit



Figure 3: Clinical photographs of one of the cases with 60% graft failure, (a) preoperative view, (b) postoperative view at 1 year

transplantation (FUT) techniques. Although a faster method of hair restoration with desirable results in terms of overall outcome of the procedure, the FUT technique leaves a linear scar in the donor area that can be esthetically displeasing. Furthermore, incising deeply in the region of the occipital protuberance beyond the subdermal level invites complications in the form of neuromas, postoperative numbness, and delayed healing.^[4] In addition, FUT is labor intensive and requires a team of trained personnel. The disadvantages of linear scarring and attendant complications of FUT are avoided in the FUE technique. When seeding alopecic foci on esthetically demanding places such as the upper lip, strict adherence to the need of achieving natural and long-lasting result is most beneficial. That is why transplantation technique using individual follicular units is most advantageous. From this point of view, FUE technique is rewarding as it mostly offers single robust hair units for restoration. In the present series, six out of eight patients underwent successful moustache restoration using the FUE technique without any postoperative sequelae noted in any of the patients.

While implanting, individual grafts were spaced 2–3 mm apart in all patients. Such a manoeuvre is well supported in the literature and allows for improved graft survival.^[2,7] Other advantages are ease of placement of grafts and prevention of dislodgement of adjacent implanted graft. Each follicular unit survives as a micro skin graft.

We resorted to the use of micro forceps for implanting the hair grafts. Other techniques documented in the literature are the “stick and place” using either 19 or 20 gauge hypodermic needle or the use of implanters.^[8,9] No matter what the technique used, it is absolutely prudent to keep the epidermal component of the graft at least

0.5–1 mm above the surface of the skin. It is seen that once the edema subsides, grafts get naturally pulled in the slits created. Furthermore, this manoeuvre helps in preventing deep placement of grafts thereby eliminating the possibility of epidermal cysts at a later date.

In two of our cases, a failure in the transplanted grafts to grow was observed in 30%–40% of the transplanted grafts necessitating a need for second surgical sitting. Poor surgical technique, scarring, improper preservation of the grafts postextraction or excessive handling in the form of repetitive attempts during transplanting could be possible reasons for such a failure. Furthermore, the alopecic prolabium is devoid of muscle that might have prevented adequate nutrition been provided to the transplanted grafts contributing to graft loss. The second surgical sitting should be meticulously planned at an interval of at least 6–9 months from the first sitting. The growth of the transplanted hair grafts might be delayed at the bilateral scar regions of the lip as observed in the present study and such time interval allows for growth of the grafts in these regions. Furthermore, it becomes apparent at the end of 6 months as to which areas in the transplanted areas would actually require further grafting.

CONCLUSION

Alopecic prolabium following repair of bilateral cleft lip is a common occurrence and can be successfully dealt with, using the FUE technique of hair restoration, with no postoperative sequelae and virtually imperceptible scarring of the donor site. Advantages such as minimal invasiveness with less morbidity, a virtually scarless procedure and technical simplicity make it an ideal technique for hair restoration when compared to the FUT technique. Most patients can be successfully managed with a single surgical sitting but the possibility of the second surgical sitting does exist and should be explained prior hand to the patient.

This treatment not only restores hair but also hides the cleft scar hence improving the overall appearance of the patient.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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Conflicts of interest

There are no conflicts of interest.

REFERENCES

1. Farkas LG, Lindsay WK. Morphology of the adult face following repair of bilateral cleft lip and palate in childhood. *Plast Reconstr Surg* 1971;47:25-32.
2. Duskova M, Sosna B, Sukop A. Moustache reconstruction in patients with cleft lip: (Final aesthetic touches in clefts-Part II). *J Craniofac Surg* 2006;17:833-6.
3. Reed ML, Grayson BH. Single-follicular-unit hair transplantation to correct cleft lip moustache alopecia. *Cleft Palate Craniofac J* 2001;38:538-40.
4. Bernstein RM, Rassman WR. Follicular transplantation. Patient evaluation and surgical planning. *Dermatol Surg* 1997;23:771-84.
5. Vallis CP. Hair transplantation to the upper lip to create a moustache. Case report. *Plast Reconstr Surg* 1974;54:606-8.
6. Bardach J, Cutting C. Pathogenesis of the Cleft Lip Nasal Deformity; 2001. In *Multidiscipline. Management of Cleft Lip and Palate*. Available from: <http://www.vh.org/pediatric>. [Last accessed on 2016 Apr 10].
7. Uebel C. *Hair Restoration, Micrografts and Flaps*. Sao Paulo: OESP Grafica S/A; 2001.
8. Uebel C. The punctiform technique in hair restoration. *Hair restoration: State of art. Semin Plast Surg* 2005;19:109-27.
9. Gandelman M. Technique for reconstruction of eyebrows and eyelashes. *Semin Plast Surg* 2005;19:153-8.