

Lip Augmentation Using Dermal Fascia Graft in Unilateral Cleft Lip Patient - A Case Report

Swarnav Patnaik¹, Abhitosh Debata², Sangram Patra³, Garima Poddar⁴, Monalisa Panda⁵

¹Reader, Department of Oral and Maxillo Facial Surgery, Hi-Tech Dental College, Bhubaneswar, Odisha, India, ²Senior Lecturer, Department of Oral and Maxillo Facial Surgery, Hi-Tech Dental College, Bhubaneswar, Odisha, India, ³Professor, Department of Oral and Maxillo Facial Surgery, Hi-Tech Dental College, Bhubaneswar, Odisha, India, ⁴Senior Consultant, Department of Dental and Oral and Maxillo Facial Surgery, Shanti Memorial Hospital, Cuttack, Odisha, India, ⁵Post Graduate Trainee, Kalinga Institute Of Dental Sciences, Bhubaneswar, Odisha, India

Abstract

Ideally, augmentation of lips is essentially done in patients with various congenital deformities, namely, cleft lip, trauma, and aging where lips undergo volume, length, color transformation, and decrease of structural components, leading to decreased pouting, vermilion inversion, and ptosis. There are various filling and non-filling lip augmentation techniques. However, no systematic review is currently available regarding the efficacy of one particular technique. Hence, this paper puts forth a case of lip augmentation in unilateral cleft lip patient done using dermal fascia graft at our hospital, thereby providing encouraging results. Local Anaesthesia (LA) with adrenaline injected into the subcutaneous tissue. Elliptical incision given in the iliac site (donor), skin excised, and dermal fascia harvested and grafted into the deformed lips (recipient). Vertical mattress sutures placed using 4-0 Vicryl and pressure dressing placed in donor and recipient sites. Post-operative result was highly encouraging rendering good longevity, low complication rate with optimal functional, and esthetic result. The success rate in lip augmentation can be determined by anthropometric measurements, patient satisfaction, and complication rates. This lip augmentation procedure using dermal fascia graft has good longevity and least possible complications, thereby helping the cosmetic surgeon to achieve consistent and reliably good results which are also simple and safe.

Key words: Dermal fascia graft, Lip augmentation, Unilateral cleft lip

INTRODUCTION

When images of the human body are shown to observers, attention to the face is much greater (73%) than to other anatomical parts (Massaro *et al.*, 2012). The correct identity recognition rate solely by viewing the lips is >98% (Liu *et al.*, 2012). In case of unilateral cleft lip patients, there is an absence of philtral ridge on the cleft side, vertical shortening of margins, thinning of vermilion on the cleft side, blurring of white roll in vicinity of the cleft, decreased volume, decreased length, and so on. Many techniques are currently being used for lip augmentation in cleft lip cases post lip repair, and the best technique is yet to be determined¹. Two groups of surgical procedures that assure labial

augmentation and vermilion eversion are currently enjoying increasing popularity, one without volume addition, i.e. non-filling procedures for lip augmentation (FPLAs), namely, the direct lip lift (DLL), in DLL (ILL), corner of the mouth lift, the VeY lip advancement, and the other employing volume addition using FPLAs, namely, implantation of synthetic biomaterials as silicone microdroplets, textured microparticles, polytetrafluoroethylene sheets or polymethylmethacrylate microspheres, implantation of semisynthetic fillers such as bovine collagen, grafting of autologous tissue such as fat, dermis, temporoparietal fascia, palmaris longus tendon, and the latissimus dorsi strip graft² but none of it is full proof with added disadvantages such as high cost, graft resorption, persistent numbness of lips, local flaps work well to improve the ratio between vermilion, and white roll (elongated upper lip), but the bulking effect is not retained as edema resolves. Implants, on the other hand, provide a permanent result but are prone to complications such as infection, migration, or extrusion³. Hence, we present a case of lip augmentation in unilateral cleft lip patient using dermal fascia graft which is reliable and long-standing⁴.

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Corresponding Author: Dr. Abhitosh Debata, Department of Oral and Maxillo Facial Surgery, Hi-Tech Dental College, Bhubaneswar, Odisha, India. Phone: +91-9438881188. E-mail: abhitosh.debata@gmail.com

CASE REPORT

A 18-year-old female patient reported to our hospital with a chief complaint of deformed upper lip and wanted to get it rectified. The patient informed us that she had previously undergone cleft lip repair 17 years back and the deformity of the lip is present since then as also confirmed by the bystanders of the patient. No other relevant medical or dental history was present. General physical examination was noncontributory.

Extraoral examination revealed vermilion notching which was centrally located, thereby rendering a “whistle deformity” appearance, decreased volume of upper lip, discrepancy in the heights of cupid bow with respect to cleft and noncleft sides, deficiency in the height of lateral vermilion on the cleft side, white roll malalignment, and a surgical scar extending from alar base to vermilion border of upper lip on the left side. The lateral view confirmed the decreased lip volume with retruded appearance. The intraoral examination was noncontributory to the chief complaint of the patient. After proper evaluation of the patient, we concluded with the diagnosis of secondary deformity of the upper lip in the left unilateral cleft lip and planned for a surgical intervention of augmenting the lip using dermal fascia graft. The patient underwent a pre-surgical preparation consisting of complete hemogram, serology, physician, and anesthetic evaluation and was posted for surgery (Figure 1).

Technique

Under general anesthesia, the patient was painted and draped. Local anesthesia was administered adequately in the iliac crest region to facilitate hydrodissection. Skin markings were done, elliptical incision is placed in the donor site, and skin is excised. Fascia lata is harvested. Excess fat is removed from the graft. The recipient site, i.e. the lip is prepared and markings done. Two vertical incisions are placed on either sides of the deformity and tunneling is done. The graft is then tunneled into place with the use of a mosquito clamp, providing a small excess, to prevent a “bow-string effect” when the patient smiles, and then, it is adjusted until the desired result is achieved. The operation ends with the final closure of the donor and the recipient sites using 4-0 Vicryl. The procedure went uneventful with no intraoperative complication. It lasted for the duration of 1 h and 34 min. The patient was thereafter extubated and shifted to post-operative ward for recovery (Figures 2 and 3).

Postoperatively, the patient was under routine antibiotic and analgesic coverage for 5 days. The patient was evaluated clinically by the surgeons and another independent observer on 1 month, 6 months, and 1 year post-surgery to check



Figure 1: Pre-operative photo showing whistle deformity



Figure 2: Harvesting of graft



Figure 3: Tunneling of lips for augmentation

for the functional and esthetic outcomes and also to look for complications (if any). Vertical height measurements were done at 3 locations: From white roll to inferior free margin at the non affected cupid's bow point (a), midline



Figure 4: Post-operative photo

on the upper lip (b), and affected cupid's bow point (c) in unilateral cleft lip at every visit and was compared to the pre-operative measurements and was found to be satisfactory. Two independent observers confirmed with the esthetic results and remarked it as "Good appearance."

Follow up Outcomes

No signs of dehiscence, infection, persistent numbness, and graft resorption were noted in the surgical sites (recipient and donor) on 1st, 6th, and 12th-month follow-ups. Hence, both sites were healthy with least donor-site morbidity. However, mild swelling and erythema were noted immediately postoperatively which resolved after 5 days of surgery.

Esthetically, the upper lip looked youthful, pouty, and voluptuous. No vermillion notching, asymmetry, and volume deficit was noted.

Functionally, the motion of upper lip was acceptable and well-formed upper lip was noted when she smiled or blew a whistle (Figure 4).

DISCUSSION

Cleft lip and palate is a congenital defect with an incidence rate of about 1:639 in India (Survey conducted by Christian Medical College, Vellore), and about 75% cases are unilateral clefts. There are various techniques for the management of unilateral cleft lips with Millard's rotation and advancement technique being most popular among all⁵. In our center,

we use Millard's rotation and advancement technique with Noordhoff modification⁶ to avoid vermillion notching post lip repair. Unfavorable results after lip repair such as whistle deformity and volume deficit might occur due to inadequate rotation of the medial flap, inversion of sutured edges, orbicularis oris marginalis muscle deficiency, and straight line scar contracture⁶. Improvement of this area has recently become the focus for new enhancement techniques, but no technique whether filling or non-filling is definite. The fact that many techniques are described for lip augmentation suggests that no single procedure is completely satisfactory. The ideal filler would be stable, remain soft, and maintain its original volume which is achieved in our technique⁷. Residual defects, namely, lip asymmetry, vermillion notching, and volume deficits were adequately addressed by us with this technique, thereby providing encouraging results. However, due to lack of control group and small sample size, it is difficult to analyze the versatility of this technique in comparison to other known techniques with the assertion.

CONCLUSION

A beautiful lip is one that is pleasing to the eye when viewed in isolation. Since the beginning of recorded time, man has considered the lips to be a key feature of facial appearance, beauty, and dynamics. With our experience, dermal fascia graft for lip augmentation in case of whistle deformity and volume deficit is one of the safest, reliable, and long-standing procedures that can be recommended to all cosmetic and cleft surgeons for the future use.

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