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Use of Autologous Fat Grafting as an Adjunct to FAMM Flap for Reconstruction of a Traumatic Lip Injury by Human Bite

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Case Report | **Abstract:** | **DOI:**

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Introduction: The lips have important functional and aesthetic roles in daily living[1]. They are the focal point of the lower face, with several aesthetic units intricately controlled by a complex series of muscles. Restoration of the whole spectrum makes reconstruction of the lip especially challenging. ***Case Presentation:*** A 25 years old female presented with a severe tissue defect on her upper lip and left angle of mouth to Japan East West Medical College Hospital, Dhaka. She explained that 1 day back she had been involved in domestic violence and her husband had bitten her on lip. An orofacial examination revealed as Lackmann's classification of facial bite wounds type IIIa[2]. After a proper wound excision, lip defect was covered with a Facial Artery Musculomucosal (FAMM) flap in the first stage. Oral commissure reconstruction and scar revision was done after 2 weeks as second stage, to correct macrostomia and restoration of oral competence. Autologous fat graft was performed to ensure adequate volume enhancement of the newly reconstructed lip as the third and completion stage to achieve the final aesthetic goal and patient satisfaction. ***Conclusions:*** Patient satisfaction is a whole spectrum which encompass both functional and aesthetic restoration. Therefore, aesthetic adjunct procedures may play an important role in reconstructive surgeries, especially in severe deformities.

Keywords: Autologous fat grafting.

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BACKGROUND

The lips are the focal point of the lower face, with several aesthetic units intricately controlled by a complex series of muscles. Specially in case of human bites, the size and severity of the injuries vary, ranging from small lacerations, punctures or cuts to total avulsion and loss of relatively large chunks of tissue therefore comprise a consequence social and psychological effects[3].

CASE PRESENTATION

A 25 years old female presented with a severe tissue defect on her upper lip and left angle of mouth to Japan East West Medical College Hospital, Dhaka. She explained that 1 day back she had been involved in domestic violence and her husband had bitten her on lip.

An orofacial examination revealed as Lackmann's classification of facial bite wounds type IIIa; defect on left lateral one-third of upper lip along with commissure. Vermilion reconstruction was performed after a proper wound excision, followed by coverage with an inferiorly based Facial Artery Musculo Mucosal (FAMM) flap in the first stage [Figure 1: A, B].

After two weeks, although the FAMM flap was able to cover the lip defect, there was macrostomia and oral incompetence to liquids. To correct the above-mentioned functional deformity a second stage reconstructive surgery was planned constituting Oral commissure myoplasty and scar revision [Figure 1: B, C].

Figure 1: A. Post-traumatic upper lip defect, B. Coverage of lip defect with FAMM flap (7th POD) C. 6 months after 2 staged reconstructive surgery (Volume deficit at the left lateral third of upper lip)

Inspite of restoration of functional deformity of the lip and mouth, there was a certain degree of dissatisfaction of the patient. Because of deficiency of adequate fatty tissue below FAMM flap, there was a noticeable volume deficit at the left lateral third of the upper lip. An autologous fat graft was performed to ensure adequate volume enhancement of the newly reconstructed lip as the third and completion stage to achieve the final aesthetic goal and patient satisfaction[4] [Figure 2: A, B].

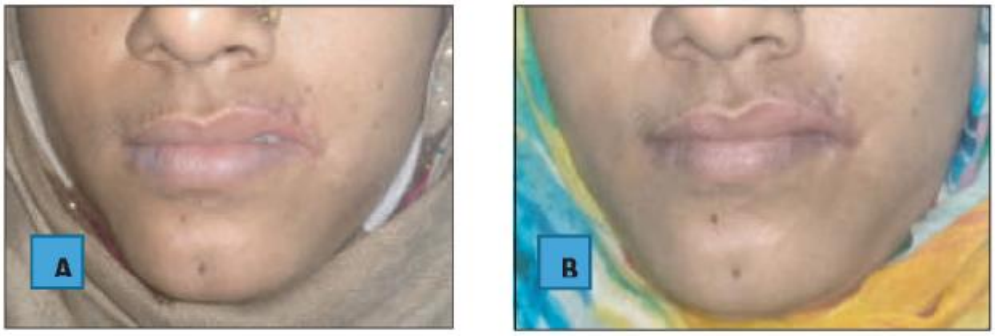

Figure 2: A. 6 Months Post-reconstructive Volume deficit at the left lateral third of upper lip, B. 2 months after autologous fat graft

DISCUSSION

Lip reconstruction is driven by restoration or preservation of function and aesthetics[2]. The lips have both aesthetic and functional features that serve to provide recognizable individualized beauty, emotional cues, sensual interactions, speech abilities, and oral continence for nutrition. The facial artery musculo-mucosal (FAMM) flap, initially described by Pribaz et al,[5] is a versatile flap, useful for covering of a wide variety of Oro-nasal mucosal defects including lips[6]. On the other hand, autologous fat transfer to the midface has definite long-term volume augmentation results[7]. Adipose tissue, actually, is the closest to the ideal filler because it is readily available; easily obtainable, with low donor or site morbidity; repeatable; inexpensive; versatile; and biocompatible[8]. A sequential application of both the methods ensured a satisfactory recovery from a complex lip trauma. There is an abundance of literature supporting the efficacy of fat grafting in both aesthetic and reconstructive cases. Recent studies have shown the utility of adipose-derived stem cells in the improvement of wound healing, describing their ability to regenerate soft tissues and their remodeling capacity provided by their unique cytokine and growth factor profiles[9]. In plastic surgery, lipofilling is widely used in breast augmentation and reconstruction[10-13] and in volume and contour deformities of the trunk and lower limbs[14-16]. Fat grafts have an important role in the treatment of facial hemiatrophy and lipodystrophy, in recontouring and rejuvenation of the aging face and the hands, in the treatment of depressed or altered scars. It is this regenerative capacity that is of particular interest also in chronic wound, including burns and ulcers wound therapy[17].

CONCLUSION

As the lips have important functional and aesthetic roles in daily living[1], correction must be done, addressing both factors making reconstruction of the lip especially challenging. Therefore, aesthetic adjunct procedures may play an important role in reconstructive surgeries specially in complex deformities.

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