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Upper lip reconstruction using a pedicle superficial temporal artery flap

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ABSTRACT

INTRODUCTION: The hair-bearing superficial temporal artery free flap has been used in men for total upper lip reconstruction. In this paper we present a case of a partial upper lip defect in a man that was reconstructed with a pedicle superficial temporal artery flap.

PRESENTATION OF CASE: Following a car accident, a 35-year old man sustained a partial upper defect. The defect included the entire “outer lamella” (i.e. the skin and red lip) of the right hemi-lip as well as the outer part of the muscle (i.e. partial defect of the middle lamella). A pedicle superficial temporal artery flap was raised and utilized to reconstruct the upper lip defect. There were no post-operative complications. The cosmetic and functional outcomes were excellent.

DISCUSSION: The hair-bearing pedicle superficial temporal artery flap is commonly used for eye-brow and beard reconstruction. Free superficial temporal artery flaps have also been utilized to reconstruct total upper lip defects. For the first time in the literature, our report introduces the use of the pedicle flap in partial upper lip defects.

CONCLUSION: We demonstrate that the pedicle flap is much simpler than the free flap and is adequate for reconstruction of partial upper lip defects. We also demonstrate a good cosmetic and functional outcome; and highlight several technical points to ensure a satisfactory outcome.

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1. Introduction

The hair-bearing superficial temporal artery free flap has been used in men for total upper lip reconstruction [1,2]. In this paper we present a case of a partial upper lip defect in a man that was reconstructed with a pedicle superficial temporal artery flap. We demonstrate that the pedicle flap is much simpler than the free flap and is adequate for reconstruction of partial upper lip defects. We also demonstrate a good cosmetic and functional outcome; and highlight several technical points to ensure a satisfactory outcome. No similar cases have been described or reported in the literature. The work has been reported in line with the SCARE criteria [3].

2. Case report

Following a car accident, a 35-year old man sustained multiple facial lacerations as well as partial upper and lower lip defects (Fig. 1). The upper lip defect included the entire “outer lamella” (i.e. the skin and red lip) of the right hemi-lip as well as the outer part of the muscle (i.e. partial defect of the middle lamella). The

inner lamella (inner mucosal surface) was intact except at the central tubercle of the lip which was completely lost (full-thickness); exposing the central incisors. The lower lip defect included a 3-cm defect of the red lip as well as a partial muscle defect adjacent to the right commissure (Fig. 1). The lacerations were sutured at a local hospital and the patient was transferred to our hospital 5 days after the injury. A pedicle superficial temporal artery flap was raised and utilized to reconstruct the upper lip defect (Fig. 2). The lower edge of the flap was sutured to the mucosal edge of the lip. No attempt was made to reconstruct the red lip of the upper lip. The donor site in the scalp was closed by scalp advancement. The flap was divided 3 weeks later. A V-Y mucosal advancement flap was utilized to reconstruct the red lip defect of the lower lip. There were no-post operative complications. The patient was followed up for 6 months after surgery and the cosmetic and functional outcomes were excellent (Figs. 3 & 4).

3. Discussion

The hair-bearing pedicle superficial temporal artery flap is commonly used for eye-brow and beard reconstruction [4–6]. Free superficial temporal artery flaps have also been utilized to reconstruct total upper lip defects [1,2]. Our report introduces the use of the pedicle flap in partial upper lip defects. We also demonstrate

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Fig. 1. The injury.



Fig. 2. The raised pedicle superficial temporal artery flap.

a good cosmetic and functional outcome. The main advantage of pedicle flaps is that they are much simpler than free flaps. However, they usually require two stages for completion.

Several technical points should be addressed when using the pedicle superficial temporal artery flap for partial upper lip defects. The flap is raised based on the ipsilateral superficial temporal vessels. The flap length should be adequate and hence a template must be used during flap design. Using a doppler to identify the course of the superficial temporal blood vessels will help design and orient the flap. Care should be taken during inseting of the flap to ensure that the direction of the hair is downwards to match the direction of the growth of the normal moustache hair. The red lip

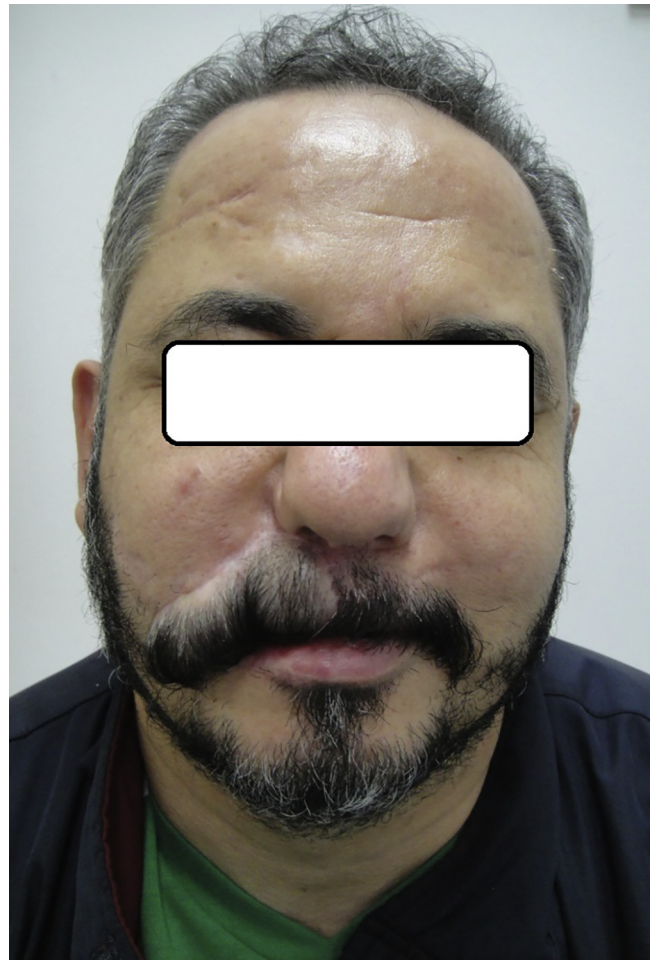


Fig. 3. The cosmetic outcome at 6 months.

was not reconstructed in our case and this did not affect function or cosmesis. However, the patient had to let his hair grow long enough to 'hide' the missing red lip (Fig. 3 and 4). The patient also had to adjust the hair colour mismatch between the scalp-reconstructed and the normal hemi-moustaches by dyeing the entire moustache. We believe that attention to all these technical points is essential to ensure a successful outcome.

4. Conclusion

We demonstrate that the pedicle flap is much simpler than the free flap and is adequate for reconstruction of partial upper lip defects. We also demonstrate a good cosmetic and functional outcome; and highlight several technical points to ensure a satisfactory outcome.

Conflicts of interest

None.

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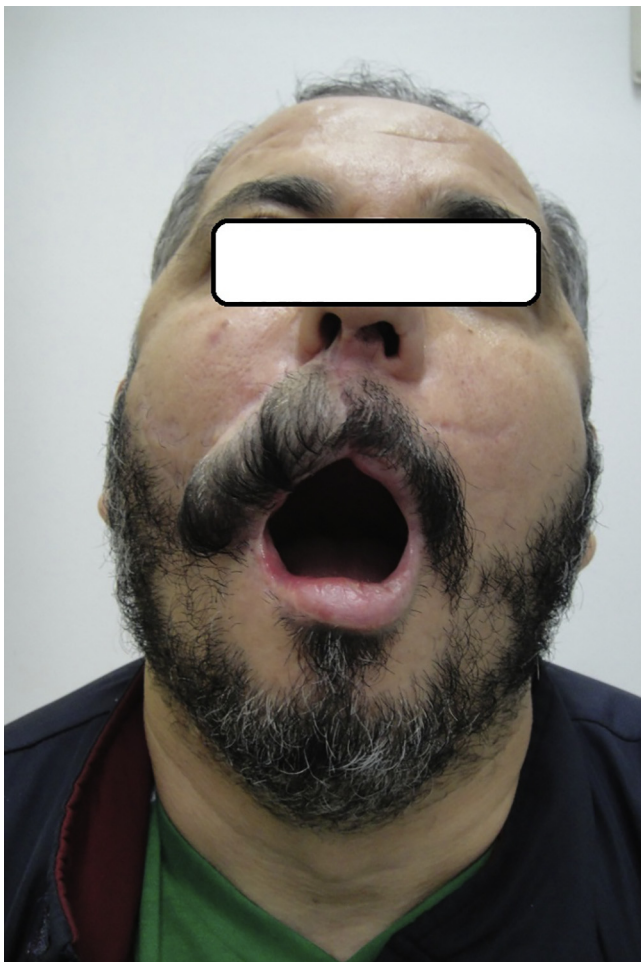


Fig. 4. The functional outcome at 6 months.

Author contribution

Both authors contributed significantly and in agreement with the content of the manuscript. The senior author performed the surgery. Both authors participated in the literature review, data collection and writing of the final draft.

Registration of research studies

Not relevant here.

Guarantor

M M Al-Qattan.

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Ethical approval

The study was approved by the research committee, National Hospital (Care), Riyadh, Saudi Arabia.

Consent

Written informed consent was obtained from the patient for publication of this case report. A copy of the written consent is available for review by Editor-In-Chief of this journal on request.

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