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Case Report

Reconstruction of Buccal Mucosa, Upper and Lower Lip Defect Using Free Radial Forearm Flap with Palmaris Longus Tendon: A Case Presentation

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Abstract

Introduction:
Advanced lip carcinomas can invade adjacent structures. Performing surgery for these cancers will lead to defects in this anatomically and functionally important area and will cause post-op difficulties such as drooling, speech alterations and aesthetic considerations, if not properly managed.

Case Report:
In this study, we will introduce a radial forearm free flap with palmaris longus tendon to reconstruct a defect of a large lower lip carcinoma. Our patients was a male in the 7th decade of life with an advanced lower lip carcinoma invading the full thickness of the buccal mucosa, left commissure and the left third of the upper lip. Resection was performed with adequate margins; checked by frozen sections and radical modified neck dissection was also performed on the left side. Free radial forearm flap with palmaris longus tendon was harvested and anastomosed in the neck. Four months after surgery commissurroplasty was done and the flap volume reduced

Conclusion:
The radial forearm free flap with palmaris longus tendon provides a good functional lip with a reasonable aesthetics in our patient. The patient was satisfied with the result and there were no functional complaints such as drooling reported by him. We think that this flap could be a flap of choice for reconstruction of the large, full thickness lip defects.

Key words:
Commissurroplasty, Free tissue flap, Lip neoplasms, Palmaris longus tendon, Radial forearm

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Introduction

Advanced lip carcinomas can invade adjacent structures. Performing surgery for these cancers will lead to defects in this anatomically and functionally important area and will cause post-op difficulties such as drooling, speech alterations and aesthetic considerations, if not properly managed (1).

Due to these considerations, reconstructive choices have been a subject of continuous evolution (2). Introduction of free flaps has changed head and neck reconstruction options available to the surgeons.

Radial forearm free flap uses the forearm skin and the geometry of its vessels, relative ease of harvest and the adjacent structures available, makes it a valuable option to be considered for lip defects reconstruction.

In this study, we will introduce a radial forearm free flap with palmaris longus tendon to reconstruct the defect of a large lower lip carcinoma.

Case Report

Our patient was a male in the 7th decade of life with an advanced lower lip carcinoma invading the full thickness of the buccal mucosa, left commissure and the left third of the upper lip (Fig 1). Physical examination and Computed Tomography scan at the time of referral was negative for metastases.

Fig 1: Lip lesion involving lower and upper lips, extending intraorally to the buccal mucosa

Considering the general condition of our patient, we decided to perform surgery and due to the relatively large defect, we asked the plastic surgery team to harvest free radial forearm flap for reconstruction. The left upper limb was tested and allen's test was also checked.

Resection was performed with adequate margins (Fig 2); checked by frozen sections and radical modified neck dissection was also performed on the left side.

Fig 2: The defect after resection involves 3/4 of the lower lip, 1/4 of the upper lip and 3 cm of the buccal mucosa with the left commissure

Free radial forearm flap with palmaris longus tendon was harvested and anastomosed to the facial artery and vein in the neck. Flap inseting and palmaris longus suspension was done with the skin of the flap used for the outer skin defect. The large mucosal defect was covered with split thickness skin graft over the flap.

Perioperative period was without any major complications except for a relative erythema and edema of the distal parts of the flap which recovered soon.

Margins were reported cancer free and neck dissection specimen was also negative; therefore no adjuvant radiotherapy was done.

Four months after surgery commissurroplasty performed and the flap volume reduced (Fig 3). During follow-up the patient has a relatively good oral sphinctric control and a good inferior labial sulcus.

Fig 3: The result after the surgery and flap reduction

Discussion

Lip reconstruction, has always been a challenge for otolaryngologists and plastic surgeons, especially in the cases with large, full thickness defects. The goals of reconstruction are both functional and aesthetic (1).

Defects less than one third of the lip in size can be closed primarily, whereas larger defects need a reconstruction via a local flap (2). Moderate to large defects, especially the ones involving an oral commissure, often require free flap reconstruction (3,4).

Radial forearm free flap with palmaris longus tendon has been first described by Sakai et al (5) as a new technique for reconstruction of total lip and chin defects, although it has been previously described in Chinese literature in 1978 (6). This flap allows functional reconstruction of extensive defects of lip and cheek in one stage (3). Unique advantages of this flap include a reasonable color match between the flap and the surrounding facial skin, its long pedicle, appropriate thickness and a good blood supply (2,3).

There are few case series on applying radial forearm free flap for lip defects reconstruction. Jeng et al. has used this method for reconstruction of twelve patients with lower lip cancer, buccal cancer and gum cancer with lip extension (3). They have recommended this method for patients with large lower lip defects and they concluded that this method offers a functional oral sphincter.

Carroll et al. have also applied this method on ten patients with total lip and chin defects due to cancer (2). All patients were satisfied and the oral competence was achieved. There were no complaints of drooling among patients.

Daya and colleges also performed this method on five patients and they also achieved good results (6).

In our study, our patient was also satisfied with the result of the operation. He did not complain of drooling and the oral competence in speech, articulation and mastication was acceptable.

The flap was mildly edematous and erythematous in early postop period, which resolved in days. This has also been reported by carroll et al. and sadove et al. (2,4).

He also underwent a commisuroplasty about four months after the first operation to reduce the bulk of the flap which has also been reported by others (3,4).

Conclusion

The radial forearm free flap with palmaris longus tendon provides a good functional lip with a reasonable aesthetics in our patient. The patient was satisfied with the result and there were no functional complaint such as drooling reported by him. We think that this flap could be a flap of choice for reconstruction of large, full thickness lip defects.

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