CASE REPORT

DOUBLE RHOMBOID FLAP FOR SINGLE STAGE RECONSTRUCTION OF DEFECTS OF THE BUCCAL COMMISSURE- A CASE REPORT

Dr. Subhasish Burman[1], Prof. Dr. S.K. Majumdar[2], Dr. Aritra Chatterjee[3]
Dr. Soumen Mondal[3], Dr. Chandan Sahana[4], Dr. Mohsina Hussain[5]

ABSTRACT

Aesthetic closure of defects of the buccal commissure, after ablative surgeries is a daunting task for Oral and Maxillofacial Surgeons. The double rhomboidal flap is often used as a reconstructive option in such cases owing to its simplicity and association with fewer number of complications. We describe a case of a 60 year old male patient who presented with a histologically proven verrucous carcinoma of the left buccal mucosa, extending to the left oral commissure. Wide local excision with adequate safe margins of the lesion was done and the resulting surgical defect was closed using an ipsilateral double opposing rhomboidal flap. The final outcome was satisfactory in terms of both aesthetics and preservation of function.

KEY WORDS

verrucous carcinoma, double rhomboid flap, local flap.

ABOUT THE AUTHORS

1. Associate Professor 2. Professor and Head
3. Clinical Tutor 4. Dental Surgeon 5. Post Graduate Trainee
Department of Oral and Maxillofacial Surgery
Dr. R Ahmed Dental College and Hospital, Kolkata.

Corresponding Author
Dr. Mohsina Hussain
Post Graduate Trainee, Department of Oral and Maxillofacial Surgery, Dr. R Ahmed Dental College and Hospital, Kolkata.
Contact no- +919073975998/ +919614390918
e-mail address- mohsina.hussain.mh@gmail.com

INTRODUCTION

Verrucous carcinoma, first described by Ackerman in 1948, is a low-grade malignancy, presenting with an exophytic verrucoid or cauliflower like appearance and has the distinctive features of slow growth, local invasiveness, low degree of dysplasia, low metastatic potential and a good prognosis[1].The most common site of occurence in the oral cavity is the buccal mucosa, which when left untreated may involve the buccal commissure, the lips and may also extend upto the skin of the face. Any surgery involving the buccal commissure is a challenging procedure as it requires special attention concerning the preservation of facial architecture and functional properties. Even a minute deformity may result in facial asymmetry, speech and oral incontinence. The double rhomboid flap is a technically simple, single stage procedure, can be easily performed under local anaesthesia and is a viable option for reconstruction of surgical defects of the buccal commissure.

CASE REPORT

A 60 year old man presented to us with an exophytic cauliflower like growth on the left buccal mucosa, extending to the left buccal mucosa and lower lip.(Fig 1) On examination, the growth was well circumscribed, measuring approximately 1.5cm x 2cm in greatest dimension, no induration, had a rough surface texture and tender on palpation. Cervical lymph nodes were not palpable. Incisional biopsy revealed it to be a case of verrucous carcinoma. Computed tomography of face and neck was performed to rule out the presence of metastatic cervical lymph nodes radiographically. After clinico-radiological evaluation, he was taken up for radical excision of the lesion under general anaesthesia. A double rhomboidal flap was considered for closure of the resulting surgical defect (Fig 4). Radical excision was performed, respecting the limits of a previously defined triangular area, in which the lesion was centered. This triangular area included the whole lesion and the conventional safe margins. At the same time, two rhomboidal donor areas were marked on the cheek by two lines of equal length, placed parallel to each

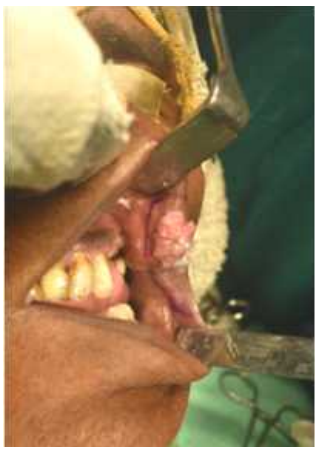

Fig 1- Pre Operative Picture Of The Lesion

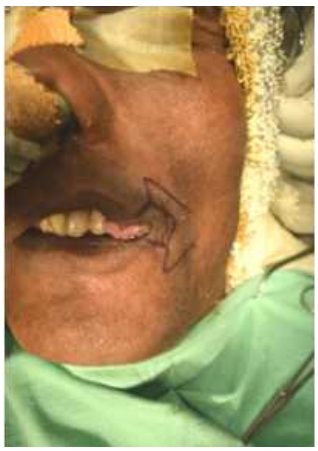

Fig 2- Flap Design

Fig 3- Excision Of The Lesion

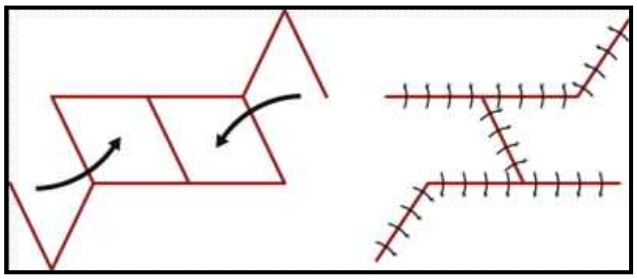

Fig 4- Geometry Of The Double Rhomboid Flap

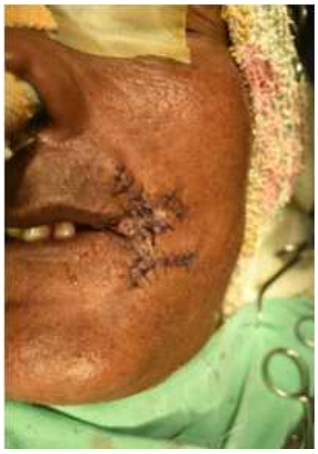

Fig 5-Closure

Fig 6- One Month Follow Up

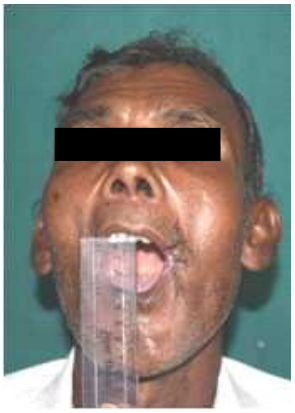

Fig 7- Post Operative Mouth Opening

Fig 8- Post Operative Retention Of Function (Blowing)

triangle side respecting a 2cm intervalic between them (Fig 2). Adequate haemostasis was achieved by the use of electrocautery after total excision of the lesion (Fig 3). Finally, both the limbs of the flap were rotated towards the surgical defect and meticulously sutured to each other, hence resulting in the formation of a new buccal commissure. Careful approximation of the rest of the incised areas of the flap was done primarily with 5-0 prolene (Fig 5). The postoperative course was uneventful, and oral diet was started on the 3rd post operative day. Sutures were removed on the 7th postoperative day. The patient was followed up for 3 months and the final aesthetic result was very satisfactory with perseverance of oral competence and lip function.

DISCUSSION

One of the greatest challenges of excision in the face for Oral and Maxillofacial surgeons is its proximity to vital structures such as the eyes, nose, ears, and mouth. A perfect balance must exist between the need for wide local excision and reconstruction with both functional and aesthetic considerations[2].

Simple closure may yield unsatisfactory and unaesthetic results because of skin tension. In the facial skin, local flaps are often an ideal method of reconstruction. Although defect size is a limiting factor, similar texture, pliability and color match of a local flap favor its use[3]. Alexander Alexandrovich Limberg defined the rhomboid flap in 1963[4].A rhomboid flap has equal edges with opposing angles of 120° and 60°. Any defect that can be projected in a rhomboidal shape can be reconstructed with a Limberg flap. The transposition of two symmetric rhomboidal flaps obtained in opposing donor skin areas allows the annulment of local tension forces, hence minimising the risk of local deformation, particularly the distortion of the oral commissure[5]. The main advantage of this reconstructive technique is avoiding cosmetically unacceptable lip asymmetries and oral sphincter dysfunction and hence a double rhomboid flap is a viable option for reconstruction of defects inclusive of the buccal comissure. In the described case, despite originating three parallel scars disposed across the cheek and mandibular areas, we consider that the reasonable cosmetic result is highly compensated by the structural and functional benefit concerning the lip and perioral architecture. The bilobed flap design is advantageous over the single flap design in that the tension and stress on the skin can be distributed across two flaps rather than across the single flap[6].However, a standard bilobed flap has the disadvantage of pin-cushioning that often develops as a result of the curvilinear flaps; the incidence of which is reported to be 5%[7].

Neck dissection was not performed in the described case, the lesion being a histopathologically proven case of Verrucous carcinoma which is a non metastasising variant of squamous cell carcinoma and because of the absence of cervical lymph nodes in both clinical and radiological evaluation. Radical excision of the lesion and reconstruction with double rhomboid flap gave excellent cosmetic and functional results (Fig 6). An aesthetically pleasant continuation of vermilion–skin and a symmetrical appearance of the neocommissure was obtained. The patient had adequate mouth opening (Fig 7), a competent oral commissure without any lateral drooling with retention of function, such as blowing (Fig 8).

CONCLUSION

The double rhomboidal flap is a technique friendly, single stage and quick method of reconstruction of small to moderately sized defects and production of a symmetrical neocomissure with minimal scarring. It should hence be more widely employed for reconstruction of such defects for superior aesthetic and functional results.

REFERENCES

1) Schwartz RA. Verrucous carcinoma of the skin and mucosa. J Am Acad Dermatol. 1995;32:1-21.

2) Bogle M, Kelly P, Shenaq J, Friedman J, Evans GR (2001) The role of soft tissue reconstruction after melanoma resection in the head and neck. Head Neck 23:8 [PubMed]

3) Fee WE, Jr, Gunter JP, Carder HM. Rhomboid flap principles and common variations. Laryngoscope. 1976;86:1706–11. [PubMed] [Google Scholar]

4) Limberg AA. Modern trends in plastic surgery. Design of local flaps. Mod Trends Plast Surg. 1966;2:38–61. [PubMed] [Google Scholar]

5) Wu HL, Le SJ, Zheng SS. Double opposing-rhomboid flaps for closure of a circular facial defect in a special position. Aesthetic Plast Surg. 2009;33:523-6. [Links]

6) Esser JF. Stalked local rhinoplasty with bilobed flap, cover the secondary defect from the first lobe by the secondary lobe. German for surgery. 1918;143:385. [Google Scholar]

7) Moy RL, Grossfeld JS, Baum M, Rivlin D, Eremia S. Reconstruction of the nose utilizing a bilobed flap. Int J Dermatol. 1994;33:657– 60. [PubMed] [Google Scholar]