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Case Report

Gillies fan flap repair for near total, full thickness defect of lower lip

Beena Aggarwal, Hitesh Kumar*, Prashant Sharma, Manish Kaushik, Saurabh

Department of General Surgery, Guru Gobind Singh Government hospital, New Delhi, India

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***Correspondence:**
Dr. Hitesh Kumar,
E-mail: hiteshkundu@gmail.com

ABSTRACT

Lip is one of the commonest sites of occurrence of squamous cell carcinoma in head and neck region. 90 % of the cases involve lower lip. Higher cumulative exposure of ultraviolet radiations by sun is an attributed risk factor. A large defect left after surgical excision can be covered by various methods. Myo-neurovascular flap used in Gillies fan flap technique is considered better functionally and aesthetically. We report a 70-year-old gentleman who presented with large carcinomatous growth occupying more than 3/4th of lower lip, only leaving commisures free. Edge wedge biopsy revealed it to be squamous cell carcinoma. Excision of tumor was done along with bilateral supra-omohyoid neck dissection and Gillies fan flap repair. Modified Gillies fan flap repair is one of the various techniques which serves to reconstruct large lower lip defects maintaining the vascularity, nerve supply of lip and gives functional, sensate and aesthetic results

Keywords: Gillies fan flap, squamous cell carcinoma lip, Supra-omohyoid neck dissection

INTRODUCTION

H. D. Gillies was the first one to describe the technique in 1957 for lower lip.[1] Lip is one of the commonest sites of occurrence of malignancy in head and neck region. 90 % of the cases involve lower lip out of them 95% are squamous cell carcinoma whereas basal cell carcinoma more commonly affects upper lip.[2] Higher cumulative exposure of ultraviolet radiations by sun is an attributed risk factor.[2,3] Squamous cell carcinomas of lip is more commonly seen in males. Surgical excision with negative margins is the procedure of choice.[4] The main challenge lies in reconstruction of the defect caused by surgical excision because of functional and aesthetic importance. Lower lip defects can be divided into three groups: involving up to 1/3rd, 1/3rd to 2/3rd and more than 2/3rd of the length of lower lip.[5] The Gillies fan flap used in its classical form have certain unsatisfactory aspects although most of them have been eliminated in its bilateral neuro-vascular fan flap modification described by Karapandzic. Modified Gillies fan flap repair was chosen in our case for reconstruction of lower lip defect and good clinical, functional and aesthetic outcome was obtained.[6]

CASE REPORT

A 70-year-old gentleman (Figure 1) presented in out-patient department with a ulcero-proliferative growth of lower lip for last 4 year. The growth was gradually increasing in size although not posing any difficulty in feeding and speech. He was a smoker for last 30 years with a history of 20 packs-year and occasionally consumes alcohol. No history of sudden weight loss and decreased appetite. On examination he was normally built but has poor dentition and poor oral hygiene. The growth was occupying almost entire lower lip and measuring 4x3 Cms leaving only commisures intact bilaterally. Growth was more than 1 cm away from gingivobuccal recess.

Figure 1: Preoperative image of patient showing ulcero-proliferative growth on lower lip.

Submental group of lymph nodes were not palpable clinically, but bilateral submandibular lymph nodes were multiple discrete and enlarged up to size of 1.5 cm. Rest all lymph nodes were clinically insignificant.

Figure 2: Intra-operative image showing gingivo-buccal recess and flap markings.

Edge wedge biopsy from the lesion came out to be well differentiated squamous cell carcinoma. FNAC from enlarged lymph nodes was negative. CECT face and neck was done to know the extent of tumor and other lymph nodes.

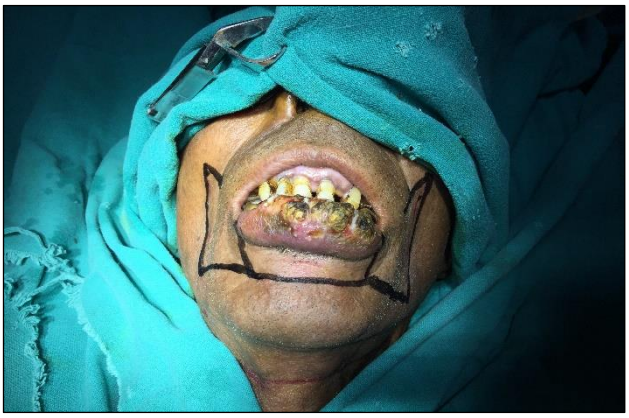

Figure 3: Markings for Gillies fan flap.

The patient was planned for radical surgical excision of the lesion along with bilateral supra-omohyoid neck dissection followed by bilateral modified Gilles fan flap reconstruction of the lower lip.

Figure 4: Image showing bilateral neurovascular pedicle marked with silk loop.

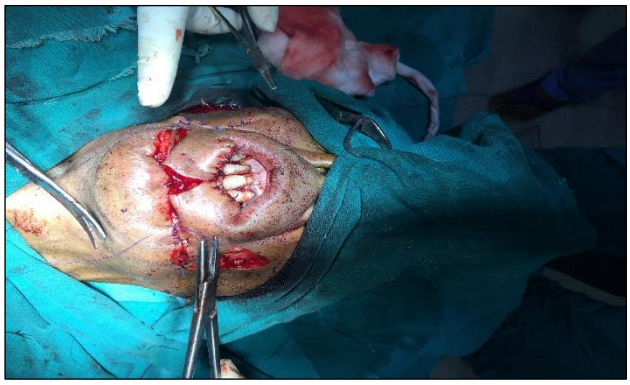

Figure 5: Intra-operative image showing closure technique.

The technique consists of dividing the defect into two small squares of almost equal size. The vertical limb of the flap is twice the length of the square and breadth of the flap is equal to the side of the square. The upper margin of the flap is made similar to the classic Gillies fan flap.

Figure 6: Image of neck dissection Right side.

Figure 7: Immediate post-operative appearance after closure.

Figure 8: Postoperative day 7.

Figure 9: Postoperative day 7.

The marking is done immediately lateral to the defect as shown in figure 2,3 the importance of these dimensions become apparent while closure. The incisions were deepened carefully preserving orbicularis oris muscle and its neurovascular bundle (Figure 4). Closure was done in three layers. The procedure was combined with bilateral supra-omohyoid neck dissection. (Figure 5, 6 and 7).

The patient was started with RT feed next day. Neck drains were removed on 3rd post-op day. Daily saline and antiseptic gargles were prescribed. Sutures were removed after 8th post-op day.

Histopathological report shows tumor free margins all around with all removed lymph nodes and both salivary glands free from malignancy. Figure 8, 9 shows the post-operative recovery and flap uptake.

DISCUSSION

Reconstruction following a radical surgery of face is a challenging task. In case of lip the challenge increases as there is functional importance besides aesthetics. Lips are the focal point for communication, expression, and maintaining competence of the oral cavity. There are many factors that need consideration including size of the defect, adjacent tissue availability, involvement of commisures. In an algorithm outlined by Aucher et al size of the defect can be sub classified into up to one third of the lip, one third to two thirds, and more than two thirds of the lip this classification is helpful in choosing the ideal method of reconstruction.[5] There are various described methods of closure for defects more than 2/3rd like Karapandzic flap, Bernard burrow method and Gillies fan flap where adequate adjacent tissue is present.[7,8] When there is insufficient adjacent tissue, a free flap can be employed.[2,4]

The advantage of modified Gillies method is that during dissection of flap, the labial arteries and buccal motor nerve branches are identified and preserved, and we get a fully innervated and sensate flap and that too in a single staged procedure. The neurovascular supply of the flap is preserved. The sensations are preserved by preserving mental nerve and motor functions by preserving marginal mandibular branch of facial nerve.[6] The main disadvantage is reduced size of oral orifice which may be avoided by proper mobilization of flaps and can even be corrected later with commisuroplasty.[9] Over 8 weeks, recovery of both sensory and motor function takes place in nearly all patients.[10] In cases of double fan flaps deficits are more obvious especially in early post-operative period, patient may have drooling of saliva and difficulty in speech. All these symptoms improve with time.[10]

CONCLUSION

Modified Gillies fan flap repair is one of the various techniques which serves to reconstruct large lower lip defects maintaining the vascularity, nerve supply of lip and gives functional, sensate and aesthetic results.

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