

CASE REPORT

Lip Reconstruction Using Radial Forearm Freeflap After Radical Excision of Squamous Cell Carcinoma: a Case Report

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ABSTRACT

Introduction: The main modality therapy for squamous cell carcinoma in head and neck area is by performing a wide surgical excision. Post-excision reconstructive surgery is essential to restore the functions and aesthetics. In general, reconstruction is performed using local flap. However, in this case, radial forearm free flap reconstruction was used after a wide excision of lip squamous cell carcinoma to result in more satisfying functions and aesthetics.

Case Report: A 41 year-old female was diagnosed with squamous cell carcinoma (T3N0M0) found in her lower lip. After a wide surgical excision, a radial forearm free flap was performed for reconstruction because local flaps are insufficient. Then followed by refinement flap operation in three stages. The result showed that the patient had an esthetically satisfying lip without any facial morbidity

Discussion: Post-excision reconstructive surgery in lip areas is a choice requiring a special attention to the functions and esthetics. Radial forearm free flap does not require a tissue donor from the face areas that results in a minimum facial morbidity. The other benefits include adequate tissue thickness, minimum contracture, and similar skin color. A further refinement flap operation is greatly required to complete the reconstruction process for more satisfying functions and esthetics.

Conclusion: Radial forearm free flap is one best post-wide excision reconstruction choice in lips areas.

Keywords: squamous cell carcinoma, radial forearm free flap.

ABSTRAK

Pendahuluan: Modalitas utama untuk karsinoma sel skuamosa di daerah kepala dan leher adalah eksisi luas. Operasi rekonstruksi pasca eksisi luas sangat penting untuk mengembalikan fungsi dan estetika. Rekonstruksi umumnya dilakukan dengan flap lokal jarang menggunakan *free flap*. Sebaliknya pada kasus ini kami menggunakan teknik *free flap* dengan radial forearm untuk fungsi dan estetika yang baik.

Laporan Kasus: Seorang wanita umur 41 tahun dengan karsinoma sel skuamosa di bibir bagian bawah dengan staging T3N0M0. Setelah dilakukan operasi eksisi luas, rekonstruksi dilakukan dengan radial forearm free flap diikuti dengan operasi refinement flap dalam tiga tahap. Hasilnya pasien mendapatkan hasil estetika yang baik tanpa gangguan fungsi.

Diskusi: Pilihan operasi rekonstruksi pasca eksisi luas di daerah bibir harus memperhatikan fungsi dan estetika. Radial forearm free flap tidak membutuhkan donor jaringan dari daerah wajah sehingga morbiditas yang ditimbulkan minimal. Keuntungan lain adalah mendapatkan ketebalan jaringan yang cukup, kontraktur yang minimal dan warna kulit yang serupa. Operasi refinement flap lanjutan diperlukan untuk mendapatkan fungsi estetika yang baik.

Kesimpulan: Radial forearm freeflap adalah pilihan yang baik untuk rekonstruksi pasca eksisi luas di daerah bibir.

Kata Kunci: Karsinoma sel skuamosa, radial forearm free flap.

INTRODUCTION

Squamous cell carcinoma is a malignancy derived from epithelium tissue mostly found in lips areas (Dediol et al., 2008; Géraud et al., 2012; Hasson, 2008). The main modality for the squamous cell carcinoma therapy is by performing a wide surgical excision (Dediol et al., 2008; Géraud et al., 2012; Hasson, 2008; Thorne C. H., 2014). A wide excision is an action performed to remove the tumor and the surrounding healthy tissues limited by the tumor-free incision.

Lip is a unique anatomy organ with a skin found in its outer layer and internal mucosa in the form of transitional epithelium (Dediol et al., 2008; Hasson, 2008). A wide excision performed to squamous cell carcinoma may also remove the skin, muscle, and intraoral mucosa tissues (Alamani et al., 2014; Géraud et al., 2012; Thorne C. H., 2014). A post-wide excision lip reconstruction commonly uses a local (transverse, rotational) flap, such as Abbe flap, Stairchase flap, Gillies flap, and Bernard modification techniques

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Figure 1. Pre (left) and post (right) operation clinical image after excision and reconstruction



Figure 2. Clinical image before (left) and after (right) the refinement flap was conducted

(Alamani et al., 2014; Burusapat and Pitiseree, 2012; Hasson, 2008; Rena et al., 2014). In this case, we used free flap to reconstruct and prove that free flap is one best reconstruction choice especially for this case.

CASE REPORT

A 41-year-old woman with squamous cell carcinoma in her lower lip. A lump followed with ulcer was found at her lower lip for 5 months ago. The lump was getting bigger and easily to bled. From the physical examination, there was a lump in her left lateral commissure to middle of lower lip and quarter of her left upper lip, mobile to its base and the lymph nodes enlargement was not found.

She was planned to be reconstructed using radial forearm free flap with the donor from her left forearm. Donor preparation was made using Allen's test to make sure that the ulnar artery may filled in the left hand. A wide excision was performed using frozen section of tumor-free margin excision

After tumor-free margin excision, the defect was initially found in a two-thirds of lower lip and one-third of upper lip. Local flaps are insufficient because large size of defect. So, we choosed reconstruction using the radial forearm free flap.

Three months after the reconstruction, the flap was considered good, the mouth function to open and speak was also good, yet esthetically the flap was still bulky. The next step was to performed refinement flap to have better esthetical result. Refinement was performed by removing the sub-cutaneous thickness and making the anchoring to form a lip.

We followed 6 month after last operation

(refinement flap) and there was no complication found. Functionally, she can opened her mouth and spoke well. She satisfied with the obtained result.

DISCUSSION

The estimated global incidence of lip cancer in 2012 was 0.3 per 100,000 (0.4 in men and 0.2 in women) (Shield et al., 2017). The 5-year survival rate was found to be 82.1 %. Among the multiple prognostic factors, only age and disease stage had significant impact on survival ($p < 0,05$) (Ozturk et al., 2015).

The malignancy of lips areas may well managed when recognized earlier. Surgery is the main choice in resectable cases (Burusapat and Pitiseree, 2012). Wide excision with frozen section was performed to make sure that the tumor-free excision was locoregionally performed. In this case, wide excision was performed using frozen section of tumor-free margin excision and histologically the margin excision was free-tumor.

Lips have many functions related to face expressions, speaking, and eating. When the wide excision was performed on lips, the skin layers, muscles, and intraoral mucosa may also be removed. The purpose of such reconstruction in this case is to maximally maintain the functions and cosmetics (Rena et al., 2014).

The reconstruction choice may be in the form of Abbe's flap, Karapandzic's flap, Staircase's technique, Gillies Fan's flap and Bernard's techniques to do reconstruction on one-third of lower lip (Harris et al., 2012; Rena et al., 2014). However, in this case, we used free flap as the reconstruction choice although it was less frequently performed since the wide defect,

might be up to one-third of lower lip and one-third of upper lip.

We used radial forearm free flap since the defect was adequately covered with the forearm donor that many tissues were not wasted. The radial forearm flap is the preferred choice because of factors such as suitable thickness, good color match, long pedicle, and a reliable blood supply (Daya and Nair, 2009). One of radial forearm free flap's weaknesses is losing one superior extremity blood vessel that is radial artery. The impact of losing the radial artery may be prevented by performing a good Allen's test before operation to make sure that ulnar artery adequately bleeds all hands (Daya, 2010). The result of Allen's test in this case was considered good that it might be used as donor. To obtain a good esthetical result, the refinement flap was performed. In this case, the radial forearm free flap was successfully performed with satisfying result related to the esthetics (lip shape) and functions (speaking and opening the mouth).

CONCLUSION

Radial forearm free flap is one best reconstruction choice to deal with the lips squamous cell carcinoma.

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