

Surgical Treatment of Squamous Cell Carcinoma (SCC) of the Lip In Northern Iraq

Saadallah M. Alzacko

ABSTRACT:

BACKGROUND:

Lip cancer develops in the vermilion border of the lip. The great majority of these malignancies are squamous cell carcinoma (SCC). The primary treatment of these lesions is surgical resection. The management of the resulting defect remains a significant reconstructive challenge.

OBJECTIVE:

To provide information about the experience of surgical treatment of patients with squamous cell carcinoma (SCC) of the lip admitted to the plastic surgery unit, Mosul teaching hospital, between Mar. 1998 - Feb. 2008.

MATERIALS AND METHODS:

Case-series study. Plastic surgery unit, Mosul teaching hospital, during the period from Mar. 1998 - Feb. 2008. Sixty six patients were included; they were 51 men and 15 women. The age ranged between 15-90 years.

RESULTS:

Of 66 patients with squamous cell carcinoma of the lip, there were 51 men (77.3%) and 15 women (22.7%) , ranging in age from 15 to 90 years (mean 60.7 years) with the peak incidence at 60-70 years. Ulcer was the main presenting complaint. Lower lip was the commonest site in 61 patients (92.4%). Cervical lymph node metastases were found in 13 patients (19.7%) at the time of first presentation. Reconstruction of lip after excision was done by primary suture in 31 patients, by Estlander flap in 9 patients and by McGregor flap in 10 patients.

CONCLUSION:

Early diagnosis is essential and contributes to successful reconstructive surgery. Lip reconstruction in the form of primary repair, Estlander flap and McGregor flap were performed depending on the size and site of tumor.

KEYWORDS: squamous cell carcinoma, lip, estlander flap, mcgregor flap.

INTRODUCTION:

Squamous cell carcinoma (SCC) of the lip is a common pathology; it represents 20% of all cancers of the oral cavity ⁽¹⁾. The prominent location of the tumor usually allows early detection and curable treatment ⁽²⁾. Functional and cosmetic restoration of upper and lower lip defects can present a considerable challenge to the reconstructive surgeon. The upper and lower lips represent a distinct anatomic unit that is a major feature of the lower one third of the face, and they have great functional and aesthetic importance. Involvement of the lip has a great impact on the shape of the patient, especially in females. Therefore, early surgical treatment and applying the correct reconstructive procedure is essential. The objective of this paper is to present the experience of the plastic and reconstructive surgery unit of Mosul teaching hospital in the treatment of lip cancer.

Plastic Surgery Unit, Mosul Teaching Hospital,
Mosul, Iraq.

PATIENTS AND METHODS:

In this study, the clinical data of 66 patients with primary lip SCC who were treated between Mar. 1998 - Feb. 2008 in the department of plastic surgery are presented. Patients' data were collected concerning age, gender, location of the lesion on the lip, cervical metastasis at presentation, preoperative biopsy results, initial treatment and reconstruction type.

The surgical removal of a small tumor (<1 cm diam.) consisted of a simple V-excision or an excision in the form of a W or U. The tumor was removed with a 1 cm margin of healthy tissue. The defect was closed in 3 layers, consisting of muscle, mucosa and skin. A lip shave operation alone, was used in one patient, combined with a wedge excision. This patient had keratotic changes at the vermilion border. The Estlander flap was used for defects larger than 1/3 but smaller than 2/3 of the lip width. The McGregor flap was used in 10 patients with lower lip defects ranging from 1/3 to 2/3 of the lip width and in two of them bilateral flaps was used. The tumor was excised en block in the form of a rectangle. In 2 patients. with total or

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near total lower lip defect, reconstruction was achieved by bilateral McGregor flaps.

In 4 patients the primary operation was combined with a radical neck dissection because of the presence of palpable nodes. The malignant nature of the nodes has been previously verified by needle aspiration.

The results were assessed according to the mobility of the lips, symmetrical puckering of the lips, a tight lip seal and a regained outer profile.

RESULTS:

The ages varied from 15 to 90 years (mean: 60.7 years) (fig.1). There were 51 men (77.3%) and 15 women (22.7%). Tobacco smoking was identified in 47 cases (71.2%). In 45 cases (68.2%) an association was found between the disease and chronic sun exposure. The period of time between the appearance of the first symptom to the first visit of the plastic unit varied from 1 month to 5 years, the mean duration of symptoms was 16.1 months. The presenting symptom was the presence of ulcer on the lip in 89.4%, nodule in 9.1%, enlarged neck lymph nodes, in addition to the lip lesion, in 7.6% and fissure of lip in 1.5%. The tumor location was in the lower lip in 61 patients (92.4%) and the upper lip in 5 cases (7.6%). Cervical lymph node metastasis was found in 13 cases (19.7%) at time of first presentation and they developed in 16 patients (24.2%) after treatment. Distant metastasis was found only in 3 patients.

Out of 66 patients, 31 had about 1/3 of their lip width excised with the tumor, using wedge excision and primary suture. Relative microstomia was minor and z-plasty revision was done only in 9 patients. Wedge excision was done in all 5 cases of upper lip. The Estlander flap was used in 9 lower lip lesions larger than 1/3 of the lip width. The functional results were good. Two cases developed microstomia and low labial sulcus, causing drooling. There were 6 local recurrence in patients reconstructed by wedge excision and primary suture or Estlander operation.

After larger tumor resections where McGregor flap repair had been used there were 6 recurrences.

Radiotherapy was used in 16 patients as primary treatment, either because of advanced cancer of the lip or the patients unfit for operation, and for treatment of recurrent cancer of the lip.

DISCUSSION:

The most frequent age at presentation was between 60 and 69 years (fig.1). The age is consistent with other studies^(1,3,4). Patients with xeroderma pigmentosum are highly susceptible to skin squamous cell carcinoma⁽⁵⁾. This explains the occurrence of lip squamous cells carcinoma in the one child in this study.

The fact that lip cancer affects many more men than women may be observed in other studies from western countries^(3,5,6,7,8,9). This is attributed to the more male exposure to solar radiation and tobacco smoking than females. Smoking was observed in 71.2% of cases. Tobacco usage in all forms increases the risk of lip cancer⁽⁸⁾. More than 90% of lip cancer involves the lower lip, almost certainly related to the relative sun light exposure⁽⁸⁾. About 1/3 of our patients have history of working outdoors as farmers.

SCC of the lip can be effectively treated by one of several methods. Surgery and irradiation are the most important treatment modalities. Most studies report excellent overall control rate with either modality⁽⁸⁾. The small lesion readily lends itself to local excision and primary closure in 46.9% of cases, with minimal patient morbidity. Patients treated with a combined approach (radiotherapy and surgery) experienced a better outcome⁽⁷⁾. Lip cancer is best cured when it is diagnosed early⁽¹⁰⁾. The lip reconstruction requires a remarkable diligence for preserve, as much as possible, the shape and functions of lip⁽¹¹⁾.

Many issues must be considered during treatment planning. These include the patient's age, the size and site of the tumor, the soft tissue defect and tissue laxity. The primary goals of reconstruction, the restoration of function and form, must always be taken into consideration as well⁽¹²⁾.

When lip defects less than 1/3 of the lip, wedge-shaped or V-shaped excisions with primary closure can be performed in upper and lower lip defects. These defects are usually 2 cm. or smaller. However, although a wedge excision may start with adequate margin, it narrows and may be cut too close to tumor⁽¹³⁾. This problem can be avoided by W- or U-shape excision. Local excision and straight suturing are only applicable to tumors less than 1/3 of the lip width^(14,15). It is important to remember that primary closure of these defects should not result in any appreciable microstomia. If this occurs, a secondary reconstruction option should be used⁽¹²⁾.

Defects that are between one third and two thirds the total lip length represent the most complex decision making challenge for the reconstructive surgeon. Two major techniques are used to reconstruct these defects: Estlander and McGregor flaps.

The Estlander is a lip-switching flap that involves the commissar and pivots the upper lip to the lower lip⁽¹⁵⁾. The flap seems to be safe and gives good functional result. The pedicle made as thin as possible to facilitate its later severing and minimize scarring. One drawback of these flaps is that they

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are denervated. Return of sensory function may begin after several months, usually in this order: pain, touch, and temperature. Hypersensitivity of the flap may also occur but usually resolves after the first year⁽¹⁶⁾. In this study we noticed that patients with Estlander flaps regain their lip sensation before 9 months.

The McGregor technique, involving the advancement of two innervated cheek flaps, should be considered the first-line procedure for one-stage reconstruction of lower lip defects of 80% or greater^(12,17) (fig.2). It has the advantage of more tissue is available for reconstruction than with other cross-lip flaps; at the same time, it avoids some of the microstomia that occurs with bilateral advancement flaps. This flap pivots around the commissar which remains in position, thus reducing the postoperative microstomia which results in other techniques⁽¹⁸⁾ (fig.3). However, lip vermilion needs reconstruction by either tongue flap or by labial mucosa mobilization upward. We preferred the latter technique as it is easy, safe, with good cosmetic results and with less morbidity to the patient. As the muscle direction is changed, there is decrease strength of sphincter action⁽¹⁵⁾.

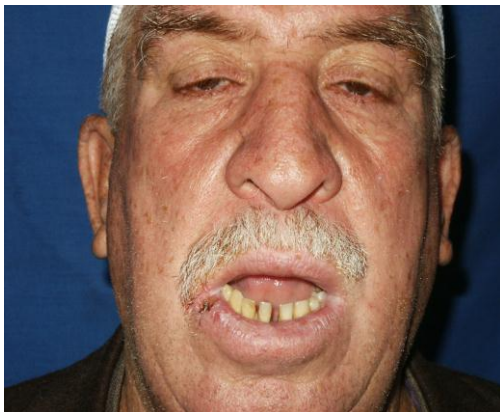
Because the orbicularis is not fully dissected and advanced, but rather is pulled with the pedicle, full function and sensation may not return and oral incompetence may also result⁽¹²⁾. However, we found that this minor problem was not of much concern to our patients except in one patient with

bilateral McGregor flaps who had minor oral incompetence. This is probably due to the laxity of the denervated flaps.

The functional and esthetic results were good in most of the cases. The flap is simple to perform, has minimal complications and has good cosmetic results. The symmetry of the reconstructed lower lip and optimal wideness of the mouth is preserved. Since this method denervates the motor and sensory supply of the flap, one expect more drooling. McGregor however claimed that the sensory loss was negligible and that recovery of function did eventually occur⁽¹⁵⁾. We have no postoperative drooling in any of our cases treated with this method. Moreover, the rounding and displacement of the commissure is not present, so it is more acceptable aesthetically by the patient than other procedures.

In some patients, palpable lymph node was present at the time of lip cancer presentation. If the neck nodes are palpable a radical neck dissection is preferred⁽¹⁹⁾.

Surgical excision of the tumor is a relatively a minor procedure with a minimum morbidity as compared to radiotherapy, which requires multiple visits to the clinic, causes local tissue reaction which may lead to scar formation and disturbance of function⁽²⁰⁾. Surgical excision and radiotherapy are regarded as equally effective options but preferred method is surgical excision⁽²¹⁾.



A



B

**Fig.1 A: Squamous cell carcinoma ulcer in lower lip.
B: postoperative result after wedge excision and primary suture.**

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A
B
Fig.2 A: Squamous cell carcinoma ulcer in lower lip.
B: Estlander flap reconstruction after excision of the tumor.



A
B
Fig.3 A: Squamous cell carcinoma involving the whole lower lip.
B: Total lower lip reconstruction using bilateral McGregor flaps.

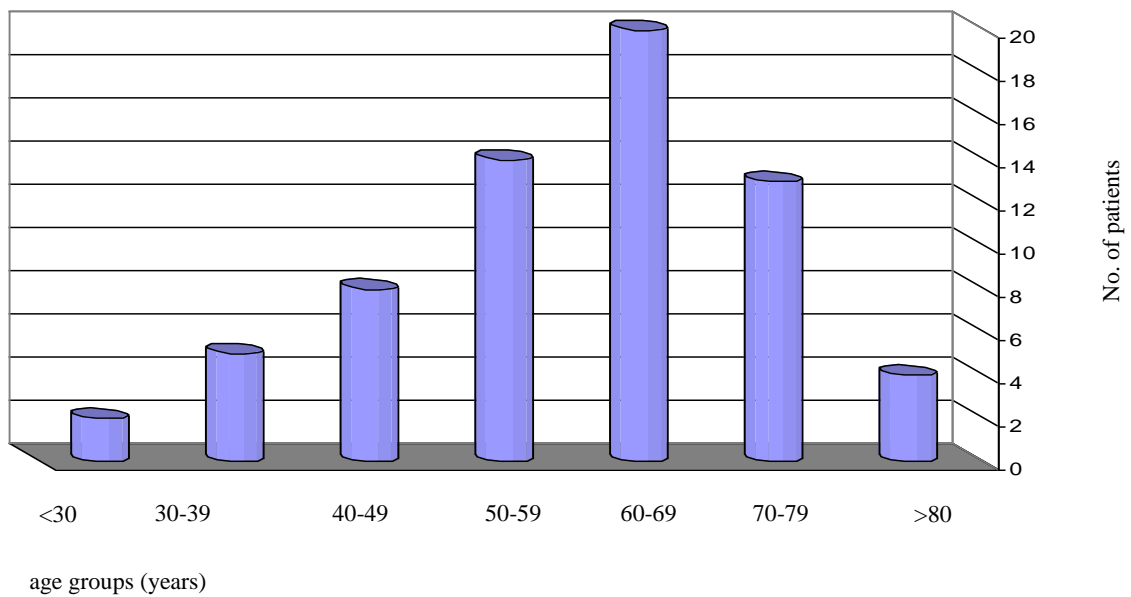


Fig. 4: Distribution of lip cancer patients according to age groups

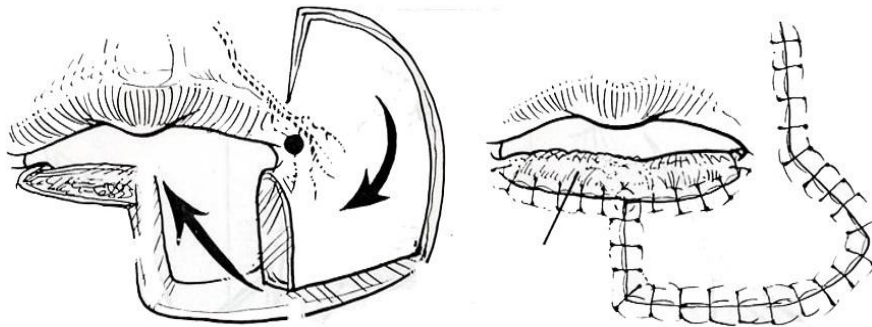


Fig.5: The McGreggor flap pivots around the commissar and the labial mucosa used to reform the vermilion.

CONCLUSION:

The treatment of SCC of the lip is essentially surgical. Early diagnosis is essential and contributes to successful reconstructive surgery. Lip reconstruction in the form of primary repair, Estlander flap and McGreggor flap were performed depending on the size and site of tumor. These flaps are simple and safe, functionally and aesthetically.

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