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Case Report

Surgical Management of Lower Lip cancer (Squamous Cell): From Epidemiology to Reconstruction Techniques

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ABSTRACT

Lip cancers, particularly squamous cell carcinoma, which is the most common type of cancer in this region, represent a major problem in oncology. They have a significant impact on lip function and aesthetics, highlighting the importance of an appropriate surgical approach.

In Morocco, these cancers are often diagnosed at an advanced stage, mainly due to socioeconomic factors and low awareness.

The objective of this study, based on a review of the literature and a retrospective case report, is to illustrate the epidemiological, clinical, histological and therapeutic aspects in our context.

Keywords: Lip cancers; Cell carcinoma; Socioeconomic factors

Introduction

According to GLOBOCAN 2022 data, cancers of the lip and oral cavity rank as the 16th most common malignancy worldwide, but rise to the 4th most frequent cancer within countries with a medium human development index (HDI)[1-4].

Lip cancer poses major surgical challenges.

The treatment of these cancers is mainly based on surgical procedures aimed at excising the entire tumor[5,6], with the primary objective of achieving oncological radicality.

However, the loss of tissue following this surgery is often significant and difficult to reconstruct[7].

Current techniques, although numerous, have limitations in terms of functional and aesthetic results, particularly in cases where patients seek treatment at a late stage[8-10].

The restoration of lip continence and aesthetic quality are crucial factors influencing patient satisfaction and their post -operative quality of life[11,12].

Materials and Methods

This is a retrospective study with descriptive aims carried out at the Ibn Rochd Hospital in Casablanca.

This study was spread over a 5-year period in the stomatology and maxillofacial surgery department of the 20 August 1953 hospital in Casablanca.

The sample included 36 cases admitted for cancer of the lip, selected according to inclusion criteria (confirmed malignant tumors, recurrences and usable records) and exclusion criteria (unusable records and operations under local anesthesia).

Results

Epidemiology

A. Age: The average age at the time of tumor diagnosis was 64 years, with extreme values ranging from 43 to 90 years, with the peak observed between 60 and 69 years **(Figure 1)**.

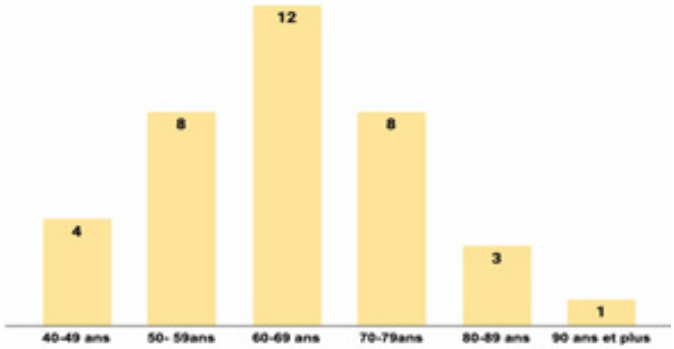

Figure 1: Distribution of patients by age group.

B. Gender: In our series of 36 patients, we identified 32 men (89%) and 4 women (11%), giving a male-to-female ratio of 8:1, indicating a high prevalence among males.

C. Occupation and socioeconomic status: In our series, 29.6% were farmers, 22.2% were manual laborers and 24% were unemployed, reflecting socioeconomic status.

In fact, it was observed that 67.6% of patients belonged to low socioeconomic categories **(Figure 2)**.

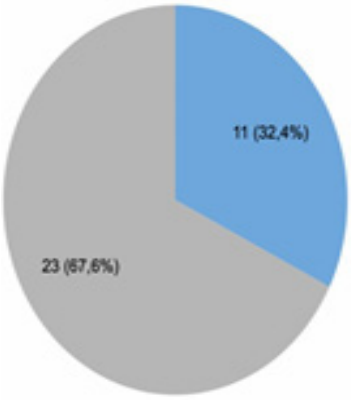

Figure 2: Distribution of patients according to their socioeconomic status

D-Risk factors: d1-Skin type and sun exposure:

In our series, skin type IV was the most prevalent, accounting for 26 cases or 72.2%, followed by skin type III, which affected 7 individuals or 19.4% of cases.

In our series of 36 patients, 23 were exposed to prolonged sunlight, probably due to occupations requiring outdoor work, such as agriculture or masonry **(Figure 3)**.

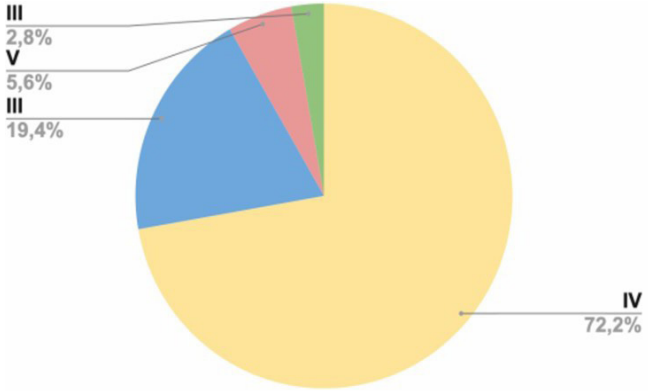

Figure 3: Distribution of patients according to their skin type

d2-Toxic habits: In our series, 26 were chronic smokers or 72.2%. Among them, 3 regularly consumed hashish or 8.3% and 2 smoked cannabis or 5.6%. In addition, 4 had a tobacco-alcohol combination.

d3-Oral health: Our analysis revealed that 80% of patients had poor oral health, with a notable prevalence of periodontal disease and dental caries. Conversely, 15% of patients had good oral health, while 5% were edentulous **(Figure 4)**.

Figure 4: Intraoral photograph of diffuse periodontal disease in a patient from our series.

d5-Precancerous lesions: In our study, 11 patients had precancerous lesions, representing 30.6%. Among them, 5 had actinic cheilitis (13.9%). In addition, 3 patients had systemic lupus erythematosus (8.3%). Finally, 3 patients had xeroderma pigmentosum (XP), representing 8.3%.

Clinical Data

A. Delay and Reason to Consultation

Thirty-one patients consulted due to lip swelling, causing discomfort when eating and speaking. Nineteen patients reported painful lip ulceration, while sixteen presented specifically for lip pain.

The time between onset and consultation ranged from 2 months to 5 years. The average time was 8 months.

C-Clinical examination: The majority of cases, 52.8% (19 patients), had tumors ranging in size from 2 to 4 cm. In addition, 36.1% of cases (13 patients) had tumors smaller than 2 cm, while 11.1% (4 patients) had tumors larger than 4 cm **(Figure 5)**.

Figure 5: Squamous cell carcinoma affecting the entire lower lip.

In 14 patients (38.8%), lymphadenopathy was identified, including submandibular, preauricular or upper cervical lymphadenopathy.

However, examination of other organs revealed no distant spread.

Anatomopathological aspects

Squamous cell carcinoma (SCC): present in 34 patients or 94,4% of the cohort. Verrucous carcinoma (VC): 2 cases were found or 5.6%.

Radiological assessment of locoregional extension

- Cervical ultrasound: performed in 18 patients
- Cervical-thoracic CT scan
- Cervico-facial MRI

This confirmed lymph node spread in 27 patients, infiltration of adjacent subcutaneous structures in 11 patients and bone lysis in 8 cases.

Radio clinical classification TNM

The tumor was classified according to the 8th edition of the TNM classification of cancers, which enabled us to establish the following tables **(Table 1-2)**.

Table 1: Radioclinical Tumor classification.

cT	Number of cases
T1	13
T2	15
T3	6
T4a	2
T4b	0
Total	36

Table 2: N classification.

cN	Number of cases
N0	24
N1	1
N2a	3
N2b	6
N2c	2
N3	0

All of our patients were classified as M0.

Treatment

Surgery:

- Surgical treatment consisted of three stages: tumor resection, cervical lymph node dissection if indicated and reconstruction of the post-resection loss of tissue **(Figures 6-9)**.
- Lymph node dissection was performed in 14 of our patients with squamous cell carcinoma **(Table 3-5)**.

Table 3: The different characteristics of lymph node dissection in our series.

Type of dissection	Number of cases
Unilateral modified radical lymph node dissection	1
Bilateral modified radical lymph node dissection	1
unilateral triangular or selectif lmph node dissection	4
Bilateral selectif lymph node dissection	4
Radical lymph node dissection	0

Reconstruction was performed during the same operation for all our patients, after tumor resection and lymph node dissection. Various reconstruction techniques were used.

Analysis of the surgical specimens revealed healthy resection margins (R0) in 33 cases (91%) and microscopic tumor margins (R1) in 3 cases.

Table 4: Details on the extent of resection in our cohort.

The extent of resection	Number of cases
Lip commissure	23
cheek	20
Opposite lip	19
chin	10

Figure 6: verrucous carcinoma of the lower lip extending to the lip commissure.

Figure 7: Epidermoid carcinoma of the lower lip extending to the commissure end the cheek.

Table 5: Reconstruction techniques for tumors of the lower lip.

Reconstrction technique	Number of cases	cT
Suture	16	T1-T2
Karapandzic flap	8	T2
Estlander flap	3	T2-T3
Nasolabial flap	2	T3
Camille Bernard flap modified by Webster	4	T3-T4
pectoralis major muscle flap	3	T3

Figure 8: Iconography of a 16-year-old child with XP who presented with a squamous cell carcinoma of the upper lip infiltrating the lip commissure, who underwent tumor excision and reconstruction using an Estlander flap

Figure 9: Iconography of a 73-year-old woman who presented with an epidermoid carcinoma of the lower lip (affecting more than two-thirds of the lip) who underwent tumor excision, a bilateral modified radical lymph nodes dissection and reconsctruction with camille bernard flap.

Radiotherapy and chemotherapy

- In our series, adjuvant radiotherapy was indicated in 7 cases, representing 20% of patients, combined with concomitant chemotherapy in 2 patients.

In addition, one case of neoadjuvant chemotherapy was administered with the aim of reducing tumor volume prior to surgery.

Postoperative functional and aesthetic results

Speech: preserved in all patients

- **Eating:** No choking hazard or dysphagia was noted in the patients who underwent surgery.
- **Pain:** A few patients reported residual pain after treatment, with a clear improvement according to the visual analog scale.

16% of patients experienced limited mouth opening, without significant discomfort when eating or speaking.

- Postoperative lip incontinence was observed in 5% of cases.
- Asymmetry of mouth opening in 11%.
- Microstomia in 8% of patients.

Recurrence and survival

- **After one year:** No local recurrence or metachronous lesions were observed.
- **After two years:** Only one case of local recurrence was noted. Twenty-seven patients (75%) were still alive.

Seven patients (20%) were lost to follow-up between 12 and 18 months and two disease-related deaths (5%) were recorded **(Figure 10)**.

Figure 10: iconography of the patient on figure 9 who presented a local recurrence after 18-month post-surgery and radiotherapy.

Discussion

Epidemiology

The lips are sometimes the site of various malignant tumors, although their exact incidence is difficult to assess due to a global epidemiological approach that often groups them together with cancers of the oral cavity[13,14].

In Morocco, according to a study by AMAZZAL N, lip cancers account for 6.5% of all ENT cancers, a proportion similar to that observed in other countries in the Mediterranean region[15-20]. The Greater Casablanca Region Cancer Registry (2013-2017) also reveals a high incidence of lip and oral cavity cancers, ranking second with 26.6% of head and neck cancers, after cavum cancer (52.7%).

These various studies show that the incidence of lip cancer varies greatly according to geographical region and environmental factors, with frequencies ranging from 1.7% to 12% depending on the types of ENT cancers and the populations studied.

A/ age

According to I. Barthélémy, the average age of patients with

lip cancer is around 60. Similar results are reported in different series: an average age of 63 in the series by Zaraa I et al., 65 in that by Tazi N et al., 75 in that by Salgarelli AC et al., 67 in that by Casal D et al., 59 in that by Ezzoubi M et al. and finally 64 in our series **(Figure 11)**[21-24].

Figure 11: Iconography of a 64-year-old patient presenting with squamous cell carcinoma of the lower lip, chronic smoker with poor oral hygiene

B/ sexe

Malignant tumors of the lips mainly occur in men. Various studies illustrate this trend: However, Ligier K et al. highlight a worrying trend toward feminization in France, which may be attributed to increased tobacco and alcohol consumption among women[25,26].

C/ Risk factors

c1-Smoking: Tobacco smoke contains more than 4,000 chemicals, over 70 of which are known carcinogens. Tobacco poisoning has been observed in a significant proportion of patients in several studies: 80% in the series by Tazi et al., 85% in that of Ezzoubi et al., 60.4% in the series by Biaosli et al. , 60% in the study by Lakhmiri et al. and 45% in that of Sbai M et al.

In our own study, we found that 26 patients or 74.3% of our sample, had tobacco poisoning, all of whom were male.

C2- Alcohol

Alcohol and smoking interact synergistically, significantly increasing the risk of developing lip tumors and other cancers of the upper aerodigestive tract by facilitating the absorption of carcinogens present in tobacco smoke, thereby increasing their toxicity to oral tissue cells[27].

C3-oral hygiene

An unbalanced oral bacterial flora, typical of poor oral hygiene, facilitates the conversion of ethanol into acetaldehyde, which increases the permeability of carcinogens through an altered oral mucosa[28].

C4- Sun exposure

Prolonged exposure to ultraviolet rays is a significant risk factor for the development of lower lip cancer.

UVB rays cause direct damage to keratinocyte DNA, leading to genetic mutations that promote oncogenesis.

In our context, 64% of patients had long-term exposure to the sun, being mainly farmers, taxi drivers or laborers, which makes them particularly vulnerable to the harmful effects of solar radiation.

C5- other risk factors

HPV 16 and 18 are associated with cellular changes leading to malignant neoplasms. Chronic irritation, such as radiodermatitis and burns, alters the lip mucosa and promotes oncogenesis. Deficiencies in vitamins A, C and E, which are essential for cell protection and immune response, may also contribute to the progression of precancerous lesions. Finally, immunosuppression, whether due to immunosuppressive treatments or corticosteroids, weakens the body's ability to control viral infections and cellular lesions, thereby increasing the risk of lip cancers[29,30].

Finally, squamous cell carcinoma of the lip can occur on precancerous lesions, which include: xeroderma pigmentosum, leukoplakia or erythroplakia and Dubreuill's melanosis **(Figure 12)**.

Figure 12: Iconography of a 19-year-old adult treated for xeroderma pigmentosum, who presented with a squamous cell carcinoma of the lower lip affecting more than two-thirds of the lip, who underwent excision and reconstruction using a W-V sliding flap and a modified Camille Bernard flap (to prevent postoperative microstomia)

Clinical profile

A-Time to consultation

Delayed diagnosis remains common: Zaraa et al. in 2013 and Sbai M et al. in 2018 observed delays of 7.5 and 7 months, respectively. This is in agreement with the data from our series, in which our patients consulted on average 8 months after the onset of their symptoms. This prolonged delay seems to be explained by various factors, including neglect and trivialization of certain symptoms despite their persistence and, in some cases, initial recourse to traditional medicine.

B- Tumor location and size

The anatomical position of the lower lip makes it more vulnerable to mechanical trauma, such as bites, irritation and UV rays.

Tumor size is assessed by inspection and palpation, which allows the surface area and depth of infiltration to be determined.

In the study by Zaraa et al., 53.3% of patients had tumors larger than 2 cm in their longest axis. In the series by Faiz A et al., 63% of patients had tumors measuring between 2 and 4 cm. Ezzoubi et al. reported that 71% of cases involved tumors less than 4 cm in their longest axis, while Lakhmiri M et al. noted that more than 60% of cases had cancers measuring more than 4 cm in their longest axis. In our study, which focused exclusively on malignant tumors of the lower lip, 52.8% of patients had tumors

ranging in size from 2 to 4 cm. In addition, 36.1% of cases had tumors smaller than 2 cm, while 11.1% had tumors larger than 4 cm. This preponderance of intermediate-sized tumors could be attributed to relatively late detection due to delays in consultation, as well as their slow and insidious progression.

C-Locoregional metastases

The submental, submaxillary, subdigastric and supraclavicular lymph nodes are particularly at risk of invasion in lower lip squamous cell carcinomas.

The risk of lymphatic spread is mainly influenced by tumor size and degree of differentiation.

The presence of clinical or radiological lymph node metastases often indicates an advanced stage of the disease.

The rates of lymph node invasion observed in various case studies on lip tumors show notable variations depending on the study period. Vukadinovic et al. report a rate of 26%, while in the study by Zaraa I et al., this rate reaches 43.3%. Lakhmiri M et al. report a rate of 40%. More recently, Sbai M et al. found a lower lymph node invasion rate of 9%[31,32]. In our series, lymph node invasion was observed in 38.8% of cases **(Table 6)**.

Table 6: Lymph node dissemination in the series.

Serie	percentage of cases
Vukadinovic et al. (Belgrade, 2004)	26 %
Zaraa I et al. (Tunis,2013)	43,3 %
Casal D et al. (Lisbonne, 2010)	3,2 %
Lakhmiri M et al. (Rabat, 2015)	40 %
Sbai M (Fès, 2018)	9 %
Our serie	38,8 %

Metastases M

In our study, we did not observe any distant metastases (M0), a finding also reported in the research by Vukadinovic, Amazzal N, Casal D and Sbai M. In contrast, the study conducted by Vahtsevanos identified four cases of distant metastases (M1) among 186 patients.

Surgical care

Surgery for tumors of the lower lip has three main objectives:

- **Curative:** Completely remove the tumor to reduce the risk of recurrence.
- **Functional:** Ensure effective reconstruction of the resected tissue to preserve essential functions, such as speaking and eating.
- **Aesthetic:** Maintain a natural appearance of the lip.

A- Reconstruction techniques

The techniques used, whether sutures, grafts or flaps (local, locoregional or even distant), are chosen based on the size and location of the tumor and the patient's clinical characteristics. The goal is to recreate a supple, mobile, ample and continent lip that blends harmoniously into its environment by respecting aesthetic subunits. This approach guarantees a reconstructed lip that is morphological, functional and dynamic, with satisfactory coloration and minimal residual sequelae.

Lower lip reconstruction is primarily guided by the "rule of thirds" regarding the total lip length.

Defects < 1/3 (Small: < 30%) - Direct Closure

- **Indication:** Small tumors or localized trauma.
- **Technique:** Primary closure using a "V-plasty" or "W-plasty".
- W-plasty is often preferred to break up the scar line and prevent "notching" of the vermilion border **(Figure 13)**.

Figure 13: Intraoperative photographs from our series showing a squamous cell carcinoma of the lower lip, the surgical excision and the subsequent reconstruction using a W-plasty

Defects 1/3 to 2/3 (Medium: 30% to 60%) - Local Flaps

The choice depends on whether the oral commissure (corner of the mouth) is involved.

- Karapandzic Flap (Gold Standard):
  - **Indication:** Large central or paracentral defects.
  - **Principle:** An innervated musculocutaneous rotation-advancement flap.
  - **Advantage:** It preserves the neurovascular supply, maintaining sensation and motor function (orbicularis oris muscle).
  - **Disadvantage:** May lead to microstomia (small mouth) if the defect is closer to 2/3.
- Abbe Flap (Lip-switch):
  - **Indication:** Central defects where maintaining mouth width is a priority.
  - **Principle:** A pedicled flap taken from the upper lip to fill the lower lip gap.
  - **Constraint:** Requires two stages (the lips are "joined" for 3 weeks before the pedicle is divided) **(Figure 15)**.

Figure 15: A: Intraoperative photograph from our series showing a loss of substance involving the lower two-thirds of the lower lip. B: Postoperative photograph of the same patient following reconstruction with a cross-lip (Abbe) flap.

- Estlander Flap
  - **Indication:** Lateral defects involving the commissure.
  - **Principle:** A rotation flap from the upper lip to the lower commissure.

Defects > 2/3 or Total - Regional or free flaps

When local lip tissue is insufficient to bridge the gap without severe deformity.

Bernard-Fries Flap (or Webster-Bernard):

- **Indication:** Near-total or total lower lip reconstruction.
- **Principle:** Lateral cheek advancement. Burow's triangles are excised at the nasolabial folds to allow the tissue to slide medially.

Johanson Flap (Step-ladder technique):

- **Indication:** Total defects in elderly patients with significant skin laxity.

Radial Forearm Free Flap (Chinese Flap):

- **Indication:** Total reconstruction when local/regional tissue is unavailable (e.g., post-radiation).

Note: Often requires a tendon graft (e.g., palmaris longus) for suspension to prevent lip sag and drooling **(Table 7)** and **(Figure 16)**.

Table 7: Summary Table.

Defect Size	Location	Primary Choice
< 30%	Any	Primary V or W closure
33 - 66%	Center	Karapandzic (or Abbe)
33 - 66%	Commissure	Estlander
> 66%	Any	Bernard-Fries
Total	Full Lip	Bernard-Fries or Free Flap

Figure 16: Reconstruction of a lower lip defect using a pectoralis major myocutaneous flap after squamous cell carcinoma resection.

Complications

At the Recipient Site (The Lip): Complications at the level of the reconstructed lip directly impact flap viability, function (oral competence, speech) and aesthetics.

Vascular compromise and flap necrosis:

- **Mechanism:** Venous congestion or arterial ischemia of the flap (caused by pedicle compression, twisting or excessive tension during closure).
- **Severity:** Partial or total necrosis represents the most critical complication. It is further exacerbated by a history of radiation therapy (radiation-induced microangiopathy).
- **Mucocutaneous Dehiscence and Suture Failure:** Driven by mechanical tension (mouth movements, edema) and infection. In complex reconstructions, this can lead to the exposure of underlying cartilage or bone.
- **Salivary Fistulas and Orostomas:** Salivary leakage through the suture line connecting the oral cavity to the skin. The continuous flow of saliva promotes persistent infection and delays wound healing.

Oral incompetence and microstomia

- **Microstomia:** A critical reduction in oral aperture (common with local flaps such as Abbé, Estlander or Karapandzic), which impairs feeding, speech and dental hygiene.
- **Oral incontinence:** Loss of oral competence (drooling, fluid leakage) due to motor denervation (injury to the facial nerve or its marginal mandibular branch) or a failure to reconstruct the muscular sphincter (orbicularis oris muscle).

At the donor site

Flap harvesting (whether local, such as a jugal flap or distant, such as a radial forearm free flap or an anterolateral thigh flap) carries its own inherent morbidity.

A. For Local and Regional Flaps (e.g., Nasolabial, Jugal, Submental Flaps)

- **Facial asymmetry and aesthetic sequelae:** Distortion of adjacent anatomical structures (such as lower eyelid ectropion or deviation of the nasal ala or the healthy labial commissure).
- **Motor neurological deficit:** Risk of injuring branches of the facial nerve during harvesting (e.g., the marginal mandibular branch of the mandible during a submental flap procedure), resulting in asymmetric facial paresis or paralysis.
- **Scar sequelae:** Visible and occasionally hypertrophic, facial scarring.

B. For Distant Flaps (e.g., Radial Forearm Free Flap / Chinese Flap, Anterolateral Thigh Flap-ALT)

- **Delayed healing and graft loss:** The donor site often requires a split-thickness skin graft for closure (particularly the forearm). Failure of the skin graft to take exposes underlying tendons or fascias.
- **Local thromboembolic complications:** Significant hematoma or seroma formation at the thigh or forearm harvest site.
- **Functional and sensory deficits:**
  - Reduced hand grip strength or restricted ankle/knee mobility, depending on the harvest site.
  - Residual paresthesia or numbness caused by the sacrifice of local sensory nerves (e.g., the lateral antebrachial cutaneous nerve).
- **Limb ischemia (Rare):** Risk of distal vascular compromise of the donor limb if the collateral arterial network is insufficient (e.g., an undetected abnormal Allen's test prior to a radial forearm flap).

Aggravating factors in oncology

The incidence of these complications is heavily augmented by the oncological profile of the patient:

- **Preoperative or postoperative radiation therapy:**

Significantly alters microcirculation, increasing the rates of necrosis, infection and fistula formation.

- **Malnutrition:** Prevalent in patients with upper aerodigestive tract (UADT) cancers, it directly impairs collagen synthesis and promotes wound dehiscence **(Table 8)**.
- **Chronic smoking:** Induces peripheral vasoconstriction, which compromises both the microanastomosis of free flaps and the microvascularization of local flaps **(Figure 17)**.

Table 8: Patients with upper aerodigestive tract (UADT) cancers

Study Cohort	Specific Surgical Techniques	Functional Outcomes & Rates	Aesthetic Outcomes & Scarring Sequelae
Ayachi et al.	Direct closure & Abbé flap	Good functional preservation.	Good cosmetic results.
	Local flaps (Stair-step, Webster, Estlander, Gillies fan flap)	Satisfactory overall functionality.	Severe and extensive facial scarring burden.
	Distant flaps	Functional outcomes are unsatisfactory.	Highly unsatisfactory cosmetic appearance.
Salgarelli AC et al.	Standard local reconstruction techniques	Globally satisfactory.	Globally satisfactory.
	Pectoralis major myocutaneous flap	Severe functional limitations (1 patient).	Severe cosmetic disfigurement (1 patient).
Ezzoubi M et al.	Mixed cohort (All techniques combined)	92% satisfactory functional rate.	90% global aesthetic success: • Excellent: 60% of cases • Good: 30% of cases
Amazzal N et al.	Mixed cohort (with commissural involvement)	Restricted oral aperture (1 patient), successfully restored post-intervention.	Microstomia (2 patients). • Required secondary bilateral commissuroplasty.
Lakhmiri M et al.	Radial forearm free flap (Chinese flap)	Satisfactory functional results.	Inferior retrocheilitis (1 patient).

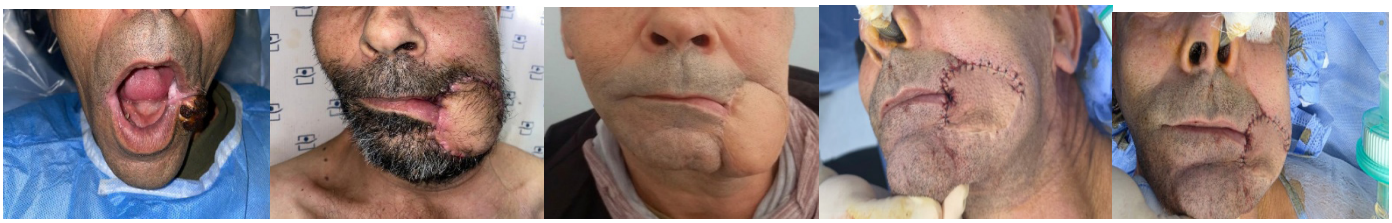

Figure 17: We report the case of a squamous cell carcinoma of the oral commissure with extensive involvement of the lower lip (A). The patient underwent wide oncological resection and the resulting large defect was reconstructed using a pectoralis major myocutaneous flap (B). Postoperatively, the patient exhibited significant functional and aesthetic sequelae, specifically severe oral incontinence and facial asymmetry. To address these complications, a secondary surgical revision was performed, consisting of flap debulking (thining) and surgical repositioning, which successfully optimized both the functional competence and the cosmetic contour of the lip.

Conclusion

In conclusion, lower lip reconstruction after cancer resection demands a critical balance between oncological clearance, functional restoration and aesthetics. While local flaps offer the best outcomes, complex and distant reconstructions carry significant functional morbidity.

Complications such as microstomia and oral incompetence deeply disrupt the patient's lifestyle, compromising speech, nutrition and social interactions. Therefore, long-term success extends beyond surgical technique; it requires early multidisciplinary support-including specialized physical therapy and psychological care-to optimize postoperative quality of life and ensure successful psychosocial reintegration.

References

1. Malard O, Corre P, Durand N, et al, Surgical repair of lip defects. Ann Fr Oto-Rhino-Laryngol Pathol Cervico-Faciale 2010;127(2):58-72.
2. Peter CN. Plastic Surgery 6.
3. Lahlaidi. Topographical Anatomy. Head and Neck 1986:126-141.
4. Caix P. Topographical Anatomy. Head and Neck 2002;47(5):332-345.
5. Slama LB. Lip carcinomas. Medical Press 2008;37(10):1490-1496.
6. Al-Hoqail RA, Meguid EMA. Anatomic Dissection of the Arterial Supply of the Lips: An Anatomical and Analytical Approach. J Craniofac Surg 2008;19(3):785-794.
7. Netter FH. Atlas of Human Anatomy, 5th Edition 2011.
8. Azzez K. Characterization and modeling of the *in vivo* mechanical behavior of the skin 2020.
9. Caix P. Anatomy of the labial region. Ann Chir Plast Esthét 2002;47(5):332-345.
10. Rouvière H. Descriptive and Topographical Human Anatomy. Volume I, Head and Neck. Elsevier-Masson.
11. Ricbourg B. Vascularization of the lips. Ann Chir Plast Esthét 2002;47(5):346-356.
12. Lee H, Won SY, Jehoon O, et al. The facial artery: A Comprehensive Anatomical Review. Clin Anat 2018;31(1):99-108.
13. Istria N, Ricbourg B. Sensory Anatomy of the Face. EMC Elsevier Masson SAS 2006.
14. Kolokythas A. Lip cancer treatment and reconstruction, Anatomic considerations of the lips 2014:5-9.
15. Themes UFO. Lip Cancer. Ento Key. Consulté le 2024.
16. Amazzal N, Amazzal N. Lip cancer-About 22 cases. Doctoral thesis in medicine. Marrakech: Université Cadi Ayyad 2008.
17. Salgarelli AC, Setti G, Bellini P, et al. Guidance flap choice for lip cancer: Principles, timing and esthetic-functional results. Rev Esp Cir Oral Maxilofac 2016;38(1):1-10.
18. Casal D, Carmo L, Melancia T, et al. Lip cancer: A 5-year review in a tertiary referral centre. J Plast Reconstr Aesthet Surg 2010;63(12):2040-2045.
19. Ezzoubi M, Benbrahim A, Fihri JF, et al. Reconstruction after tumour's

excision in lip's cancer: report of 100 cases. Rev Laryngol Otol Rhinol (Bord) 2005;126(3):141-146.

20. SBAI M. Surgical treatment of lip cancers - A report of 40 cases. Doctoral thesis in medicine. Fes: Sidi Mouhamed Ben Abdellah University 2018.
21. Fernandez-Angel I, Rodriguez-Archilla A, Cachaza JA, et al. Markers of metastasis in lip cancer. Eur J Dermatol 2003;13:276-279.
22. Vukadinovic M, Jezdic Z, Petrovic M, et al. Surgical Management of Squamous Cell Carcinoma of the Lip: Analysis of a 10-Year Experience in 223 Patients. J Oral Maxillofac Surg 2007;65(4):675-679.
23. Biasoli ER, Valente VB, Mantovan B, et al. Lip Cancer: A Clinicopathological Study and Treatment Outcomes in a 25-Year Experience. J Oral Maxillofac Surg 2016;74(7):1360-1367.
24. Mohammed V. Lakhmirim. Malignant tumors of the lips. Doctoral thesis in medicine. Rabat: University 2015.
25. Faiz A. Malignant Tumors of the Lips 2021.
26. NFISSI A. Lip carcinomas. Doctoral thesis in medicine. Fes, Sidi Mohammed Ben Abdellah University 2009.
27. Dhambri S, Turki S, Dhaha M, et al. Lip reconstruction after cancer resection: a clinical study of 70 cases. Tunis Med 2020;98.
28. Meresse T, Chavoin JP, Grolleau JL. Lip reconstructive surgery. EMC (Elsevier Masson SAS, Paris), Surgical Techniques - Plastic, Reconstructive and Aesthetic Surgery 2010:545-555.
29. Rifaat MA. Lower lip reconstruction after tumor resection; a single author's experience with various methods. J Egypt Natl Cancer Inst 2006;18(4):323-333.
30. Bessede JP, Sannajust JP, Vergnolles V. Surgery for lip tumors. EMC (Elsevier SAS, Paris), Surgical Techniques - Head and Neck 2006:238.
31. Moretti A, Vitullo F, Augurio A, et al. Surgical management of lip cancer. Acta Otorhinolaryngol Ital Organo Uff Della Soc Ital Otorinolaringol E Chir Cerv-facc févr 2011;31(1):5-10.
32. Ayachi S, Chelbi M, Moetamri R, et al. Repair of Transfixing Surgical Lip Tissue Loss. EMConsulte 2008.