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Research Article

Overview of Lip Cancers at Fann University Hospital: From Epidemiology to Treatment

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Abstract

Introduction: Lip cancer is uncommon but not exceptional among malignant tumors. The study aimed to describe the epidemiological, clinical, therapeutic, and prognostic aspects of malignant lip tumors treated in the ENT Department of the National University Hospital of Fann in Dakar, Senegal.

Patients and methods: We conducted a retrospective and descriptive study in the ENT Department of Fann, over fourteen years (6 January -31 December, 2023), involving patients with lip cancers confirmed by pathology. The parameters studied included demographic characteristics, lifestyle patterns, clinical and pathological features, and treatment outcomes, analyzed using descriptive statistics with Excel 2013 software.

Results: 36 cases were collected. The mean age of the patient was 58,5 years, with a sex ratio of 1.12. Poor oral health was identified as the primary risk factor, followed by prolonged exposure to sunlight. The predominant site was in the lower lip, accounting for 72,2% of cases. The most common appearance was budding and ulcerative (61,1%). Squamous cell carcinoma was the most frequent histological type, found in 97,2% of cases. Tumors were classified as T4 in 64% of patients. Surgical treatment was performed on 28 patients, with flap reconstruction utilized (pectoralis major musculocutaneous flap 30,5%). The carcinological progression was characterized by 4 cases of continued evolution, 1 case of tumor recurrence, and a mortality rate of 35%.

Conclusion: Lip cancers mainly develop in the lower lip. Surgical treatment and reconstruction depend on the size and location of the tumor and should aim to achieve satisfactory aesthetic and functional results.

Introduction

Lip cancers are uncommon but not exceptional malignant tumors. They represent a specific entity in cervical-facial carcinology. The lip consists of two distinct parts: the white skin of the lip and the red lip, which is formed by the vermilion and the labial mucosa, part of the oral cavity [1]. The most common type is squamous cell carcinoma accounting for more than 90% of cases, primarily located at the lower lip [2]. Several treatment options are available to the doctor. In Senegal, surgery is the most accessible therapeutic approach for treating these cancers, aiming for maximum preservation of mouth opening and as much possible mobility and labial sensitivity and finally to obtain the best possible aesthetic result [3]. The objectives of this study were an epidemiological, clinical, histological, therapeutic, and evolutionary analysis of these tumors in the ENT Department of the National University Hospital of Fann in Dakar, Senegal.

Patients and methods

This is a retrospective study analyzing 36 cases of lip cancer that were hospitalized and treated in the ENT department of FANN from January 06, 2010, to December 31, 2023. All patients with malignant tumors originating from the lip, confirmed by histological examination, were included in the study. Data collection and analysis were performed using Excel software version 2013. Therapeutic decisions were made by a multidisciplinary committee comprising ENT surgeons,

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medical oncologists, and radiation oncologists. Comprehensive data from physical examination, complementary tests, treatment modalities, and clinical outcomes were documented for each patient. Post-operative follow-up was conducted in the short, medium, and long term, with a consultation per month for the first bi-monthly for the subsequent six months, every six months for two years, and then annually thereafter.

Ethical declaration

I have obtained the patient's informed consent for the study and its publications (data and images).

Results

Thirty-six patients were included in the study, with an incidence rate of 1.7 compared to other VADS cancers in our department. The sex ratio was 1.12, with male predominance (19 men *vs.* 17 women). The mean age of the patient was 58.5 years, with a range from 17 to 90 years.

Among the identified risk factors, poor oral hygiene was the most prevalent, accounting for 80% (n = 30), followed by prolonged sun exposure (n = 23), phytotherapy (n = 7), labial trauma (n = 6), and active smoking (n = 6).

Delay in consultation varied from 2 to 45 months, with an average delay of 12 months. The most common reason for consultation was lip swelling and pain (84%), followed by ulceration (55.56%).

Lower lip involvement was observed in 26 patients (72.2%), while commissural involvement was noted in 6 cases (16.7%), and the upper lip in 4 cases (11%). The tumor presented in an ulcerative-bourgeoning form in 22 patients (61.1%), while the budding form was identified in 14 patients (38.9%) (Figure 1). Tumor extensions were predominantly to the contralateral labial commissure (n = 9), homolateral cheek (n = 7), and vestibular area (n = 5) (Figures 2,3).

In terms of tumor classification,16% of tumors were classified as T2, 20% as T3, and 64% as T4. No patient had a tumor classified as T1. Cervical adenopathy was clinically palpable in 22 cases (61%). Specifically, submental adenopathy was observed in 10 patients, subdigastric adenopathy in 9, and jugulocarotid inferior adenopathy in 3. Notably, only one of our patients was classified M1 (Table 1) after extension workup.

All our patients underwent a biopsy under local anesthesia before any therapeutic intervention. The anatomopathological analysis revealed that 35 cases (97.2%) were diagnosed with squamous cell carcinoma, while 1 case (2.8%) was identified as basal cell carcinoma (Figure 4), which is notably very rare in black subjects [4].

Tumor resection was performed under general anesthesia in 28 patients, with a safety margiń of 10mm. This was followed by flap reconstruction in 22 cases (Table 2) and direct suture of the margins in 5 cases. The definitive histological examination of the resection margins indicated that they were free of cancer in 23 patients, while 5 patients had invaded margins and subsequently received adjuvant treatment with chemotherapy and radiotherapy. Systematic node cervical breeding was systematic in all our operated patients.

Figure 1: Squamous cell carcinoma of lower lip and commissure.

Figure 2: Squamous cell carcinoma of lip extended.

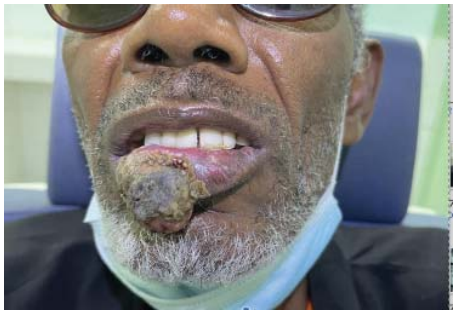

Figure 3: Squamous cell carcinoma of the lower lip.

Table 1: Distribution of patients according to TNM* classification.

	N0	N1	N2	N3	Total
T1	0	0	0	0	0
T2	6	0	0	0	6
T3	2	2	3	0	7
T4	6	4	9	4	23
Total	14	6	12	4	36

*TNM (UICC 2017)

Table 2: Distribution of patients according to various types of flap.

Type of flap	(n = 22)	(100%)
GILLIS	7	32%
Musculocutaneous pediculate flap of the great pectoral	11	50%
Temporo-frontal	2	9%
Mac Gregor	1	4,5%
Right thigh anterior	1	4,5%

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Surgery was combined with external radiotherapy in 15 cases and chemotherapy in 7. Seven (7) patients underwent non-surgical treatment due to the large size of the tumor and their extensions, which complicated surgical removal. Among these, five patients received palliative chemotherapy and two patients received accompanying antibiotic and analgesic therapy.

Early postoperative follow-up revealed infection at the surgical site, leading to loosening of the stitches in 9 cases. Of these, 3 required surgical revision of the sutures after the infection had resolved (Figure 5). Four patients continued to show progression after a few months of surveillance, and one tumor recurred 13 months later. As of date, 14 patients (56%) are still alive, while 03 patients were lost to follow-up after a minimum of 3 months. The death of 12 patients has been documented.

Discussion

Cancers of the lip and oral cavity are the most common non-melanoma cancers of the head and neck worldwide, with approximately 350,000 new cases each year [5]. Squamous cell carcinoma of the lip accounts for about 10-20% of all cancers of the oral cavity [6]. The literature indicates that lip cancer predominantly affects males [7-9], a finding supported by our study, which reported a male percentage of 52,7%. Most authors suggest that lip cancer typically occurs around the fifth decade of life which aligns with our findings [7,10,11]. In our study, the average age of patients was 58,5 years, with a range from 17 to 90 years and the most represented age group was between 50-60 years [8].

Poor oral hygiene and sun exposure are the most significant risk factors associated with lip cancer [8,12,13]. The poor oral condition creates an environment conducive to the proliferation of viruses, including oncogenes, by labial microtraumas can increase systemic inflammation leading to a very aggressive local immune response. Poor oral hygiene is usually present with alcohol-tobacco poisoning. Indeed, the highly developed bacterial oral flora in case of poor oral hygiene facilitates the degradation of ethanol into acetaldehyde and facilitates the passage of these carcinogens through sick oral mucosa. We believe that sun exposure is a classic factor in white-skinned subjects [1,12] and our study suggests it may also contribute to the development of cancer in individuals with darker skin [4]. Professions that involve prolonged sun exposure, such as farming and shepherding, are particularly affected. It is important to note that the majority of patients treated at our facility come from regions with high levels of solar radiation.

Figure 4: Basal cell carcinoma.

Figure 5: Infection resolved, incontinence labial.

The time taken to consult a healthcare facility ranged from 2 to 45 months, with an average delay of 12 months. This average delay is consistent with findings from studies by [8,11]. The possible reason for this delay includes the trivialization of certain symptoms despite their persistence, patient negligence of certain patients, superstition in some regions attributing symptoms to curses, and sometimes an initial reliance on traditional medicine. Delay in consultation is a prognostic factor for advanced lip tumors, and delayed diagnosis is commonplace. In the majority of our patients, lip swelling and pain were the primary complaints. Lip ulceration was present in 55.5% of patients, which aligns with results from the MAIGA series [8]. In our series, localization in the lower lip was observed in 72% of cases, consistent with findings in the African literature, including the series by Maiga S [8] , Biasoli, et al. [12] , 72.8% in the series by AMAZZAL N [11] , 80% in the series by Zaraa, et al. [14] and 70% in the series by LakhmirI [15] , as well as in Western literature [13,16].In our study, malignant tumors were located in the lower lip in 72% of cases, in line with those found in the literature findings due to the typical morphology of the African lip.

Squamous cell carcinoma is the most common histological type of lip malignancy, accounting for over 97.2% of our patients 35 [5,12]. Basal cell carcinoma was identified in one patient in our study; it is rare in the literature, particularly in Africa. Tumor extension was observed in 58.3% of our patients, indicating that none were classified as T1, and the majority presented at stage T3 or T4. This finding is consistent with results from the African literature [8], in contrast to the studies by Biasoli, et al. where T4 cases were less than 1%. This high rate can be attributed to the advanced stage of the disease at the time of the first consultation, often incomplete pre-therapeutic work-up, and the absence of extemporaneous histological examination, which limits surgical options. Cervical lymph node metastases accounted for 61% of cases, with the most frequent location being the submental region, followed by the subdigastric region. This reflects the delays in consultation and management.

Indeed, the incidence of occult metastases is low (5% - 10%) according to the literature [17]. Consequently, NCCN guidelines do not recommend elective neck dissection for cT1N0 or cT2N0 stages.

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To complete the pre-therapeutic workup, a CT scan may be requested. However, this costly examination is not accessible to everyone, which limits the ability to conduct a comprehensive work-up to refine therapeutic indications.

In our experience, surgery was the most frequent treatment modality [8,12]. Tumor excision was performed under general anesthesia in 28 of our patients, with a safety margiń of 10mm. This was followed by flap reconstruction in 22 cases and direct edge suturing in 5 cases, along with systematic prophylactic neck dissection. Functional appearance is a key element of any labial reconstruction. When the tumor is superficial and does not involve vermilion, resection may be non-interruptive. The loss of substance is then closed by direct suture or covered with a total skin graft. When the resection is transfixing but reaches less than one-third of the lip, the closure can usually be directed by a repair in three planes (skin, muscle, and mucosa) with a realignment, if possible, of the white-red lip junction. When the loss of substance is transfixing and reaches more than one-third of the lip, local lamina should be preferred.

Finally, when the loss of substance extends beyond the labial region, the use of a regional flap Definitive histological examination of the excisional margins revealed invasion in 5 patients who had undergone adjuvant treatment with chemotherapy and radiotherapy. Our data indicated an association between compromised surgical margins (with the presence of tumor remnants) and tumor recurrence. Interestingly, there is no consensus on the definition of adequate or safe surgical margins [18], and this aspect appears to be directly related to the development of local disease recurrence, as observed in this study.

Radiotherapy complemented surgery in 15 cases, while chemotherapy was administered in 7 cases. We reported the deaths of 08 patients, all of whom had not received surgical treatment. This underscores our decision to prioritize surgical intervention as the first-line treatment for management. Our study was limited by an immediate examination which could prevent some margins invaded. The recommendations will be above all prevention, education of the population, access to the information for all, and especially on the therapeutic level the development of immunotherapy and brachytherapy.

Conclusion

Lip cancer is a common type of oral neoplasm, most frequently affecting men between the ages of 50 and 70. It is the third most common oral cavity cancer in our department. Accurate diagnosing and staging of lip cancer allow for prompt treatment using the optimal surgical technique, which yields the best outcomes. Despite an accessible clinical diagnosis, our context is marked by late detection. In our context, the primary challenges are effective communication and early detection to ensure ideal management. Any suspicious or precancerous lesion should be treated adequately and early. The acceleration of the project to generalize compulsory health insurance to facilitate access to care among disadvantaged social strata and reduce the number of patients refusing an intervention because of their indigence.

Authors' contributions

Faty FALL, Fallou NIANG, Aminata MBAYE, Evelyne Siga Diom: Study design, data collection, and analysis, writing of the manuscript.

Ciré Ndiaye, Malick Ndiaye, Moustapha Ndiaye, Abdourahmane Tall: Reviewed the manuscript.

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