



Original article

Epidemiology, Clinical Features and Treatment of Lip Cancers in Senegal

Aspects cliniques, thérapeutiques et évolutifs du cancer de la lèvre au Sénégal

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RÉSUMÉ

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Introduction. Lip cancers are uncommon among black people but not unusual. The objectives of this study were to describe the epidemiological, clinical and therapeutic aspects of lip cancers at ENT Department of National University Hospital of Fann in Dakar, Senegal. **Patients and methods.** We performed a retrospective and descriptive study at ENT Department of Fann teaching Hospital in Dakar, Senegal, over a period of seven years, among patients with lip cancers confirmed by the pathology. The following data were studied: age, gender, past medical history, alcohol and tobacco intake, oral hygiene, the location of the lesions and their extensions, pathological findings, TNM classification, postoperative complications and mortality. **Results.** 19 cases were collected. The mean age of patients was 51 years, with a sex ratio of 1.4. Bad oral hygiene was the main risk factor followed by prolonged sunlight exposure. The lower lip was the main location of the lesion (73.7%). The budding ulcerative appearance was predominant (73.68%). Squamous cell carcinoma was found in all our patients. 68.42% of our patients were classified T3-T4. 63.15% of our patients underwent surgical resection of the tumor. The most common technique of reconstruction was Estlander flap (25%). Morbidity and mortality were respectively 50% and 31.6%. The global survival rate at one and three years was 85.7%. **Conclusion.** Lips cancers are relatively uncommon tumors in the black people. In our context, patients consult at advanced stages, making their treatment more difficult.

ABSTRACT

Introduction. Les cancers de la lèvre sont rares chez le mélanoderme mais non exceptionnels. Les objectifs de cette étude étaient de décrire les aspects démographiques, cliniques et thérapeutiques des cancers de la lèvre au CHNU de Fann (Dakar, Sénégal). **Patients et méthodes.** Étude rétrospective descriptive sur une période de 7 ans à la Clinique ORL du CHNU de Fann (Dakar, Sénégal), chez des patients ayant un cancer de la lèvre confirmé à l'examen histopathologique. Les paramètres étudiés étaient l'âge, le sexe, les antécédents, l'intoxication alcoolotabagique, l'état bucco-dentaire, la localisation des lésions et leurs extensions, les résultats anatomopathologiques de la pièce opératoire, la classification TNM, les complications postopératoires et la mortalité. **Résultats.** 19 patients ont été recrutés. L'âge moyen était de 51 ans avec un sex ratio de 1,4. Le mauvais état bucco-dentaire était le premier facteur de risque, suivi de l'exposition solaire prolongée. On retrouvait majoritairement un aspect ulcéro-bourgeonnant (73,68%). La localisation labiale inférieure était la plus fréquente (73,7%). Le carcinome épidermoïde était retrouvé chez tous nos patients. 68,42% des patients étaient classés T3-T4. Le traitement chirurgical a concerné 63,15% des patients et la reconstruction par lambeau de Estlander était la plus utilisée (25%). La morbidité et la mortalité ont été respectivement de 50% et 31,6%. La survie globale des patients opérés, à un an et trois ans était de 85,7%. **Conclusion.** Les cancers de la lèvre sont des tumeurs relativement rares chez le sujet noir. Dans notre contexte, les patients consultent à des stades avancés rendant leur prise en charge difficile.

INTRODUCTION

The lips are two musculo-membranous folds located at the front part of the mouth, for which they constitute the dynamic front wall [1]. Two parts can be distinguished: the white skin lip and the red lip formed by the vermilion and the labial mucosa which is part of the oral cavity.

Many malignant tumors may occasionally affect them. The most frequent is squamous cell carcinoma (more than 90% of cases) located on the lower lip [2]. The aim of this study was to describe the epidemiological, clinical and therapeutic aspects of lip cancer at the National University Hospital-Fann (NUH) in Dakar.

PATIENTS AND METHODS

This was a retrospective and descriptive study at the ENT Clinic Lamine Sine Diop NUH Fann in Dakar, Senegal, over a period of 7 years from January 1st 2009 to December 31st 2015. We included all patients' records with lip tumor, who had a pathologic analysis of biopsy and / or the surgical specimen that confirmed the diagnosis of cancer. The studied variables were: age, gender, past medical history, alcohol and tobacco intoxication, sun exposure, oral hygiene, the symptoms evolution time, location of lesions and their extensions, pathological results of the surgical specimen, the TNM classification, postoperative complications and mortality. Data recording and their analysis were performed using SPSS software (Statistical Package for the Social Sciences) v18. We used Kaplan-Meier curves for survival calculation.

RESULTS

In total, 19 cases with malignant lip tumor were gathered. There were 11 men and 8 women with a sex ratio of 1.4. The average age was 51 (standard deviation: 16 years) and extreme ranging from 26 to 80 years. Table I shows risk factors found in our patients. The poor oral condition and tobacco abuse were the most frequent ones. No trace of alcohol consumption in our patients. One patient had a lip cancer history for which he had a resection 10 years ago, with complete remission.

Table I. Distribution of patients according to risk factors of lip cancers

Risk factor	Number	%
Bad oral hygiene	12	63.15
Prolonged sun exposure	9	47.36
Tobacco intoxication	6	31.60
Labial trauma	2	10.52
Past medical history of lip cancer	1	5.26

The average time for consultation after the appearance of the tumor was 13.7 months (standard deviation: 15 months). The median time was 6 months with extremes of 2 months and 60 months. On physical examination, there was a budding ulcerative appearance in 13 cases (68.42%), ulcerated in 5 cases (26.32%) and budding in

1 case (5.26%). The lower lip location (Figure 1) was the most frequent: 73.7% of cases.



Figure 1. Squamous cell carcinoma of lower lip

The upper lip was affected in 10.5% of cases and the labial commissure (Figure 2) in 15.8% of cases.



Figure 2. Squamous cell carcinoma of labial commissure

An extension to the mandible was observed in 4 patients (Figure 3), to the cheek in 4 cases and the gum in 2 patients.



Figure 3. Advanced squamous cell carcinoma of the entire lower lip extended to mandible

The examination of lymph nodes areas revealed palpable nodes in 12 patients (63.2%). They were located at the submental region in 7 cases, at the submaxillary region in 3 cases and at sub digastric region in 2 cases. Thirteen patients (68.42%) came in consultation at advanced stage (T3-T4) (Table II).

Table II. Distribution of patients according to TNM* classification

	N0	N1	N2	N3	Total
T1	2	1	0	0	3
T2	3	0	0	0	3
T3	0	3	1	0	4
T4	2	3	3	1	9
Total	7	7	4	1	19

*TNM (UICC 2003)

Surgical treatment was performed in 12 patients (63.15%). It consisted of an excision of the tumor followed by reconstruction with a flap in 11 cases (Table III and Figure 4) and a direct suture of the banks in one case.



Figure 4. Squamous cell carcinoma of the lower lip (before and after resection and reconstruction by a Estlander flap)

Table III. Distribution of patients according to various type of flap

Type of flap	N
Abbe-Estlander flap	1
Abbe flap	1
Estlander flap	3
Gilles flap	2
Pectoralis major musculocutaneous flap	2
Sliding flap	2
Mac Gregor flap	1
Temporo-frontal flap	1

Surgery was associated to external radiotherapy in 2 cases and chemotherapy in 3 cases. Seven patients had non-surgical treatment due to the large size of the tumor and its extensions which made its removal difficult. Among them, two patients had induction chemotherapy

followed by concomitant radiochemotherapy; one patient had palliative chemotherapy and four patients had received an accompanying treatment with antibiotics and analgesics. The histologic type found in all patients was squamous cell carcinoma.

The postoperative period was uneventful for 6 patients. We noted a flap suture dehiscence in 3 patients with secondary infection of the wound and a good response to treatment. Partial flap necrosis occurred in 3 patients that required the making of a second flap in two cases. A patient who undergone died after a year of monitoring. He had a local recurrence 7 months after surgery. Overall survival of patients operated, all stages, at 1 year and 3 years was 85.7% respectively. The mean survival time was 21 months. Among the 7 non-operated patients, 2 were lost to follow and the 5 others died during treatment.

DISCUSSION

Lip carcinoma is relatively frequent. It represents 8 to 15% of skin cancers and 25 to 30% of oral cavity cancers [3]. In our department it represented approximately 1.8% of head and neck cancers. In the literature, a male predominance was found by most authors [1,4,5,6], confirmed by our study with a sex ratio of 1.4. According to most of the authors, lip cancer is a disease that occurs around the sixth decade [3,4,6]. But we found a younger population with an average age of 51. Our results are similar to those of Diombana et al. [1] in Mali who found an average age of 30.07. The bad oral hygiene with alcohol and tobacco intoxication are the most incriminated risk factors [2,7,8]. We did not find alcohol poisoning, but smoking in 31.6% of patients. We believe that sun exposure is a classical factor in subjects with white skin [2,3], and may also play a role in the development of lip cancer in black skin subjects. We also believe that on dark skin subjects, the threshold of UV exposure required to develop these cancerous lesions is higher than for fair-skinned people. Some occupations with prolonged sun exposure (farmers and herdsman) are the most affected.

In our series, the lesions were located on the lower lip in 73.7% of cases, in accordance with the literature [9,10,11,12]. Clinically, the lesions may occur immediately or develop over a precancerous lesion [2]. We did not find any pre-cancerous lesion. The upper lip was affected in two cases: one male subject and one female. According to the literature, the upper lip location is more common in women [2].

The diagnosis is usually easy, with a superficial ulceration, sometimes deep, bleeding on contact but mostly based on an indurated base. Sometimes the appearance is misleading, more limited, with tenacious mucous erosion and a not healing scab, involving biopsy in any doubt. An associated keratosis of the vermilion localized or diffuse, is possible [13,14,15]. In more extensive forms, the diagnosis is obvious with budding or ulcerative vegetating appearance, affecting much of the lower lip and overflowing onto the mucosal and cutaneous side. [2] The extended forms were found in 73.68% of our patients. They reflect a consultation delayed because of the under medicalization and neglect of some patients who prefer to start "traditional" herbal treatment since the disease is often considered as "an evil spell" The pain is often due to tumor infiltration or to an infection [15].

The tumor spread to the mandibular bone is common in lip cancers [16]. We found it in 4 patients (25%). Lymph node metastases usually appear late; the frequency of primary lymphatic metastasis at the first consultation varies depending on the authors. It was 2 to 10% for Zitsch and al. [17], 8% for Beauvillan De Montreuil and al. [15], 26.5% for Vukadinovic and al. [11] and 63.2%

in our study. They are submental, submandibular and in advanced cases, pre-auricular and carotid-jugular. The high frequency of metastases in our study is witness to the large number of patients seen at an advanced stage cancer. Indeed 68.5% of our patients were diagnosed at stage T3 or T4. Bilkay and al. [18] found in their study 53.4% of patients classified T3 or T4. However, in most of the series, the diagnosis is made early in the T1 or T2 stage in over 50% of cases [4,11].

In our study, squamous cell carcinoma was found in all patients. In the literature, it is found in over 80% of cases [4,5,12]. Basal cell carcinoma is less frequent. Ezzoubi and al. [9] found 14% of basal cell carcinoma. This can be explained by the relative scarcity of basal cell carcinomas on dark skin [19].

Therapeutically, labial squamous carcinomas fall under the surgical resection with reconstruction procedure (Dieffenbach techniques, Bernard, Abbe, Estlander, Gillies, McGregor, Ginestet, Meyer and Shapiro, Johansen, Fries, etc.) [20]. The functional aspect is a key element of any lip reconstruction. For carcinomas of a diameter of more than 2 cm associate a prophylactic neck dissection is performed, eventually combined with radiotherapy according to the number of affected nodes and the presence of capsular ruptures [2]. In our series, 12 patients (63.15%) had surgery and all surgical patients had a neck dissection. Radiotherapy completed the surgery in 2 cases. Of the seven patients who did not undergo surgery, five died. This finding confirms our decision to make the surgical treatment the first-line treatment for management of lip cancers.

When treated early, lip cancers usually present good prognosis. Thus, the overall 5-years survival varies between 85% and 99% for T1N0 patients. However, it substantially decreases to 25 to 50% for patients with lymphadenopathy at diagnosis [11, 21].

CONCLUSION

Lip cancers are relatively rare tumors in dark skin populations, but not exceptional. Their medical care, essentially surgical, has a dual imperative: aesthetic and functional. Unfortunately in our context, patients consult at advanced stages, making their management difficult.

CONFLICT OF INTEREST

None

AUTHORS' CONTRIBUTIONS

Souleymane Maïga, Evelyne Siga Diom and Eric Joël Regonne Palou: Study design, data collection and analysis, writing of the manuscript.

Ciré Ndiaye, Malick Ndiaye, Abdoulaye Dieye, Abdourahmane Tall, Issa Cheikh Ndiaye, Raymond Diouf: Reviewed the manuscript.

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