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Original Research Article

Clinico-epidemiological profile and treatment outcome of lip cancer: a retrospective study from north India

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ABSTRACT

Background: Aim of present study to evaluate the Clinico-epidemiological profile and treatment outcome of Lip Cancer.
Methods: This was a retrospective study performed in our hospital. All necessary clinical and epidemiological details of the 11 cases diagnosed with lip cancer from January 2016 to December 2021 were analysed.
Results: The total number of new malignant cases diagnosed as lip cancer between January 2016 and December 2021 were 11, which comprised 6 male (55%) and 5 (45%) female. The male-to-female ratio was (1.2:1). The most common histological type was SCC, i.e., in 9 (81.8%) of the total number of cases and BCC was in 2 patients (18.2%). Overall survival at 5 years was 89% in our study.
Conclusions: In conclusion, we have reported higher levels of lip cancer among men and those above 45 years of age. The important prognostic factors for overall survival in these patients were cancer stages. Better survival is achieved with surgery alone in the early stages and with adjuvant radiotherapy in the later stages.

Keywords: Basal cell carcinoma, Lip cancer, Radiotherapy, Squamous cell carcinoma, Surgery

INTRODUCTION

The lips represent a transitional zone between the facial skin and the oral cavity mucosa. The major morphological types of lip cancer are lip squamous cell carcinoma (LSCC) and lip basal cell carcinoma (LBCC). It is the most frequent tumor of the oral and maxillofacial region, comprising 25 to 30% of all oral cancers.[1] Squamous cell carcinomas (SCCs) constitute most lip cancers; in most cases, these tumors arise on the vermilion border.[2,3] SCCs occur more frequently in elderly white men (male-to-female ratio, 28.5:4.3), has a peak incidence in the sixth and seventh decades, and is more common in the lower lip (>95% of cases).[1-4] Squamous cell carcinoma (SSC) is the most represented histological type (more than 90%), while basal cell carcinoma (BCC) is uncommon in this anatomical site (less than 10%). BCCs generally occur in the upper lip and do not usually develop lymph node metastases.[5,6] In contrast, SCCs develop most often in the lower lip, with a possibility of neck metastases. Lip carcinomas frequently appear on top of pre-cancerous lesions, such as radiodermitis, chronic cheilitis and xeroderma pigmentosum. The combination of long-term exposure to ultraviolet (UV) radiation from exposure to sunlight and a fair skin has been proposed as one of the etiological

factors in the epidemiology of lip cancer.[7] Surgery is the treatment of choice for most of the tumors of the lip and full thickness resection is the surgical procedure indicated. The purpose of this study was to provide information about the clinico-epidemiological features and treatment outcome of lip cancer in patients in our sample during a 6-year period, and to investigate risk factors associated with the development of this type of tumor.

METHODS

This was a retrospective study performed in the department of Radiation Oncology, Sher-I-Kashmir Institute of Medical Sciences, Soura, Srinagar, India. All necessary clinical and epidemiological details of the 11 cases diagnosed with lip cancer from January 2016 to December 2021 were retrieved. Clinical and radiological features, histopathological findings, treatment and follow-up data were analysed. Lip cancer incidence distributions were analysed by available registered data: gender (female and male), age (those aged 45 years or less and older), histological diagnosis (BCCs and SCCs), site of lip cancer (lower and upper lip), chronic solar exposure (exposed and not-exposed), tobacco and alcohol habits (absent and present), treatment (surgery with or without adjuvant radiotherapy) and overall survival. None of the patients examined presented metastases at the time of diagnosis. These are the following criteria to be eligible for the enrolment as our study participants: a) All the cases of lip cancer who were registered during the study period in our hospital were included. b) Patients who defaulted or did not complete the treatment for any other medical or natural cause were excluded.

Statistical analysis

Data analysis was done on an MS Windows-based computer. The data were first keyed into a Microsoft Excel spread sheet and cleaned for any in accuracies. Statistical analysis was done using IBM SPSS Statistics for Windows from IBM Corp. (released 2020, Version 27.0. Armonk, NY, USA). Categorical variables were shown in the form of frequencies and percentages. The study was carried out in accordance with the institutional ethics committees (IEC) of SKIMS and the updated Helsinki Declaration from 1964. Informed consent was waived, as this was a retrospective audit of the health records.

RESULTS

The total number of new malignant cases diagnosed as lip cancer between January 2016 and December 2021 were 11, which comprised 6 male (55%) and 5 (45%) female. The male-to-female ratio was (1.2:1). The majority of individuals were older (age more than 45 years) i.e., 7 (63.6%). The external lower lip was affected in 8 cases (72.8%) while the external upper lip in 3 cases (27.2%). The most common histological type was SCC, i.e., in 9 (81.8%) of the total number of cases and BCC was in 2 patients (18.2%) (Table 1).

Table 1: Demographic and clinical profile.

Variables	Categories	N	%
Age	Age > 45 years	6	63.6
	Age < 45 years	4	36.4
Gender	Male	6	55
	Female	5	45
Primary site	Lower lip	8	72.8
	upper lip	3	27.2
Histopathology	Squamous cell carcinoma	9	81.8
	Basal cell carcinoma	2	18.2
Stage	T1/N0, T2/N0	9	81.8
	T3/N+, T4/N+	2	18.2
Treatment	Surgery	11	100
	Surgery + radiotherapy	2	18.2

Tobacco and smoking were present in 1 case (9.09%) and 9 cases (81.8%) respectively, and 8 (72.8%) patients had a history of chronic exposure to solar radiation. The diameter of the tumor was less than 0.5 cm in 3(27.2%) patients, between 0.5 cm and 1 cm in 4(36.3%) patients, between 1 cm and 2 cm in 2(18.2%) patients and more than 2 cm in 2(18.2%) patients. 9(81.8%) patients were having T1/N0 or T2/N0 disease and received surgery as the sole modality of treatment. 2 patients (18.2%) having T3/N+, T4/N+ diseases were subjected to adjuvant radiotherapy to a dose of 60Gy in 30 fractions @ 2gy per fraction over a period of 6 weeks (5 fractions per week) (Table 1). Overall survival at 5 years was 89% in our study.

DISCUSSION

The tumor, in its initial phase, usually appears as a papule or a plate which tends to progress into a vegetative or ulcerative form. In these cases, a biopsy is indispensable to confirm the diagnosis of carcinoma. Although in the case of T1 or T2 lesions, the percentage of patients with lymph node metastases at the time of diagnosis is 8%, this figure increases considerably in advanced-stage tumors, making it necessary to search for possible cervical metastatic adenopathy.[8]

In accordance to the literature data, we found an increase in lip cancer incidence with increasing age.[9] In our sample, lip carcinomas were most frequent in those aged 45-70 years. This could be a result of accumulation of molecular changes due to exposure to factors such as tobacco and other carcinogens, or as part of the biological ageing process that has been shown to be linked to accumulation of DNA damage.[10,11] We found a higher number of lip cancer cases among men than women. These differences might be due to occupational and behavioural differences between the sexes: a higher percentage of men working outdoors and are more

exposed to solar radiation. Some investigators have also suggested the value of women's lipstick, a known protector against solar exposure of the lip.[12] Carcinomas of the lower lip most frequently occur in male smokers working in the open air. It occurs especially among Caucasians. Dark skinned people are probably protected against UV rays by their natural skin pigment.[16]

The lower lip is the most affected anatomical site and SCCs are the most frequent in these patients.[6,8] The higher occurrence of disease of the lower lip has been attributed to its position, which usually means that it receives a higher exposure to solar radiation and is also more subjected to the action of the other factors such as tobacco and alcohol.[13] Smoking is an important factor in lip SCC and the malignant lesion will occur in the location where the cigarette, cigar or pipe is placed.[14]

As expected, Kaplan-Meier survival analysis showed that tumors at the initial clinical stages were associated with a higher survival rate. The highest survival rates in patients with lip SCC are frequently observed when compared with rates in patients with SCC of intraoral sites.[15] According to Czerninski et al and Abreu et al this could be the result of the easier recognition by patients or health care providers, leading to an early diagnosis.[15,16] Czerninski et al reported on a national Israeli skin cancer prevention campaign conducted for 15 years, which could have contributed directly to the early detection of the lip lesions beyond actions for population awareness taken by the public system and health care services; according to them, considerable changes in occupational risk factors (e.g., less sun exposure) and a decrease in Israelis working outdoors were noted.[15] In this study, surgery was the most frequent treatment modality for patients with lip SCC. Other studies have reported a higher recurrence incidence[17-19] reaching 20.00% for surgery with or without radiotherapy treatment. In accord with previous studies[20] the authors suggest that the surgical approach is probably best indicated for early and small lesions; ample resections for large tumors can severely affect the functional prognosis.

This study showed a high success rate in the treatment of patients with LSCC in a 6year period. There was a low incidence of local recurrences and second primary tumors and an excellent survival rate. Compromised surgical margins directly influenced tumor recurrence. Thus, future research involving LSCC must be focused on defining a safe surgical margin during surgical treatment and the development of programs for disease prevention.

This study has limitation was that as this was a single centre study, sample size was small.

CONCLUSION

In conclusion, we have reported higher levels of lip cancer among men and those above 45 years of age. In the external lower lip, most cases were SCC, more commonly among men. Smoking and excessive sun exposure were the main risk factors. The important prognostic factors for overall survival in these patients were cancer stages. Better survival is achieved with surgery alone in the early stages and with adjuvant radiotherapy in the later stages.

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REFERENCES

1. Moore SR, Johnson NW, Pierce AM, Wilson DF. The epidemiology of lip cancer: a review of global incidence and aetiology. Oral Dis. 1999;5(3):185-95.
2. De Visscher JG, Schaapveld M, Otter R, Visser O, Van der Waal I. Epidemiology of cancer of the lip in The Netherlands. Oral Oncol. 1998;34(5):421-6.
3. Luna-Ortiz K, Güemes-Meza A, Villavicencio-Valencia V, Mosqueda-Taylor A. Lip cancer experience in Mexico. An 11-year retrospective study. Oral Oncol. 2004;40(10):992-9.
4. Czerninski R, Zini A, Sgan-Cohen HD. Lip cancer: incidence, trends, histology and survival: 1970–2006. British J Dermatol. 2010;162(5):1103-9.
5. Zitsch RP, Lee BW, Smith RB: Cervical lymph node metastases and squamous cell carcinoma of the lip. Head Neck. 1999;21:447-53.
6. Khuder SA. Etiologic clues to lip cancer from epidemiologic studies on farmers. Scand J Work Environ Health. 1999;25:125-30.
7. Perea-Milla López E, Miñarro-Del Moral RM, Martínez-García C, Zanetti R, Rosso S, Serrano S, et al. Lifestyles, environmental and phenotypic factors associated with lip cancer: a case–control study in southern Spain. Br J Cancer. 2003;88:1702-7.
8. Vartanian JG, Carvalho AL, de Araujo Filho MJ, Junior MH, Magrin J, Kowalski LP. Predictive factors and distribution of lymph node metastasis in lip cancer patients and their implications on the treatment of the neck. Oral Oncol. 2004;40:223-7.
9. Morton RP, Missotten FE, Pharoah PO. Classifying cancer of the lip: an epidemiological perspective. Euro J Cancer Clin Oncol. 1983;19(7):875-9.
10. von Figura G, Hartmann D, Song Z, Rudolph KL. Role of telomere dysfunction in aging and its detection by biomarkers. J Mole Med. 2009;87:1165-71.
11. Capell BC, Tlougan BE, Orlow SJ. From the rarest to the most common: insights from progeroid syndromes into skin cancer and aging. J Invest Dermatol. 2009;129(10):2340-50.
12. Pogoda JM, Preston-Martin S. Solar radiation, lip protection, and lip cancer risk in Los Angeles County women (California, United States). Cancer Causes & Control. 1996;7(4):458-63.

13. Papadopoulos O, Konofaos P, Tsantoulas Z, Chrisostomidis C, Frangoulis M, Karakitsos P. Lip defects due to tumor excision: apropos of 899 cases. Oral Oncol. 2007;43(2):204-12.
14. Chi AC. Epithelial pathology-lip vermilion carcinoma. In: Oral and Maxillofacial Pathology. Neville BW, Damm DD, Allen CM, Bouquot JE (eds.). Philadelphia, Saunders; 2009:414-415.
15. Czerninski R, Zini A, Sgan-Cohen HD. Lip cancer: incidence, trends, histology and survival: 1970–2006. British J Dermato. 2010;162(5):1103-9.
16. Abreu L, Kruger E, Tennant M. Lip cancer in Western Australia, 1982–2006: a 25-year retrospective epidemiological study. Austra Dental J. 2009;54(2):130-5.
17. Baker SR, Krause CJ. Carcinoma of the lip. The Laryngoscope. 1980;90(1):19-27.
18. Raskob GE, Zitsch III RP, Park CW, Renner GJ, Rea JR JL. Outcome analysis for lip carcinoma. Otolary–Head N Surg. 1995;113(5):589-96.
19. Cruse CW, Radocha RF. Squamous cell carcinoma of the lip. Plastic Reconstr Surg. 1987;80(6):787-91.
20. Luna-Ortiz K, Güemes-Meza A, Villavicencio-Valencia V, Mosqueda-Taylor A. Upper lip malignant neoplasms. A study of 59 cases. Medicina Oral, Patologia O Cirugia Bucal. 2012;17(3):e371.

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