Pattern of Nonmelanoma Skin Cancers in Sikkim, India: A 3-year Clinicopathological Review

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Received: 10 January 2013 / Accepted: 5 April 2013 / Published online: 13 April 2013
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Abstract Basal cell carcinoma (BCC) and Squamous cell carcinoma (SCC), in combination, are referred to as Non-melanoma skin cancers (NMSCs). NMSC has not been extensively studied in the population of the North eastern India as it has been done in the rest of India. This study was performed to understand the pattern of NMSCs in head and neck region in Sikkimese population. The present study is a retrospective analysis of NMSC of head and neck region that presented to the Department of ENT, Sikkim Manipal Institute of Medical sciences (SMIMS), a tertiary care center in Gangtok, Sikkim from July 2009 to July 2012. They were reviewed according to age, gender, site of involvement and histological types. Of the thirty-seven cases of NMSC analyzed during the 3 year study period, 24 cases were SCC and 13 cases were BCC. The most common age group for SCC was 40–50 years and BCC was 61–70 years. The most common site for both SCC and BCC was the upper lip. For SCC, the most common histologically type was well-differentiated and for BCC, it was the solid type. NMSCs comprise a small but significant proportion of all skin cancer patients in the world. SCC is the commonest variety unlike in western countries. The importance of understanding the risk factors as well as studying the frequency of histopathological patterns can

help in the overall prognostic outlook for patients and also in planning an effective management.

Keywords Nonmelanoma skin cancer · Squamous cell carcinoma · Basal cell carcinoma

Introduction

Skin cancers are usually non melanoma type. The most common nonmelanoma skin cancers (NMSCs) are basal cell carcinoma (BCC) and squamous cell carcinoma (SCC), which start in either the basal cells or squamous cells located at the base of the outer layer of skin (epidermis) [1]. The majority of NMSCs develop on sun-exposed areas in white populations [2]. Risk factors for the development of SCC in darkly pigmented individuals, as in cases of people of the subcontinent, are chronic scarring and areas of chronic inflammation. It is the most frequent type of malignant tumor arising in scarred skin [3]. Development of BCC has been correlated with prolonged, intensive Ultra violet rays exposure, with BCC occurring most commonly after the fifth decade of life. More than 90 % of NMSC occur in the head and neck region with the face being the commonest site [2].

NMSC is not usually life threatening unlike malignant melanoma [2]. In India, the incidence of skin malignancies is low, constituting about 1–2 % of all the diagnosed cancers. BCC is the commonest skin cancer worldwide, but various studies from India have reported SCC as the most prevalent skin malignancy [4]. In Sikkim, NMSCs constitute about 2.72 % of all cancers [5].

Since there has been not many studies of NMSCs in the population of North Eastern India, this retrospective study was conducted at SMIMS to reveal the pattern of NMSCs specially in Sikkimese population.

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Table 1 Showing age/sex distribution of NMSC

Age (years)	Squamous cell carcinoma		Basal cell carcinoma		Total (%)
	Male	Female	Male	Female	
40–50	10	3	2	1	16 (43.2)
51–60	4	2	3	1	10 (27.1)
61–70	4	1	5	1	11 (29.7)
Total	18	6	10	3	37 (100)

Table 2 Distribution of primary sites involved

Site distribution	Number		Total (%)
	Squamous cell carcinoma	Basal cell carcinoma	
Upper lip	18	11	29 (78.4)
Lower lip	04	00	04 (10.8)
Cheek	02	02	04 (10.8)
Total	24	13	37 (100)

Materials and Methods

The present study was conducted in SMIMS, a tertiary care teaching hospital. Main focus was to study the incidence of Nonmelanoma cancer in the Sikkimese population.

A retrospective analysis of all NMSC cases received at the Department of ENT from July 2009 to July 2012 was performed. The results were analyzed after proper diagnosis based upon the clinical history, gross and histopathology findings.

Results

Of the thirty-seven cases of NMSCs analyzed during the 3 year study period, 24 cases (64.9 %) were SCC and 13 cases (35.1 %) were BCC. 28 cases (75.7 %) were males and 9 cases (24.3 %) females with a male to female ratio of 3.1:1.

Age ranged from 40 till 70 years out of which the most common age group for SCC was 40–50 years and BCC was 61–70 years (Table 1).

Distribution of primary sites involved is shown in (Table 2). Of the twenty-four cases of SCC, 18 cases (75 %) were seen involving the upper lip, followed by four cases (16.7 %) in the lower lip (Fig. 1) and only two cases (8.3 %) involving the cheek. In case of BCC, of the thirteen cases, 11 cases (84.6 %) were seen involving the upper lip (Fig. 2) and only two cases (15.4 %) involving the cheek.

Fig. 1 Squamous cell carcinoma of the lower lip **Fig. 2** Basal cell carcinoma of the upper lip

Out of the twenty-four (24) cases of SCC, 16 (66.7 %) were histologically categorized as well-differentiated, 5 (20.8 %) as moderately differentiated and 3 (12.5 %) as poorly differentiated. For BCC, the most common histological variant was solid (nodular) type with twelve cases (92.3 %) and keratotic type in one case (7.7 %).

Discussion

Though BCC is the commonest NMSC worldwide, but various studies from India have reported SCC as the most prevalent [4]. In this present study also, SCC constituted 64.9 % of all the cases. In various studies conducted, it has been shown that 70 % of all skin cancers occur mainly in the sixth, seventh and later decades [6]. But in our study, 29.7 % of all reported cases of cancer relate to the sixth and later decades.

The frequency of skin cancers in men and women is different. Present study shows a slight male preponderance comparable to other studies. In this study, all the cases of NMSCs were seen involving the face with the upper lip

being the most common site, which demonstrates the major influence of sun exposure in the development of skin cancers. This corroborates the result of a previous study by Franceschi et al. [7].

The most common histopathological pattern for SCC was the well differentiated form constituting 66.7 % comparable to study by Alakloby et al. [8]. The most common histopathological pattern for BCC was the solid (nodular) pattern also reported by Alakloby et al. [8].

Risk factors for the development of SCC in darkly pigmented individuals are chronic scarring and areas of chronic inflammation. SCC is the most frequent type of malignant tumor arising in scarred skin [9]. Overall prognosis of scar SCC is less favorable compared to non-scar SCC [10]. One case of SCC in the present study was seen in an old burnt scar.

Conclusion

NMSCs comprise a small but significant proportion of all skin cancer patients in the world.

SCC is the commonest variety unlike in western countries. The importance of understanding the risk factors as well as studying the frequency of histopathological patterns can help in the overall prognostic outlook for patients and also in planning an effective management.

Acknowledgments This study was supported by Sikkim Manipal Institute of Medical Sciences. We declare that the procedures were conducted with the understanding and the consent of the patient.

Conflict of interest There are no potential, perceived, or real competing and/or conflicts of interest among authors regarding this article.

Ethical standard All the co-authors have seen and approved the final version of the manuscript and it is not currently under active

consideration for publication elsewhere, has not been accepted for publication, nor has it been published/reported earlier, in full or in part. All the authors have been personally and actively involved in substantive work leading to the report, and will hold themselves jointly and individually responsible for its content.

Funding We declare that no funding, direct or indirect for our study was received.

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