COMPARISON OF ORAL SQUAMOUS CELL CARCINOMA IN YOUNG AND OLD ADULTS

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ABSTRACT

Oral squamous cell carcinoma (SCC) is uncommon in the young. This study compares the demographical, clinical and pathological features of 38 cases of oral SCC distributed equally in patients above and below 40 years. In the latter group, males exceeded females, was apparent in all socio-economic classes and was associated with fewer aetiological factors. The tumours tended to be infiltrative and mainly affected the tongue. In the above 40 years of age group, oral SCC presented clinically as exophytic lesions, occurred more frequently in the lower socio-economic class, were associated with aetiological habits and the predominant site was the buccal mucosa. There were no marked differences in the clinical staging and histological grading of the tumours and lymph node spread in these two groups.

INTRODUCTION

The occurrence of oral squamous cell carcinoma (SCC) has appeared to be falling in certain parts of the world for example in the United States[1], Scandinavia[2] and Scotland[3] but rising in others[4, 5]. Oral SCC is a disease seen predominantly after the fifth decade of life. Its incidence in the young adults is rare but recent data indicates that the average age of oral SCC is declining[3]. Individual studies have confirmed the rarity of the disease and shown the poorer prognosis compared to older adults as evident by its frequently anaplastic and metastatic findings[6-8]. Unlike cancer in the older population, no significant habits such as tobacco smoking, alchohol or betel quid chewing are seen in the younger patients[7, 9].

The objective of this study was to compare the clinical, demographical and pathological features of oral SCC in young and old adults.

MATERIALS & METHODS

Nineteen patients aged 40 or younger with oral SCC who presented at the Dental Faculty, Kuala Lumpur were anaylsed for the clinical and pathological features. A similar number who were above 40 years of age were selected randomly and used as the control group. Only patients with histopathologically confirmed SCC were included in the study.

The following parameters were examined: (1) age and race distribution; (2) social class, (3) history of any known aetiological factors/habits, (4) site of tumour, (5) clinical presentation and staging, (6) histological presentation and grading and (7) treatment measures and response.

RESULTS

Age, sex and race distribution

In the <40years age group, the age ranged from 18 to 40 years (mean age 28.2 years). The >40 years age group had an age range of 49 to 88 years (mean age 62.9 years).

The M : F ratio in the <40 years age group was 1.7:1 whilst in the >40 age group was 1:3.6. The racial makeup was 9 Malays, 4 Chinese, 3 Indians and 3 of other race in the <40 years age group, and 13 Indians, 5 Malays and 1 of other race in the >40 years age group.

Socio-economic class

A modification of the socio-economic classification was made on modified Census Report[10]. The socio-economic class distribution showed that both groups were represented in the class IV group (the lower socio-economic class) but this was more obvious in the older population (Fig. 1).

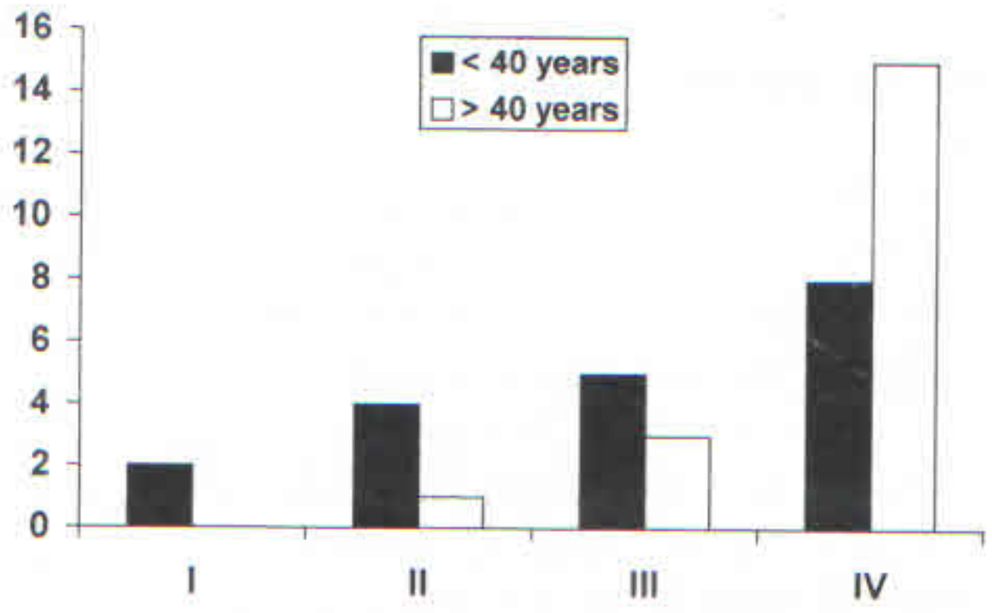

Fig. 1. Distribution of patients according to the various socio-economic class[10] I to IV (I being higher than IV in the socio-economic status).

Aetiological factors

Oral habits practised singly or in combination by the patients include betel chewing, alcohol consumption and cigarette smoking. In the younger age group only two out of 19 patients had significant aetiological habits i.e. one who smoked cigarettes and the other consumed alcohol. In the >40 age group all except two had some significant aetiological factors. Therefore aetiological habits appear to be predominant in the >40 age group compared to the younger age group.

Clinical presentation

Table 1 shows the presentation of oral SCC in the patients in the two groups. Ulcer and/or swelling are the commonest clinical presentation of the tumour in both groups.

Table 1. Clinical presentation of oral SCC in the two age groups.

	< 40 years	> 40 years
Swelling	8	7
Ulcer	10	8
Patch	1	0
Ulcer + Swelling	0	2
Ulcer + Patch	0	2

Site

Figure 2 summarises the sites of involvement in the two groups. Seven out of 19 patients in the younger age group presented with carcinoma of the tongue. By contrast only two out of 19 patients in the older age group presented at this site. Thus, oral SCC tend to occur in the tongue in the <40 age group whilst tumours are more common in the buccal mucosa in the >40 age group.

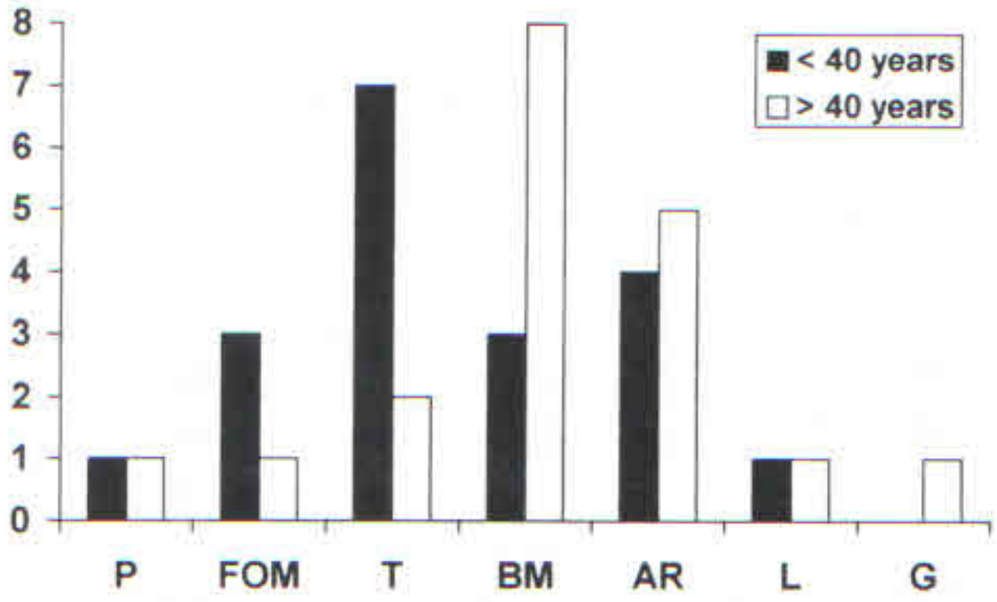

Fig. 2. Distribution of tumour in various sites of the oral region (P=palate; FOM = floor of mouth; T=tongue; BM=buccal mucosa; AR =alveolar ridge; L=lip; G=gingiva).

Clinical staging

All the patients were staged according to the UICC classification[11]. There were no difference between the two groups, the majority of the tumours in both groups were stage III and IV (Fig. 3).

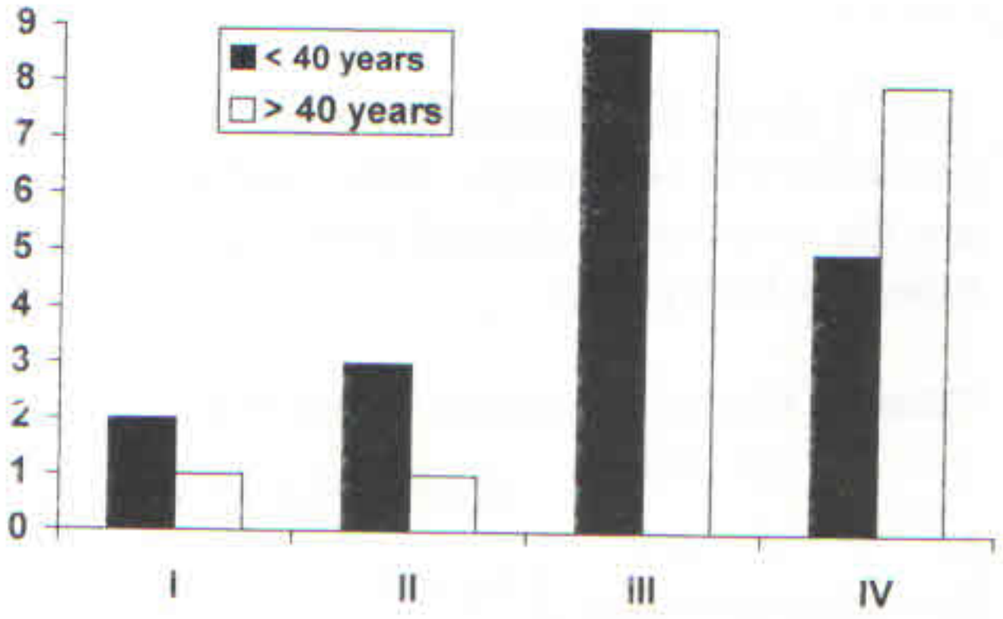

Fig 3. Clinical staging of oral SCC in the patients (Stage I = T1, N0, M0; Stage II=T2, N0, M0; Stage III =T3, N0, M0 or T1-2, N1, M0; Stage IV = T4, N0, M0 or T1-3, N2/3, M0 or T1-3, N0-3, M1).

The tumours in the >40 age group were exophytic (17 out of 19). Those in the <40 age group were mainly infiltrative in nature (13 out of 19).

Histopathological grading

Majority of the patients in both groups had well-differentiated SCC. There were no significant difference in the histological grading between these groups (Table 2).

Table 2. Distribution of patients in the two age groups according to the histopathological grading

	< 40 years (no.)	> 40 years (no.)
WDSCC	11	14
MDSCC	5	4
PDSCC	3	1

(WDSCC = well-differentiated SCC; MDSCC = moderately-differentiated SCC; PDSCC = poorly-differentiated SCC).

Treatment and follow-up

The treatment modalities for the two groups are shown in Fig. 4.

Information on follow-up after 12 months show that in the <40 age group, seven were still alive with no evidence of the disease (36.8%), five were alive with evidence of active disease

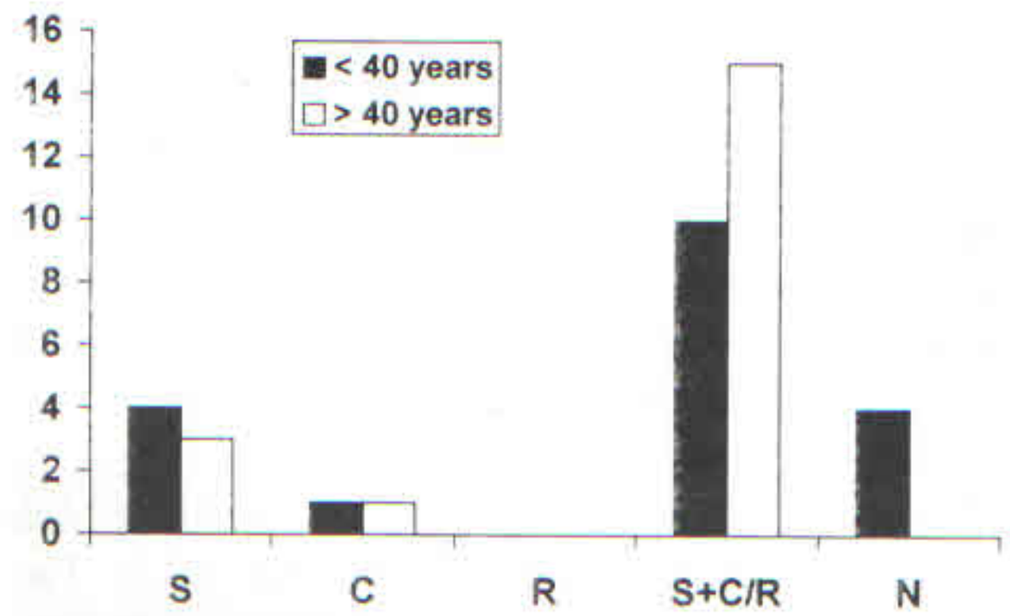

Fig 4. Treatment given to patients (S=surgery; C=chemotherapy; R=radiotherapy; N=not mentioned).

(26.3%), four succumbed to the tumour (21.1%) and three were lost to follow-up (15.7%). In the >40 age group, 11 were alive with no evidence of the disease (78.9)). Four (21.0%) were alive with evidence of the disease, three (15.7%) died of the disease and one (5.3%) was lost to follow-up. More patients in the <40 age group (47.4%) had evidence of active disease or succumbed to it, compared to those in the >40 age group (36.7%)

DISCUSSION

Oral SCC is predominantly a disease affecting patients in the fifth to the eight decades of life with a peak incidence past the fifth decade. In Malaysia, the prevalence of oral SCC is 120-150 new cases a year[12]. The disease is largely seen affecting the older population especially Indian females. This study showed a slight male preponderance in the younger population. Other studies have shown a slight female preponderance[7, 13, 14].

Patients in the younger age group were represented in all socio-economic classes but in the older population, it occurred more frequently in social class IV i.e. the lower social class. This may be due to the fact that most older patients with oral SCC tend to form the lower socio-economic class living in the smaller villages and estates. These patients in addition, may have deficiency states which could contribute to the development of oral SCC.

Although betel quid chewing with or without tobacco, cigarette smoking and alcohol consumption appear to be major risk factors for the development of oral SCC, the results of the

present study and others do not indicate that such aetiological factors are involved in the development of oral SCC in the younger age group[6-9]. Immune deficiency, genetic factors[15], the role of certain viruses[16] or an inherent genetic trait (Histocompatibility Complex Antigen)[17] or the expression of tumour suppressor p53 gene[18] have been incriminated as factors in the development of oral SCC in younger patients.

Histopathological findings of tumours in the present study are consistent with that of Kuriakose et al[7]. Others have suggested that cancer in younger adults tend to be more frequently anaplastic resulting in a more aggressive behaviour and poorer prognosis[6].

The pathological presentation of the tumour in the two groups were similar to the findings of Kuriakose et al[7].

Analysis of treatment response of the tumours showed a slightly poorer response for the younger age group. Unfortunately, the follow-up period was only for 12 months so a valid assessment of the survival rate could not be definitely made. But within this limited period, the difference between the two groups may be attributed to the infiltrative nature of the tumour i.e. the tumour is less readily controlled by therapy as compared to its exophytic counterpart. Other studies have shown conflicting results of survival rates in the younger age groups. Amsterdam et al[8] reported a poorer survival outlook in T1 and T2 oral cancer in the group younger than 35 years. Their 2-year survival was 57% for tongue and 75% for other oral cancers. Carniol and Fried[19] reported comparable stage survival for the younger and older age groups.

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