

RESEARCH COMMUNICATION

Oral Cancer Presentation Among Malay Patients in Hospital Universiti Sains Malaysia, Kelantan

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Abstract

Objective: The objective of this study was to identify the characteristics of oral cancer among Malay patients in Hospital Universiti Sains Malaysia (HUSM), Kelantan. **Methods:** A retrospective record review was conducted from August to December 2006 in HUSM. Of 133 patients with oral cancer diagnosed from 1986 to 2005, 118 were Malay. Data on socio-demographic background, high-risk habits practiced, clinical and histological characteristics, and treatment profile of the patients were obtained. **Results:** Malay patients with oral cancer were predominantly elderly, aged 60 years old and above (51.7%) at the time of diagnosis, with a mean age of 58.1 years (SD 16.81). Most patients were males (64.4%) and the majority of them were married (83.9%). More than half (58.5%) had been smokers, and of those who smoked, 89.9% were males. Some had a betel quid chewing habit (22.9%) but none ever consumed alcohol. The majority of the patients (77.1%) were diagnosed at stage IV. The tongue was the most usual site involved (37.3%) and squamous cell carcinoma was the most common histological type seen (75.4%). **Conclusions:** The prevalence of oral cancer among Malay patients in HUSM is high (88.7%). It is predominantly found in elderly males and the majority of cases present at advanced stage.

Key Words: Oral cancer - epidemiology - Malay population - Kelantan

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Introduction

Oral and pharyngeal cancer is the sixth most common cancer worldwide (Warnakulasuriya, 2008). In year 2002, 274,000 cases of oral cancer were diagnosed (Parkin et al., 2005). A marked geographical variation in the incidence was noted. High incidence rates were reported in the Asia region (India, Sri Lanka, Pakistan and Taiwan), parts of Europe (France, Hungary, Slovakia, and Slovenia), parts of Latin America and the Caribbean (Brazil, Uruguay and Puerto Rico), and in the Pacific region (Melanesia and Papua New Guinea) (Warnakulasuriya, 2008). This is largely attributed to exposure to specific risk factors for oral cancer (Parkin et al., 2005).

Several risk factors have been identified to contribute to the development of oral cancer, and the most established are tobacco use, excessive alcohol consumption, and betel quid chewing habit (Warnakulasuriya, 2008). Use of all forms of tobacco has been associated with oral cancer, contributing to over 85% of oral cancer deaths among men in the industrialised countries (Johnson, 2001). While alcohol drinking by itself increased the risk for oral cancer by three-times and accounted for over 50% of oral cancer cases in never smokers (Fioretti et al., 1999), synergistic effects of both tobacco and alcohol have been reported (Blot et al., 1988; Ide et al., 2008). There is also good evidence that betel quid chewing significantly increased

the risk for oral cancer both independently and in combination with cigarette smoking and alcohol drinking (Chen et al., 1999; Chung et al., 2005; Yang et al., 2005).

The risk of developing oral cancer increases with age, affecting predominantly older persons aged 50 and above (Howell et al., 2003; Hirota et al., 2008; Ries et al., 2008). However, there has been an increase in oral cancer incidence in the under 40 age group, possibly due to the increasing tobacco and alcohol use among the youths (Lantz, 2003; Wen et al., 2005; Leatherdale et al., 2008). There is also a higher tendency in males to contract oral cancer compared to females, largely attributable to heavier indulgence in the risk habits particularly tobacco and alcohol use (Johnson, 2001).

Oral cancer can be treated by surgical excision, chemotherapy, and radiation therapy. In many cases, a combination of treatments is used. Nevertheless, despite advances in treatment modalities, oral cancer still has a generally negative prognosis with high rates of morbidity and mortality. The survival of patients with oral cancer remains low, with five-year survival rate of less than 50% mainly due to late detection where patients are already at an advanced stage of disease at the time of diagnosis. Other factors that influence patient survival include anatomic site, size, clinical spread, lymph node involvement, histological type and treatment modality (Yeole et al., 2003; Chen et al., 2004; Vallecillo-Capilla

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et al., 2007).

In Malaysia, the Indian ethnic group as well as the Indigenous people of Sabah and Sarawak have been considered as having a higher cancer risk due betel quid chewing habit (Ministry of Health Malaysia, 2002). An epidemiological survey of oral mucosal lesions in year 1993/1994 reported a national oral cancer prevalence of 0.04% with the highest oral precancer prevalence amongst the Indians (4.0%) and the indigenous people of Sabah and Sarawak (2.5%) (Zain et al., 1997). Nevertheless, in Kelantan, patients of Malay ethnicity were found to be the major group of oral cancer patients (Ghazali et al., 2006). Therefore, this study aimed to explore the characteristics of oral cancer in Malay patients in Hospital Universiti Sains Malaysia (HUSM), Kelantan.

Materials and Methods

Introduction to the study area

The state of Kelantan is situated in the East Coast of Peninsular Malaysia. Based on the last population and housing census in year 2000, the estimated population of Kelantan was 1.4 million, with an almost equal ratio of males (50.01%) and females (49.99%) (Department of Statistics Malaysia, 2001). The Malay ethnic group formed the largest group (95.1%), followed by the minorities comprised of the Chinese (3.7%), Indian (0.3%), other Bumiputra (0.8%) and others (1.0%).

HUSM is situated in Kubang Kerian, Kelantan and is one of the two tertiary hospitals in Kelantan. The other hospital is Hospital Raja Perempuan Zainab II (HRPZ II) in Kota Bharu. These two hospitals are the referral centers for the management of oral cancer in Kelantan. Due to its function as a teaching hospital, HUSM is equipped with better facilities and more specialists compared to HRPZ II. Therefore, most oral cancer cases seen in HRPZ II will eventually be referred to HUSM for further treatment after biopsy. In addition, referrals of oral cancer patients also come from other state hospitals.

Study design and sample population

A retrospective record review was conducted from August till December 2006 in HUSM. Of 133 patients with oral cancer diagnosed from 1st January 1986 to 31st December 2005, 118 were Malay patients. Oral cancer cases in this study were identified using the International Classification of Diseases (ICD), which is the international standard diagnostic classification used to classify diseases and other health problems. The ninth edition of the ICD (ICD-9:140-145) was used for oral cancer cases diagnosed before the year 2000, and the tenth edition (ICD-10: C00-C08) was used for cases diagnosed from year 2000 onwards. Ethical approval to conduct the study was obtained from the Research and Ethics Committee, Universiti Sains Malaysia (USM). A standardized form was used to assist in data extraction.

Data Collection

Socio-demographic characteristics of patients at the time of diagnosis such as age, sex, marital status and occupation were recorded. High-risk habits practiced by

the patients were also noted. Details on clinical characteristics of the tumour such as the size and site, the Tumour-Node-Metastasis (TNM) classification and lymph node involvement were captured. Tumours were classified as localized if they were confined to the site of origin, regional if they have extended into surrounding tissues or into regional lymph nodes, and distant if they have spread to other parts of body remote from the primary tumour. From histopathology reports, information on the histological type of the tumour was obtained. Treatment received by the patients including intentions and types of treatment, as well as treatment related complications was noted. Data entries and analyses were done using SPSS software (v12.0, SPSS Inc., Chicago).

Results

There was a general increase in the number of Malay patients diagnosed with oral cancer in HUSM from 1986 to 2005. From 1986 to 1990, 10.2% oral cancer cases were reported, following which there was a slight decrease to 5.9% from year 1991 to 1995. The cases steadily increased to 37.3% in year 1996 to 2000 and escalated to 46% in year 2001 to 2005. The mean age of patients was 58.1 years (SD 16.13). Patients were predominantly elderly (51.7%), aged 60 years old and above. Most of the patients were males (64.4%) and the majority of them were married (83.9%). Almost half of the patients (49.1%) were still working at the time of diagnosis, and most of them were manual workers (77.6%). Data on the socio-demographic characteristics of Malay patients with oral cancer in HUSM are shown in Table 1.

High-risk habits practiced by the patients are presented in Table 2. Most of the patients (58.5%) had been smokers, and the majority of them (89.9%) were males. None of the patients ever consumed alcohol, and only 22.9% of the patients had betel quid chewing habit. Clinical characteristics of oral cancer among Malay patients in HUSM are presented in Table 3. The majority of patients (56.8%) presented with tumours sized more than 6cm and 79.7% had lymph node involvement. Oral cancer at TNM Stage IV (75.2%) was most frequently presented, followed by stage III (12.0%), stage II (89.8%) and stage I (3.0%).

Table 1. Socio-demographic characteristics of Malay patients with oral cancer in HUSM (n=118)

Socio-demographic characteristic	Frequency	(%)
Age (years)	< 30	6 (5.1)
	30 – 39	9 (7.6)
	40 – 49	19 (16.1)
	50 – 59	23 (19.5)
	> 60	61 (51.7)
Sex	Male	76 (64.4)
	Female	42 (35.6)
Marital status	Single	6 (5.1)
	Married	99 (83.9)
	Widowed	13 (11.0)
Occupation	Manual worker	45 (38.1)
	Skilled worker	13 (11.0)
	Housewife	29 (24.6)
	Unemployed	24 (20.3)
	Pensioner	7 (6.0)

Table 2. High-risk habit Practices among Malay Patients with Oral Cancer in HUSM

High-risk habits	Males (n=76)	Females (n=42)	Total (n=118)
Smoking			
Ever	62 (89.9)	7 (10.1)	69 (58.5)
Never	14 (28.6)	35 (71.4)	49 (41.5)
Quid chewing			
Ever	16 (59.3)	11 (40.7)	27 (22.9)
Never	60 (65.9)	31 (34.1)	91 (77.1)
Alcohol Drinking			
Ever	0 (0.0)	0 (0.0)	0 (0.0)
Never	76 (64.4)	42 (35.6)	118 (100)

Table 3. Clinical Characteristics of Oral Cancer Malay Patients in HUSM

Clinical characteristics	Frequency	(%)
Tumour size (cm) ≤ 2.0	6	(5.1)
2.1 – 4.0	19	(16.1)
4.1 – 6.0	26	(22.0)
≥ 6.1	67	(56.8)
Lymph node involvement		
No	24	(20.3)
Yes	94	(79.7)
TNM stage		
I	3	(2.5)
II	12	(10.2)
III	12	(10.2)
IV	91	(77.1)
Cancer spread		
Local	30	(25.4)
Regional	57	(48.3)
Distant	15	(12.7)
Unknown	16	(13.6)
Anatomic site		
Lip	7	(5.9)
Tongue	44	(37.8)
Major salivary gland	10	(8.5)
Gum	8	(6.8)
Floor of mouth	8	(6.8)
Unspecified parts	41	(34.7)
Histological type		
SCC	89	(75.4)
Others	29	(24.5)

SCC, squamous cell carcinoma

Table 4. Treatment profile of Malay patients with oral cancer in HUSM

Treatment profile	Frequency (%)
Treatment intent	
Palliative	15 (19.0)
Curative	64 (81.0)
Type of treatment	
Surgery (S)	26 (32.9)
Radiotherapy (R)	11 (14.0)
S + R	28 (35.4)
Chemotherapy*	14 (17.7)
Treatment complication	
None	29 (36.7)
Local	32 (40.5)
Systemic	4 (5.1)
Local and systemic	14 (17.7)

*alone or in combination

In most patients (59.4%), the cancer spread was considered regional. The most common oral cancer site among Malay patients in HUSM was tongue (37.3%). Other unspecified parts of oral cavity such as buccal mucosa and palate made up for the remaining sites (34.7%), followed by major salivary gland (8.5%), floor of the mouth (6.8%), gingival (6.8%), and lip (5.9%). Squamous cell carcinoma (SCC) was the most common type of oral cancer diagnosed

(75.4%). Other histological types include sarcoma, basal cell carcinoma and clear cell carcinoma.

Seventy-nine Malay patients with oral cancer (66.9%) were treated. Untreated patients were those who either died before treatment or refused treatment for various reasons including self-use of alternative medications and therapies. The treatment profiles of those treated are shown in Table 4. The majority of them (81%) were treated with curative intention. Some patients (35.4%) underwent surgery followed by radiotherapy, and some (32.9%) were treated by surgery alone. A small number were treated with radiotherapy alone (13.9%), and the remaining (17.7%) were treated with chemotherapy, either alone or in combination. Most of the treated patients (75.4%) had complications, either local, systemic or both.

Discussion

The characteristics of oral cancer in Malay patients were investigated in this study. Socio-demographic background, high-risk habits practiced, details on clinical and histological presentation, as well as treatment profiles were captured. Results showed that most aspects of oral cancer presentation in this study had the typical pattern as described in the literature. The cases were high among males in the older age group with risk habits, and the majority of cases were diagnosed in the late stages.

The incidence of oral cancer increases with age, predominantly in people aged 50 and above (Howell et al., 2003; Chen et al., 2004; Yang et al., 2005; Subapriya et al., 2007). Likewise, most Malay patients with oral cancer in this study were diagnosed at the age of 50 and above (71.2%). However, it was noted that there is a considerable variation in the reported mean age of patients at the time of diagnosis. While most studies reported a mean age of more than 60 years old (Arbes et al., 1999; Kerdpon and Sriplung, 2001; Chandu et al., 2005; Yang et al., 2005), a study in Taiwan reported a younger mean age of 54 years old (Chen et al., 2004), and a study in India has a mean age of 51 years old (Subapriya et al., 2007). This variation in the mean age of oral cancer patients may reflect either an outcome of an improved screening program where lesions are detected in patients at earlier ages, or that the incidence is increasing among the younger age groups because of exposure to deleterious risk factors.

Betel quid chewing is a popular past time habit in the tropical areas, particularly in the Pacific Islands, South Asia, and Southeast Asia countries since ancient times (Gupta and Ray, 2004). In some cultures, betel quid has high symbolical value and plays an important role in traditional and religious ceremonies. In its most basic form, betel quid is a combination of areca nut and slaked lime wrapped in betel leaves (Piper betel). The acidic areca nut is the main psychoactive ingredient that provides stimulation while the lime acts to reduce the astringents taste. Tobacco is often added to the package. It is a known fact that betel quid, with or without tobacco, is one of the major risk factors for oral cancer (Jacob et al., 2004; Chen et al., 2008). In countries where such habits were prevalent, oral cancer was one of the most common cancers

(Ariawardana et al., 2007; Subapriya et al., 2007; Tovosia et al., 2007; Thomas et al., 2008).

In this study, betel quid chewing habit was practiced among 22.9% of patients. An earlier study by Ng et al. (1986) among oral cancer patients in Malaysia reported a much higher prevalence of 85%. It seems that this traditional habit is dying off among the younger generation in Malaysia, perhaps simply because it does not fit into the modern lifestyle. In Thailand, a decline in betel quid chewing habit has also been reported, although it is an irony that there is a likelihood that the habit was discarded in favor of smoking, another risk factor for oral cancer (Reichart et al., 2003).

Most oral cancer patients in HUSM were smokers (58.5%), and the majority of those who smoke were males (89.9%). These findings are similar with other studies that showed the majority of patients with oral cancer and precancerous lesions were smokers (Chung et al., 2005; Hirota et al., 2008; Ide et al., 2008). None of the Malay patients with oral cancer in this study consumed alcohol. This could be due the fact that the Malay patients were also Muslim, and alcohol consumption is forbidden by the religion.

The majority of oral cancer patients in this study (47.4%) were diagnosed from year 2000 to 2005, which is probably be due to the launch of nationwide oral cancer screening program in year 2002 by the Oral Health Division, Ministry of Health Malaysia (Ministry of Health Malaysia, 2002). In general, the number of Malay patients diagnosed with oral cancer seemed to increase over the twenty-year period from 1986 to 2005 in HUSM. A similar increasing incidence of oral cancer was also observed in Nova Scotia from year 1983 to 1997 (Howell et al., 2003). Oral cancer mortality in most European countries also registered a rising trend in 1980 to 1999 (La Vecchia et al., 2004). On the other hand, rates of oral cancer incidence and mortality have declined over the past few decades in the United States (Canto and Devesa, 2002). Nevertheless, these downward trends were not consistent within the population, and they are in fact increasing in specific segments of some states (Kingsley et al., 2008).

Factors that affect survival of patients with oral cancer include stage of tumour at time of diagnosis, anatomic site, size, clinical spread, lymph node involvement, histological type and treatment modality (Yeole et al., 2003; Chen et al., 2004; Vallecillo-Capilla et al., 2007). The survival rates of oral cancer have been poor largely because the lesion had already reached a late stage by the time of diagnosis (Yeole et al., 2003; Vallecillo-Capilla et al., 2007; Sargeran et al., 2008). Findings from this study are in line with other studies that most oral cancer cases are diagnosed when they are well advanced (Chandu et al., 2005; Sargeran et al., 2008; Doobaree et al., 2009). It was further noted that the percentage of patients diagnosed at stage IV in this study (77.1%) was much higher compared to others.

The late presentation of oral cancer cases can be due to both patient's delay in seeking care, which is time lapse from the onset of symptoms until the initial consultation with the healthcare provider, and professional delay, which is the period that the patient is under professional care

until a confirmed histological diagnosis is made (Scott et al., 2006). Of these, delay from the time symptoms first appeared to the initial health care visit forms the larger proportion of total delay period (Abdo et al., 2007; Peacock et al., 2008). Reasons for patients' delay include misinterpretation of symptoms for something minor that would recover naturally, misattribution of symptoms to oral cancer due to limited knowledge, engagement in coping strategies like self-adaptation and self-treatment of symptoms, and difficulties in accessing the health care facilities (Scott et al., 2006).

Tongue was the most common site affected in this study (37.3%), and in most patients (59.4%) the cancer spread was considered regional. These findings are similar with other studies (Kerdpon and Sriplung, 2001; Yeole et al., 2003; Hirota et al., 2008). Nevertheless, it is necessary to highlight that a certain level of uncertainties in determining the intraoral sub-sites of tumour origin, particularly in advanced stages, may occur (Yeole et al., 2003). This is due to the complexity of the anatomical structures in the oral cavity such that the original site of the tumour can be easily misclassified. Further, tumours that arise from adjacent sites may both spread and become overlap easily.

The main treatment options for patients with oral cancers are surgery, radiation therapy, and chemotherapy, which may be used either alone or in combination. While the type of treatment received may affect the survival of oral cancer patients, the choice of treatment to be given to the patient is also influenced by other factors that affect patient survival (Chen et al., 2004). Two-third of oral cancer patients in this study (66.9%) underwent treatment. Of those treated, the majority (81.0%) were treated with curative intention while the remaining were given palliative treatment to control pain and other symptoms, to relieve the side effects of therapy, and to ease emotional and practical problems. The combination of surgery and radiotherapy was most frequently done (35.4%). This may be due to the fact that surgical resection followed by radiotherapy is currently considered the gold standard of treatment for oral cancer patients, particularly those at early stages (Zheng et al., 2008). Treatments of oral cancers often lead to side effects, depending on the type and intensity of therapy being used. The majority of patients in this study (63.3%) developed complications following treatments.

In conclusion, the prevalence of oral cancer among Malay patients in HUSM was predominant among males in the older age group, and the majority of cases were presented at the advanced stages. This study provided an insight into the characteristics of Malay patients with oral cancer including the risk habits practiced, and highlighted the distribution of important prognostics factors of oral cancer survival among the patients. These findings would greatly benefit the policy makers in planning appropriate strategies to improve the current oral cancer prevention program in the population. Health education to the public should increase emphasis on the early symptoms, risk factors and risk habits particularly smoking, self examination instructions, and regular visits to the dentist. Likewise, professional training program should also be

in place to ensure that the dentists are well-equipped with updated knowledge on the issue, particularly in smoking cessation activities and pre-cancerous lesion detection.

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