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Factors Delaying the Diagnosis of Oral Cancer: A Hospital Based Study

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Abstract
The term oral cavity refers to lips, buccal mucosa, alveolar ridges, retro molar trigone, hard palate, floor of the mouth and anterior two-thirds of the tongue. Oral cancer or oral cavity cancer, a subtype of head and neck cancer, is any cancerous tissue growth located in the oral cavity. India has about one third of oral cancer cases in the world.In India, 20 per 100000 populations are affected by oral cancer which accounts for about 30% of all types of cancer. In general, more men suffer and die from oral cancer than women. Worldwide, oral cancer has one of the lowest survival rates that remain unaltered despite recent therapeutic advances. Since time immemorial, this problem has been a great financial as well as social burden on the society, especially in the Indian subcontinent. Oral cancers can be easily detected due to ease of access to the lesions in the oral cavity. Despite this fact, many patients present with advanced cancers not amenable to surgical treatment. Almost half of the oral neoplasms are diagnosed at stages III or IV, with 5-year survival rates ranging from 20% to 50% depending upon tumor sites. Delay at presentation in such patients is an important prognostic factor since timely surgical intervention is of paramount importance for a successful therapy. In our study we aimed to find out the chief causes of delay in seeking specialist care in advanced oral cancer patients. Out of 127 patients presenting with advanced cancer at the OPD in our study, the major causes for delayed presentation in our part of the country were patient ignorance, seeking alternative non allopathic remedies and also cost crunch to some extent.

INTRODUCTION

The term oral cavity refers to lips, buccal mucosa, alveolar ridges, retro molar trigone, hard palate, floor of the mouth and anterior two-thirds of the tongue. Oral cancer or oral cavity cancer, a subtype of head and neck cancer, is any cancerous tissue growth located in the oral cavity[1].The American Joint Committee on Cancer (AJCC) staging system divides sites of malignancy originating in the head and neck into six major groups: lip and oral cavity, pharynx, larynx, nasal cavity and paranasal sinuses, major salivary glands, and thyroid. The oral cavity is lined by nonkeratinized stratified squamous epithelium with minor salivary glands throughout the submucosa and within the muscular tissue of the tongue.Risk factors for oral cavity carcinoma as well as Head and neck cancers are Tobacco, Alcohol, Areca nut/pan masala, Poor nutrition Inherited conditions (inc. Fanconi anaemia, Li-Fraumeni syndrome) and Human papillomavirus (specifically HPV16).Squamous cell carcinoma (SCC) is predominant histology of oral cavity cancers as they arise mainly from the mucosal epithelium, though malignant salivary gland tumours from the minor salivary glands are a rare but important group of lesions. Staging of head and neck cancer follows the TNM classification established by the AJCC. Proper treatment of HNSCC requires careful evaluation and accurate staging, both clinically and radiographically.

India has about one third of oral cancer cases in the world[2]. In India, 20 per 100000 population are affected by oral cancer which accounts for about 30% of all types of cancer.In general, more men suffer and die from oral cancer than women[3]. Worldwide, oral cancer has one of the lowest survival rates that remain unaltered despite recent therapeutic advances[4]. Since time immemorial, this problem has been a great financial as well as social burden on the society, especially in the Indian subcontinent. Oral cancers can be easily detected due to ease of access to the lesions in the oral cavity. Despite this fact, many patients present with advanced cancers not amenable to surgical treatment. Almost half of the oral neoplasms are diagnosed at stages III or IV, with 5-year survival rates ranging from 20% to 50% depending upon tumor sites[4].

Delay at presentation in such patients is an important prognostic factor since timely surgical intervention is of paramount importance for a successful therapy[5]. In this study we are investigating factors for delayed presentation of patients so that we can take appropriate measure accordingly for the benefit of people .

MATERIALS AND METHODS

The study was conducted on 127 patients suffering from biopsy proven oral cancer attending the cancer OPD of the department of surgery, GSVM medical college, Kanpur. It was conducted for 8 Months from August 2017 to March 2018. All the patients underwent a clinical staging in accordance with the TNM system of the American Joint Commission of Cancer Staging at the time of presentation[6]. Patients with advanced oral cancers (stage III and IV) were included in the study. A detailed questionnaire was constructed which included the patient details, TNM staging of the cancer and a list of reasons for the delay in presentation to our OPD since the time of noticing of the lesion. In case of multiple reasons given by the patient, all the relevant reasons were included. The time of first noticing of the lesion was also noted. This was defined as the time when the patient noticed the lesion for the first time ever which subsequently was diagnosed as oral cancer. This duration was mostly an approximate value as told by the patient in months or weeks.

Further, two broad categories have been defined: “Patient delay” and “Professional delay”. Patient delay is the time from the first noticing of a symptom by the patient to his/her first visit to a primary care clinician. Professional delay is the time between the patient entering professional care and the start of a definitive treatment[7].Those patients who were being treated by non oncology specialists for a significant duration of time were considered as professional delay, since they were treating them symptomatically rather than a proper oncological treatment.

RESULTS AND DISCUSSIONS

Out of the 342 newly diagnosed oral cancer patients who registered to our oncosurgery OPD from August 2020 to March 2021, 127 had advanced disease. This shows the magnitude of the problem as 37.1% of the oral cancer patients were advanced and hence non operable. These 127 patients were included in the study out if which 80.3% were males. Mostly patients (72.4%) were over the age of 35 years.

The average duration of delay with which the patients presented was 9.96 months.

Oral cancer is a major problem in the Indian subcontinent. It is amongst the top three types of cancers in the country. Age-adjusted rates of oral cancer in India is quite high, that is, 20 per 100,000 population and accounts for over 30% of all cancers in the country[2].

Men are affected morethan females due to greater tobacco use and sunlight exposure from outdoor occupation[3].

A recent meta-analytical study has shown that diagnostic delay is the main reason leading to more advanced stages in oropharyngeal cancers. The probability for delayed patients to present an advanced stage of oral cancer at diagnosis in this report was 25% higher than that of non-delayed patient[8].

Fig.1: 43 year old male with stage IV carcinoma of the left buccal mucosa with diagnostic delay of 6 months

Fig.2 and 3: 55 year old male with stage IV carcinoma of the left lower alveolus with diagnostic delay of 9 months

Fig. 4: 52 year old male with stage IV carcinoma of the floor of mouth with diagnostic delay of 7 months

The mean time of delay in presentation of the patients in our study was found to be 9.96 months.

It has been estimated that about 50% of patients with oral cancer make a first visit to a healthcare professional within 1-2 months of becoming aware of symptoms, while about 20-30% of patients delay seeking help for more than 3 months[7].

Men outnumbered women in terms of delay. But this could be related to the fact that men are also more commonly affected by oral cancer than women[9].

Fig.5: 62 year old male with stage IV carcinoma of the floor of mouth extending all along the neck with diagnostic delay of 11 months

Fig.6: 34 year old male with stage IV carcinoma of the Rt. Vestibule extending all along the entire Rt. Side of the face with diagnostic delay of over a year.

Fig.7: 30 year old male with stage IV carcinoma of the Rt. Vestibule with a diagnostic delay of 8 months.

Fig.7: 50 year old male with stage IV carcinoma of the Rt. Vestibule extending all along the entire Rt. Side of the face with diagnostic delay of over a year.

Oral cancers are uncommon before the age of 35 years[9]. The average age of presentation in our study was 44.9 years with 72.4 % patients lying over the age of 35 years. However, patients as young as 20 years also presented to us with advanced stages of the disease. Hence age cannot be considered as a deciding factor in determining the gravity of this problem.

The most common site of occurrence of advanced oral cancer was the buccal mucosa (66.9%) followed by the tongue (22.8%) in our study. Though it varies from region to region, the buccal mucosa is believed to be the most common site for oral cancer in South and Southeast Asia, while in other regions the tongue is the most common site[10]. Another reason being that buccal mucosa cancers are more prone to be ignored and hence missed as it is more internally located as compared to other cancers of the oral cavity and more often than not mistaken as a dental problem. Such problems are not met with cancers like those of the lip as they are immediately detected by the patients and hence present early.

Several risk factors are implicated in the development of oral cancer, of which the most common and established are tobacco smoking and betel quid chewing. Nevertheless, many patients are diagnosed with oral cancer despite abstaining from known lifestyle or environmental risk factors where factors like genetic susceptibility are believed to play the causative role. Hence, it is important for the public and the clinicians to be completely aware of the risk factors for oral cancer and it is prudent for dentists to look carefully for early signs of oral cancer, while routine examination of the oral cavity especially in patients with history of known risk factors[11].

Lack of knowledge and various misconceptions regarding the topic of cancers as a whole are very important factors leading to diagnostic delay and hence presentation of the patient in advanced stages of the disease. Inability of the patient to recognize the early symptoms of oral cancer makes it imperative to spread knowledge about the disease. There has been a widespread myth among the people that needle or core biopsy and surgery can lead to a spread of the disease. This has resulted in patients avoiding biopsy and surgery even after advised to do so. Early diagnosis is crucial for improving the survival rate. If the detected lesions are small localized and treated efficiently; survival rates of 70 to 90% can be achieved[12].

In our study 36.2% patients lacked adequate knowledge regarding their condition with most of them believing that it will heal on its own and there is nothing to worry about. Such patients hence continued their high risk behavior such as tobacco use and hence worsened their condition. Out of the remaining

Table 1: Showing age distribution of patients presenting with advanced oral cancer

Age Group (in years)	No. of Patients	Percentage (%)
0-20	01	0.8
21-30	13	10.2
31-40	43	33.9
41-50	34	26.8
51-60	28	22.0
>60	8	6.3

Table 2: Showing the gender distribution of patients presenting with advanced oral cancer

Gender	No. of Patients	Percentage (%)
Male	102	80.3
Female	25	19.7

Table 3: Showing the frequency distribution of various sites of lesion in patients presenting with advanced oral cancer

Site of Lesion	No. of Patients	Percentage (%)
Buccal Mucosa	85	66.9
Tongue	29	22.8
Alveolus	06	4.7
Palate	03	2.4
Floor of mouth	02	1.6
Lip	02	1.6

Table 4: Showing the primary reason for the delay in diagnosis among patients of advanced oral cancer

Reason for Delay	No. of Patients
Lack of Knowledge	46
Being treated by Ayurveda/Homeopathy/Local treatment	42
Being treated by Non-Oncology specialist	39
Mistaken for Dental Problem	14
Monetary issues	11
Fear of Surgery	8
Others	3

patients who did perceive their lesion as somewhat problematic, a major 33.1% patients resorted to Ayurvedic or Homeopathic treatment with some also practicing local treatment as prevalent in their community. 6.3% patients also believed that surgery or biopsy would cause their cancer to spread to other parts of the body.

Patients have also to be made aware of the premalignant conditions of oral cancer. Persistent erythroplastic lesions are the most frequent clinical presentation of early carcinomas along with erythroleukoplastic(23%) and leukoplastic lesions (21%) may ease an early diagnosis of oral cancer[13-16].

A simple yet effective concept of oral self examination should be encouraged especially in high risk groups. A regular visit to the dentist or a physician along with a regular practice of self examination of the oral cavity can help detect carcinomas and premalignant lesions at a relatively early stage and hence improve the overall morbidity and mortality of the patient. This can be the cheapest yet effective method of early detection of oral cancers. Similar concept in other cancers like breast cancers has played a vital role in early detection and treatment and hence improving the survival[16]. Despite such a high incidence of oral cancer in the Indian subcontinent, till date there has not been any accepted screening program for the same. Such screening programs started in countries like China have led to almost half of the oral cancers diagnosed in stages I and II, with a declining trend in oral cancer mortality rates[18].

In most developed countries screening is available for breast cancer, cervical cancer, colonic cancer and prostate cancer[19,17].

An important aspect here is that the attending physician or dentist should be quick in diagnosing the disease and avoiding delay by either initiating correct treatment or immediate referral of the patient to an oncology expert. In this way, the “professional” delay can be avoided. Our study showed a significant ($p< 0.05$) number of patients (30.7%) who were being treated by a non-oncology specialist, hence constituting the “professional” delay.

Financial constraint has been the reason of delay for some patients. It should be emphasized that simple tests like scrape cytology or tissue biopsy are enough to diagnose oral cancers even in their initial stages and expensive imaging and diagnostic tests are mostly unnecessary and futile in terms of diagnosis.

CONCLUSION

The reasons for the delay in diagnosis of oral cancer in this part of the world, are mainly related to the patient factors, and can be easily avoided by taking simple measures like proper education, better awareness and some form of screening, like oral self examination. The “professional delay” also constituted a significant bulk of the diagnostic delay making it imperative for the physicians and other health care providers to understand that they act as a major bridge between the patients and the oncologists, so that treatment can be started in time. Such simple measures, if taken properly, can help decrease a great amount of financial and psychosocial burden from the society.

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