

## KNOWLEDGE, ATTITUDE AND AWARENESS OF ORAL CARCINOMA AMONG DENTAL PRACTITIONERS –A SURVEY

Jay Mahesh Khatri, \* Surabhi Goyal, \*\* Mitesh Parekh, \*\*\* Jyothi PA, †  
Chetan Hoshing, †† Syed Akifuddin †††

\* Lecturer, Department of Orthodontics, Dr D Y Patil Dental College, Pune, Maharashtra, India

\*\* Senior Lecturer, Department of Orthodontics and Dentofacial Orthopaedics, Pacific Dental College and Research Center, Upaipur, Rajasthan, India

\*\*\* Reader, Department of Oral Pathology & Microbiology, Darshan Dental College and Hospital, Udaipur, Rajasthan, India

† Reader, Department of Prosthodontics, Crown and Bridge, KIMS Dental College and Hospital, Amalapuram, Andhra Pradesh, India

†† Professor, Department of Prosthodontics, Yashwantrao Chavan Dental College and Hospital, Ahemadnagar, Maharashtra, India

††† Reader, Oral & Maxillofacial Surgery, Daswani Dental College, Kota, Rajasthan, India

### ABSTRACT

**Background:** Oral cancer is frequently heralded by a distinguishable pre-malignant lesion and the progression from dysplasia. Early diagnosis of oral and oropharyngeal malignancy is important to ensure maximal prognosis. Thus, the present study was planned to investigate awareness among dentists in Pune city by assessing attitude and knowledge regarding oral cancer. **Methodology:** The cross-sectional survey was carried out among 120 dentists practicing in the city of Pune and in the periphery of the city. A self-administered pretested questionnaire was used to record age, gender, additional training, knowledge and attitude regarding oral lesions. Chi-square test was performed and the level of significance was set at  $p < 0.05$ . **Results:** 14.1% respondents were using adjunctive screening tools (toluidine blue or direct fluorescence) at their clinic and 29.17% were performing biopsy of the suspected lesions. Significant differences existed between educational qualification and adjunctive use of screening tools ( $p=0.02$ ), performance of biopsy at dental clinics ( $p=0.05$ ) and in relation to educational program attended ( $p=0.004$ ) by respondents. **Conclusion:** The study concludes that a gap exists among dentists regarding knowledge about early screening of oral cancer and there is a need to reinforce the current guidelines via time-to-time workshops and additional training programs to educate and motivate patients to spend a healthy life.

**KEYWORDS:** Squamous cell carcinoma; extra oral examination; biopsy; toluidine blue; fluorescence imaging

### INTRODUCTION

The oral cavity is generally a common location for various premalignant and malignant lesions. There has been found an association between ill-fitting dentures, cigarette smoking, alcohol consumption, tobacco chewing with pathological lesions, both benign and malignant.<sup>[1]</sup> Unlike other parts of the body, oral cancer examination does not possess any embarrassment or discomfort to the patient. As this location is easily accessible and knowledge of dentist regarding clinical presentation i.e. size, location, colour, duration of lesion can result in diagnosis and early detection of the oral cancer. About 90% of oral carcinomas are squamous cell carcinoma.<sup>[2]</sup> They constitute a major health problem in developing countries, representing a leading cause of death.<sup>[2,3]</sup> It has been approximated that the use of tobacco and alcohol account for up to 80 percent of cases of squamous cell carcinoma of the head and neck.<sup>[4]</sup> The synergistic effect of alcohol and smoking increases the risk of developing head and neck cancer being as much as 200 times greater for heavy smokers and drinkers. A subset of oropharyngeal squamous cell carcinoma is associated with human papillomavirus (HPV) infection, particularly with high-risk type 16 (HPV-16). Oral infection with HPV-16 confers an approximately 50-fold increase in risk for HPV-positive oropharyngeal squamous cell carcinoma.<sup>[5]</sup> Most of the health care providers agree that early detection improves 5 year survival rates of oral pharyngeal

carcinoma. Awareness of etiology and clinical presentation of oral cancer, early detection and knowledge about novel trends among dentists is one of the best ways to manage and prevent oral cancer.<sup>[2]</sup> Thus, the present study was planned to investigate awareness among dentists in Pune city by assessing attitude and knowledge regarding oral cancer.

### **MATERIALS & METHODS**

The cross-sectional survey was carried out among 120 dentists practicing in the city of Pune and in the periphery of the city. The participants were selected by random sampling. A self-administered pretested questionnaire was used to record age, gender, additional training (Table 1), knowledge and attitude regarding oral lesions (Table 2). The verbal and informed consent was taken from the study group and confidentiality of the participants was guaranteed by coding of the questionnaires. The survey form consisted of questionnaire to evaluate the practicing attitude towards early detection of early cancer. The questionnaire was pilot tested on a small group of dentists who were requested to complete it and to indicate any questions that they found unclear. The dentists were approached personally. Results were expressed as a number and percentage of respondents for each question and were analyzed using the SPSS Version 17 software. Educational qualification was correlated with adjunctive use of screening tools and performance of biopsy at dental clinics. Chi-square test was performed and the level of significance was set at  $p < 0.05$ .

### **RESULTS**

A total of 120 dentists participated in the present study of which 77% were male and 23% were female. Among the dentists, 73% were BDS and 27% were MDS. All dentists were aware about the role of dentist in early screening of the oral cancer. Among the respondents 58.33% dentists assured that they thoroughly examine the oral cavity for other lesions when patient demands specific treatment only where as only a small proportion of dentists i.e. 14.17% performed extra oral examination on new patient cases. Among the respondents, 94.16% dentists used to aware the patient about symptoms of appearing oral lesion. In suspected oral lesion patients, 80.8% respondents enquire about oral habits, quantity and frequency, duration of tobacco use and alcohol consumption and life style of the patient

and also counsel the patients for the withdrawal of the habit. Regarding appearance of oral cancer 83.84% respondents were aware that it can appear as painless nonhealing mouth ulcer or white or red patch, only 17.5% dentists were aware of field defect phenomenon, only 14.1% respondents were using adjunctive screening tools (toluidine blue or direct fluorescence) at their clinic and 29.17% were performing biopsy of the suspected lesions. 85% respondents preferred referring suspicious cases of oral cancer to oncology specialist. Only 26% dentists had attended educational program on Oral lesions and Carcinoma. Significant differences existed between educational qualification and adjunctive use of screening tools ( $p=0.02$ ) and performance of biopsy at dental clinics ( $p=0.05$ ) and in relation to educational program attended ( $p=0.004$ ) by respondents.

### **DISCUSSION**

According to data revealed by World Health Organization, carcinoma of oral cavity in males in developing countries, is the sixth commonest cancer after lung, prostate, colorectal, stomach and bladder cancer, while in females, it is the tenth commonest site of cancer after breast, colorectal, lung, stomach, uterus, cervix, ovary, bladder and liver.<sup>[6]</sup> Oral cancer is frequently herald by a distinguishable pre-malignant lesion and the progression from dysplasia.<sup>[7]</sup> Early diagnosis of oral and oropharyngeal malignancy is important to ensure maximal prognosis.<sup>[8]</sup> The present study mirrors the knowledge of Pune dental practitioners with regard to the diagnosis, prevention and initial management of oral premalignancy and malignancy in general dental practice. It was found that all the respondents agreed the role of dentist in early screening of the oral cancer but only half of them thoroughly examined the oral cavity for other lesions when patient demanded specific treatment and even 14% of them performed extra oral examination on new patient cases. The head and neck examination is often overlooked by busy clinicians but it is a crucial element of the cancer screening examination. A thorough head and neck examination is necessary for detecting early cancers and enlarged lymph nodes that may indicate cancer metastasis. In addition to oral cancer, many chronic diseases can be exposed in the dental office since oral manifestations of

**Table 1: Questionnaire consisting of demographic data**

Questionnaire		
Name	Age	Sex
Qualification: Dentist: BDS	MDS (branch)	
Years of experience since graduation:		
Attended any educational program on Oral lesions and Carcinoma:		
A) Yes	B) No	

**Table 2: Awareness and attitude among dentists regarding oral lesions**

S. No.	Variables	% of dentists response (Total n=120)	
		Yes	No
1	Do you agree the role of dentist in early screening of the oral cancer?	120 (100%)	-
2	Do you thoroughly examine the oral cavity for other lesions when patient demands specific treatment only?	70 (58.33%)	50 (41.66%)
3	Do you perform extra oral examination on new patient cases?	17 (14.17%)	103 (85.83%)
4	If any symptoms of appearing oral lesion is present, do you aware the patient for the same?	113 (94.16%)	7 (5.8%)
5	Do you enquire about oral habits (quantity, frequency and duration of tobacco use and alcohol consumption) and life style of the patient in suspected oral lesion patients?	97 (80.8%)	23 (19.2%)
	Do you Counsel patients for the withdrawal of habit and change in lifestyle?	97 (80.8%)	23 (19.2%)
	Does oral cancer appear as:		
6	a painless nonhealing mouth ulcer	8 (0.6%)	102 (85%)
	White patch	2 (0.1%)	118 (98.33%)
	Red patch	9 (7.5%)	111 (92.5%)
	Any of the above	100 (83.84%)	20 (16.67%)
7	Do you know the meaning of field defect phenomenon?	21 (17.5%)	99 (82.5%)
8	Do you use any adjunctive screening tools (toluidine blue or direct fluorescence) at your clinic?	17 (14.17%)	103 (85.83%)
9	Do you take biopsy of the suspected lesions?	35 (29.17%)	85 (70.83%)
10	Do you refer suspicious cases of oral cancer to oncology specialist?	102 (85%)	18 (15%)

systemic disease may be observed during a routine dental exam and oral cancer screening. Findings which should be noted include enlarged palpable nodes, fixed nodes, tender nodes and whether the palpable nodes are single or present in groups. Findings which include single or multiple, non-tender, and fixed nodes are very suspicious for malignancy.<sup>[9]</sup> Oral cancer has four cardinal signs which directs further investigation. These are erythroplakia, leukoplakia, erythroleukoplakia and ulceration. Of these the commonest presenting sign is ulceration.<sup>[2]</sup> Most cancers appear as a painless mouth ulcer that does not heal normally. Less often, however, a white or red patch in the mouth may develop into a cancer.<sup>[1]</sup> In the present study 83.84% respondents were familiar with these signs. The prevalence of this disease is recognized through general medical

and dental care. The results of this current study greatly concern the profession as there was chasm among dentist knowledge and attitude with respect to the diagnostic procedures. It was found that only 17.5% respondents were familiar with field defect phenomenon and only 14.17% were using toluidine blue or direct fluorescence as any adjunctive screening tools at their dental clinic. These respondents were mainly postgraduates in the speciality of oral medicine, pathology and surgery. Field defect means that, if dysplastic changes occur in 1 location of an organ or body site, other locations in the same organ are likely to have dysplastic changes. SCC of the head and neck possesses unusual features not universally found in carcinomas in other anatomic sites. SCC is a field-defect phenomenon.<sup>[12]</sup> The assessment of premalignant lesions is evaluated principally

through histological examination of a suitable biopsy.<sup>[13]</sup> Only 29.17% respondents were performing biopsy procedures of the suspected lesions at their clinic. The results are similar with a study carried out by Jaber MA<sup>[13]</sup> in United Arab Emirates who found that less than 30% of the respondents had ever undertaken a biopsy of a premalignant oral lesion, and only 10% indicated that they routinely undertake biopsies of the oral mucosa. Similarly, Bataineh AB *et al.*,<sup>[14]</sup> investigated the theoretical and practical skill levels of the general dental practitioners (GDPs) toward oral biopsy and found that 19.8% indicated that they do know how to perform an oral biopsy, 11% of dentists claimed that they had performed biopsies in their career and out of them only 5.4% claimed that they perform the procedure routinely when needed. A similar study conducted by Vijay Kumar KV *et al.*,<sup>[15]</sup> regarding knowledge, attitude and screening practical of General dentist concerning oral cancer was carried out in Bangalore city and results revealed that less than 37% of dentists were involved in anti-tobacco counselling and survey declared that there is a strong need for educational interventions for practitioners and dental students. India is second most producer of tobacco with approximately 274.9 million tobacco users.<sup>[2]</sup> The World Health Organization predicts that during the first two decades of the 21st century, India will experience the fastest rate of rise in deaths attributable to tobacco worldwide. Given a population of over one billion people, this exponential increase in tobacco-related mortality from 1.4% of all deaths in India in 1990 to 13.3% in 2020 will result in tremendous social and economic burdens for this country. In general, cigarettes account for only 20% of all tobacco consumed, while gutkha (chewing tobacco) each account for about 40% of tobacco consumption.<sup>[16]</sup> Thus, it is crucial in our developing country, India to enforce preventive strategies through educating patients about the risks associated with etiological factors and smoking cessation need to be emphasized in the dental college curriculum to enable students to help their patients make choices for healthier lifestyles. Fotedar S *et al.*,<sup>[17]</sup> conducted a study regarding knowledge, attitude and practices about oral cancers among dental students in Shimla and

found that 60.7% of the subjects believe that their knowledge regarding the prevention and detection of oral cancer was not up to date and adequate and 99% agreed that they need an additional training/information regarding oral cancer. Due to the opportunity of routinely examining the oral cavity, the dentist has the chance to diagnose oral cancer even in asymptomatic patients before dissemination occurs to adjacent tissues. However, to make it actually effective, dentists must understand oral cancer as a public health problem. It is the responsibility of the dental schools to ensure the formation of a generalist with solid technical, scientific, humanistic, and ethical knowledge, aimed at promoting health, emphasizing the philosophy of prevention of prevalent oral diseases.<sup>[18]</sup>

#### CONCLUSION

The study implies that the knowledge regarding etiological factors, clinical presentation and mainly about use of adjunctive aids in early screening of oral cancer need to be reinforced throughout the undergraduate dental courses, via time to time workshops and additional training programs so that they can use the same in educating and motivating the masses to adapt and spend healthy lifestyles.

#### CONFLICT OF INTEREST & SOURCE OF FUNDING

The author declares that there is no source of funding and there is no conflict of interest among all authors.

#### BIBLIOGRAPHY

1. Mehta NV, Dave KK, Gonsai RN, Goswami HM, Patel PS, Tarang B. Histopathological study of oral cavity lesions: a study on 100 cases Int J Cur Res Rev 2013;5(10):110-6.
2. Nazar SA, Uma maheswari TN. Awareness of early detection and prevention of oral cancer among dentists - a review. IOSR Journal of Dental and Medical Sciences 2014;13(1):10-2.
3. Mehrotra R, Yadav S. Oral squamous cell carcinoma: Etiology, pathogenesis and prognostic value of genomic alterations. Indian Journal of Cancer 2006;43(2):60-6
4. Morgan R, Tsang J, Harrington N, Fook L. Survey of hospital doctors' attitudes and knowledge of oral conditions in older

- patients. *Postgrad Med J* 2001; 77:392.
5. Gillison ML, Broutian T, Pickard RK. Prevalence of oral HPV infection in the United States, 2009-2010. *JAMA* 2012;307:693.
  6. Landis SH, Murray T, Bolden S, Wingo PA. Cancer statistics, 1999. *CA Cancer J Clin* 1999;49:8-31.
  7. Schnetler JF. Oral cancer diagnosis and delays in referral. *B J OMFS* 1992;30(4): 210-13.
  8. Silverman S. Demographics and occurrence of oral and pharyngeal cancers: the outcomes, the trends, the challenge. *J Am Dent Assoc* 2001;32:7-11.
  9. Burkhart NW, DeLong L. The Intraoral and Extraoral Exam. *Crest Oral-B at dentalcare. Continuing Education Course, Revised August 8, 2012.*
  10. Kazmi, F, Iqbal S, Mumtaz M, Asad S. Awareness regarding screening of oral cancers in young dental graduate. *Pakistan Oral & Dental Journal* 2012;32(1):56-61.
  11. Early detection and prevention of oral cancer: A Management Strategy For Dental Practice. Paul Speight, Saman Warnakulasuriya, Graham Ogden, editors. British Dental Association. London; 2010. Available at: [www.bda.org](http://www.bda.org)
  12. Singh J. Histopathology of oral squamous cell carcinoma - a review. *TMU J Dent* 2014;1(4):141-4.
  13. Mohamed JA. Dental practitioner's knowledge, opinions and methods of management of oral premalignancy and malignancy. *The Saudi Dental Journal* 2011;23: 29-36
  14. Bataineh AB, Hammad HM, Darweesh IA. Attitude toward oral biopsy among general dental practitioners: Awareness and practice. *J Orofac Sci* 2015;7:19-26
  15. Vijay Kumar KV, Suresan V. Knowledge, attitude and screening practices of general dentists concerning oral cancer in Bangalore city. *Indian J Cancer*. 2012;49:33-8.
  16. Murti PR, Bonsle RB. Smokeless tobacco use in India effects on oral mucosa in smokeless tobacco on health. *Natl Inst Health* 1992;51-6.
  17. Fotedar S, Bhardwaj V, Manchanda K, Fotedar V, Sarkar AD, Sood N. Knowledge, attitude and practices about oral cancers among dental students in H.P Government Dental College, Shimla-Himachal Pradesh. *South Asian J Cancer*. 2015;4:65-7.
  18. Camelo Soares TR, Eugenia de Almeida MC, Lucielma Salmito SP, Falcao CA, Francisca Tereza CM, Santos TC. Oral cancer knowledge and awareness among dental students. *Braz J Oral Sci* 2014;13(1):28-33.