

Evaluation of Awareness Towards Oral Screening and Oral Biopsy Processes among Dental Practitioners to Design Appropriate Educational Programme in Patna, India

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ABSTRACT

Background: To evaluate awareness towards oral screening and oral biopsy processes in dental practitioners to design appropriate educational programme in Patna, India.

Methods and Materials: In this study, 183 general dentists were included who were inquired with the help of questionnaire which was self-administered. The questionnaire consisted of questions which were aimed to evaluate awareness among dentists towards oral screening and oral biopsy procedures. The obtained information was statistically analysed using chi square test. The name and address of dentists were not disclosed.

Results: It was found that dentists have the knowledge about various biopsy processes but their awareness regarding the application of biopsy in the oral premalignant and malignant lesions was not adequate. According to most of dentists, biopsy is required only in case of only malignant lesions while a low percentage of dentists feel that biopsy is required in premalignant lesions and benign lesions also. Even if dentists feel the requirement of biopsy then there is a major group which don't perform biopsy by themselves and the main reason for such activity is the shortage of skills and experience required for biopsy among most of the dentists.

Conclusion: Within the limits of this study, it can be concluded that a major group of dentists have knowledge of oral biopsy processes, but most of them don't perform biopsy by themselves which is due to the shortage of skills and experience among dentists and lack of awareness regarding importance of biopsy process in oral premalignant lesions. There is serious need of well-planned educational programme to increase awareness among dentists of Patna towards oral biopsy procedures and enhance their skills and expertise in oral biopsy processes.

Keywords: Awareness, Dentists, Oral biopsy.

INTRODUCTION

Cancer of the oral cavity is a worldwide health issue which is being found to increase at rapid rates and causing deaths of large number of people across the whole world. This is due to the fact that there is rapid increase in the harmful daily livelihood activities responsible for causing cancer of the oral cavity. Some of these activities include increased uptake of tobacco and alcohol.¹ According to latest

reports, cancer of oral cavity is the sixth most common cancer of human body and it is second most common cancer among males across the world. Most of the cases are reported from the developing countries of world. The mortality rate due to oral cancer is also highest in the developing countries.² As far as India is concerned, it has been reported that about one third of the total cases of

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cancer of the oral cavity has been reported in Indian subcontinent. It has been reported that out of every one lakh people 13 people are found to suffer from cancer of oral cavity. There is a finding that number of deaths due to other cancers of body has decreased during last 20-30 years but in case of cancer of oral cavity the numbers has increased drastically.³

The most common reason for increase in the number of deaths due to cancer of oral cavity despite the presence of newer advanced treatment modalities is its diagnosis at the advanced stage when the prognosis of the treatment of cancer of oral cavity is poor.⁴ The most important step in the management of oral cancer is the diagnosis at the earlier stages. It is matter of surprise that despite the presence of large number of dentists and oral health workers, most of the premalignant lesions are being overlooked and they don't get necessary treatment leading to their advancement to malignant conditions. Most of the cases of cancer of oral cavity are reported when they have reached in the stages of metastasis and malignant condition. At this stage the chances of survival of the patient is very low accounting for 20% to 50%.⁵

Oral biopsy is the most reliable method of diagnosing cancer of oral cavity at earliest stage. There should be biopsy of suspected cases of malignancy and premalignant lesions at the earlier stages to prevent increased mortality of cancer of oral cavity. Dentists has great role in the prevention of the deaths due to cancer of oral cavity. They can contribute effectively in both the primary as well as secondary prevention of cancer of oral cavity.⁶ Dentists can play role in primary prevention of cancer of oral cavity by educating people to avoid use of tobacco, alcohol intake and other activities which have overall negative impact over health. They can play vital role in secondary prevention of oral cancer by diagnosing cancer of oral cavity at earlier stages by carrying out biopsy of the premalignant and malignant lesions.⁷

Therefore it is very important that dentists should be well aware about the importance of biopsy. It has been found that very few studies have been conducted regarding evaluation of awareness of dentists in Patna district, the capital city of Bihar towards oral biopsy. This is also important because it will help in analysing the need for educational

programme for increasing awareness among dentists towards biopsy processes.⁸ Therefore the current study was conducted with the aim of to evaluate awareness towards oral screening and oral biopsy processes in dentists to design appropriate educational programme in Patna, India.

MATERIALS AND METHODS

The study was performed among the dentists in Patna district the capital city of Bihar, India. With the help of local sources of information like regional branch of IDA (Indian Dental Association) a database of 206 dentists who were practicing in the city with at least BDS degree and valid registration was prepared. Personal visits were made by investigator to dental clinics of all these dentists. During first personal visits 193 dentists were found available while remaining 23 dentists were not present. These 23 dentists were not approached later because there was lack of convenience. Out of these 193 dentists, 10 dentists refused to be part of study. So they were not included in study. Finally the sample size of the study was 183. Approval for the study was obtained from the ethical committee of Sarjug Dental College and Hospital, Darbhanga. Written informed consent was obtained from all the dentists participating in the study. For evaluating awareness among dentists towards oral biopsy a questionnaire with a list of questions was prepared which was comprehensive and well structured. The list of questions was prepared with the suggestions and discussion with other academicians of different departments of our dental college. In order to know whether the language and length of the list of questions was acceptable to dentists a pilot study was conducted in which 20 dentists were provided with the list of questions and opinion was obtained from them in this regard. On the basis of opinion obtained from these 20 dentists it was decided that list of questions was acceptable to dentists. The Cronbachs alpha was calculated and it came out to be 0.66. This value showed that the list of questions was quite reliable in nature. On the basis of feedback obtained from the committee of five faculty members of our dental college, calculation of mean CVR i.e content validity ratio was done and it came out to be 0.84. It was found that the percentage of dentists who found that the questions present in the list were easy to reply and clear was 92%. The information obtained from this pilot study was not inducted in the main research.

Table 1: Data on the common locations of oral cavity examined for premalignant lesions and history taking of risk factors for potentially malignant lesions of oral cavity.

Locations of oral cavity examined for finding precancer and malignant lesions		p value	History taking about the various habits considered as risk factors for oral cancer		p value
Location	% of Dentists	0.04	Risk factor which was inquired	% of Dentists	0.03
Don't look for precancer and malignant lesion	64.23		No history taking of any risk factors	62.76	
Examination of other sites other than buccal mucosa	12.42		History of Tobacco	16.78	
Examination of buccal mucosa only	13.35		History of tobacco and Alcohol	20.46	

Table 2: Data on awareness regarding biopsy processes among Dentists.

Which Oral cavity lesions according to Dentists requires biopsy		p value	Method of biopsy known to Dentists		p value
Oral cavity lesions	% of Dentists	0.03	Methods	% of Dentists	0.06
Only Malignant lesions	57.43		Incisional biopsy	34.4	
Both Premalignant and Malignant lesions	24.65		Incisional and Excisional biopsy	36.2	
Benign, premalignant and malignant lesions	17.92		Incisional, excisional and Fine Needle Aspiration biopsy	23.2	

Table 3: Data on how much dentists perform biopsy by themselves and reasons for not performing biopsy by themselves.

Step taken when Dentists feel that there is need for biopsy		p value	Factors due to which Dentists don't perform biopsy by yourself		p value
Steps	% of DENTISTS	0.03	Factors	% of DENTISTS	0.04
Make a request to a biopsy expert to visit your clinic	21.6		Non approval from patients	13.2	
Consider referral to a well equipped hospital for biopsy	64.4		Deficiency of skills and experience	42.4	
Carry out oral biopsy by themselves	13.0		Deficiency of instruments used in oral biopsy	33.3	

Table 4: Data regarding methods applied by dentists for oral screening and conditions where specimens are send for histopathological examination.

Methods applied by Dentists for oral screening		p value	Conditions in which Dentists send the biopsy specimen for histopathological examination		p value
Applied Methods	% of Dentists	0.03	Conditions	% of Dentists	0.04
Clinical examination only	76.4		In all cases of biopsy	13.4	
Vital staining with Toluidine blue stain and clinical examination	23.6		In cases of incisional biopsy only	67.3	
			In cases of excisional biopsy	19.3	

The list of questions included questions which were grouped into questions which were mandatory for dentists to answer while there were some questions which were optional. The questions were framed to obtain information from dentists regarding their socio demographic data with no personal details like name and address, their priority in identifying premalignant lesions during clinical examination, their interest in taking history about the risk factors for oral cancer, their knowledge about biopsy processes, importance about the biopsy process among dentists, various methods of biopsy practiced by dentists, practice of sending biopsy specimens for histopathological examination, method of oral screening and the frequency of carrying biopsy by dentists themselves. The investigator personally visited the dental clinic for distribution of list of questions as well as collection of answered list of questions. The dentists were assured that their name and address will not be disclosed. The dentists were provided with detailed discussion regarding the questions and the proper method of answering.

RESULTS

In this study it was found that 64.23% of dentists were not concerned for finding premalignant and malignant lesions while making examination of oral cavity. 12.42% of dentists were found to examine all sites of oral cavity for finding premalignant and malignant lesions. 13.35% of dentists focussed mainly on buccal mucosa for finding premalignant and malignant lesions. There was significant difference ($p = 0.04$) among dentists regarding their attention in finding premalignant and malignant lesions while carrying out examination of oral cavity. When the dentists were inquired about their practice of taking history of risk factors for oral cancer then it was found that 62.76 % of dentists don't take history of any risk factors for causing oral cancer. It was found that 26.78% of dentists were found to take history of tobacco while 10.46% of dentists were found take history of both tobacco and alcohol. The difference was statistically significant with $p= 0.03$.(Table 1).

When it was inquired with dentists that according to them which lesions of oral cavity require biopsy then it was found that 57.43% dentists believe that biopsy is required only in case of malignant lesions while 24.65% believed that biopsy is required for

both premalignant and malignant lesions. 17.92% felt that premalignant, malignant lesions as well as benign lesions require biopsy. The results were statistically significant with $p= 0.03$. When the dentists were inquired about their knowledge regarding biopsy procedure then all of them knew about biopsy procedures. 34.4% of them knew about incisional biopsy only while 36.2% were found to know about both incisional as well as excisional biopsy. 23.2% knew about incisional, excisional as well as fine needle aspiration. The difference was not statistically significant with $p=0.06$. (Table 2).

In this study it was found that 21.6% of dentists make a request to a biopsy expert to visit their clinic when they feel that there is need for biopsy in any patient. 64.4% of them were found to consider referral to a well equipped hospital for biopsy while only 13% were found to carry out biopsy by themselves. When it was inquired regarding the factors due to which they don't carry out biopsy by themselves then it was found 13.2% of them don't perform biopsy by themselves because patients don't agree for biopsy. 42.4% didn't perform biopsy by themselves because they lacked experience and skills for biopsy. Lack of instruments required for biopsy was reason for not carrying biopsy by themselves in 33.4% of dentists. The finding was statistically significant with ($p= 0.04$) (Table 3).

On inquiring about methods known by dentists for oral screening for finding premalignant and malignant lesions then it was found that 76.4% of dentists knew clinical examination as the only method for screening of oral cavity to find premalignant and malignant cancer while 23.6% of them knew about both clinical examination along with vital staining as method for oral screening. The results were statistically significant ($p=0.03$). When it was inquired about conditions in which dentists send the biopsy specimen for histopathological examination then only 13.4% were found to send all biopsy specimens for histopathological examination while 67.3% were found to send specimens for histopathological examination in cases of incisional biopsy only. 19.3% of them were found to send specimens only in in cases of excisional biopsy. The results were statistically significant ($p= 0.04$). (Table 4).

DISCUSSION

In the present study it was found that the dentists have the knowledge about various biopsy procedures but their awareness regarding the application of biopsy processes in the oral premalignant and malignant lesions was not adequate. More than half of dentists don't examine oral cavity looking for premalignant lesions and malignant lesions while among dentists who examined oral cavity keeping premalignant lesions and malignant lesions in mind, buccal mucosa was only site which was examined. Most of the dentists don't take history for risk factors for oral premalignant lesions and malignant lesions and among the dentists who took history, tobacco was the risk factor about which history was taken.

According to major group of dentists biopsy is required only in case of only malignant lesions while a low percentage of dentists feel that biopsy is required in premalignant lesions and benign lesions also. Even among dentists who feel the requirement of biopsy there is a major group which don't perform biopsy by themselves and the main reason for such activity is the lack of experience and skills for biopsy. It was found that many dentists don't use vital staining for oral screening with the purpose to find out premalignant and malignant lesions and even if there is biopsy procedure then specimens are sent for histopathological examination mostly in case of incisional biopsy only while in cases of excisional biopsy specimens are not send in maximum cases.

Similar results were found when Greenwood and Lowry conducted a study and find out that majority of dentists are more interested in making clinical examination of only teeth and periodontium rather than focussing on other areas of oral cavity where there is possibility of developing premalignant and malignant lesions.⁹ Kujan et al and Colella et al conducted a study among dentists and found that most of dentists are not bothered about taking history of risk factor for premalignant and malignant lesions. And those dentists who took history were mainly concerned with the history of tobacco. The results are similar to that observed in our study.^{6,10} However when Suresan and Vijay-Kumar conducted a study they found that half of dentists take history of risk factors and alcohol was the risk factor most commonly inquired because they believed that alcohol is major risk factor for oral cancer. The results were not similar to our

study.^{11,21} In spite of the fact that tobacco and alcohol are major risk factors for oral cancer only 37% of the dentists in our study enquired about the history of type and frequency of tobacco and alcohol intake. It is very important that the dentists must enquire about the habit history from patient because it is most basic step in prevention of the oral cancer.¹²

The awareness among dental professionals regarding the lesions that require biopsy was very disappointing as 57.43% felt that biopsy should be carried out only in malignant lesions. The results are not similar to the study conducted by Murgod et al in which it was observed that 22.3% dental professionals were unaware about the correct indications for biopsy processes in oral premalignant lesions.^{13,15} The reason for this contrast in results may be inadequate focus given to oral pathology speciality in Patna and lack of awareness regarding the danger possessed by premalignant lesions of oral cavity. In present study, 13.2% of the dentists were found to carry biopsy by themselves. The results are similar to the results obtained in the studies carried out by Diamanti et al, Murgod et al, Jornet et al, Seoane et al, Leao et al and Jaber in which very few dentists were found to carry biopsy by themselves.^{8,15} In Spain there was educational programme carried out by the government on mass scale which resulted in the condition that more than half of dentists were found to carry out biopsy by themselves on more regular basis helping in reduction in the mortality due to oral cancer.¹⁶

Wan and Savage et al, Diamanti et al and Murgod et al conducted studies and found that the most common reason due to which maximum dentist don't perform biopsy by themselves is the lack of skills and expertise in oral biopsy. The results are similar to that obtained in our study.^{16,22}

The reason for lack of expertise and skills for oral biopsy processes can be inadequate emphasis placed on practical training of dentist for biopsy processes during the undergraduate course. In a study conducted by Wan and Savage et al and Diamanti et al it was observed that most of the dental professionals were provided with only theoretical knowledge about biopsy processes and histopathological examination during their undergraduate training. There was less emphasis on

the practical training during the training period in compared with other practical dental procedures.^{15,22} It has been also observed that the dentist who were given theoretical as well as practical knowledge regarding biopsy were able to perform biopsy in their clinical practice. Another observation was that most of the dentists who performed biopsy by themselves don't send the excisional biopsy specimens for histopathological examination. This is not proper attitude of most of the dentist as all the soft tissue lesion obtained during biopsy should be sent for histopathological examination for proper diagnosis.¹⁹

It's a matter of great concern that the awareness about biopsy procedures in oral premalignant and malignant lesions is low in dentists of Patna city because the most important step in management of oral cancer is its diagnosis at the earlier stage and subsequent treatment.²⁰ Such lack of awareness may cause increased mortality rate due to oral cancer in Patna population. Therefore from our study it was concluded that there is need for planning an extensive educational programme to educate and train the dentists for oral biopsy for earlier detection of oral cancer in Patna population and prevent increase in mortality due to oral cancer.

The limitations of this study was that responses given as answers to list of question may be different from that followed in daily dental practice. Most of the dental professionals have the habit of giving answers which are accepted socially. This may led to inadequate estimation of differences among dentist regarding in their approach in clinical practices towards biopsy processes.

CONCLUSION

Within the limits of this study, it can be concluded that a major group of dentists have knowledge of oral biopsy processes, but most of them don't perform biopsy by themselves which is due to the shortage of skills and experience among dentists and lack of awareness regarding importance of biopsy process in oral premalignant lesions. There is serious need of well-planned educational programme to increase awareness among dentists of Patna towards oral biopsy procedures and enhance their skills and expertise in oral biopsy processes.

CONFLICTS OF INTEREST

The authors declare they have no potential conflict of interests regarding this article.

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