

ATTITUDE TOWARDS BIOPSY IN DENTAL AND MEDICAL PRACTICE

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ABSTRACT

Objectives: Previous reports on biopsy procedures in dental and medical practice demonstrate a small but steady increase in the number of specimens received by general pathology departments. Considering the prevalence of smoking, smokeless tobacco and alcohol, these indicate the numbers of true cases may under report. Patients with complaint of pain and swelling usually report to practitioners while other suspicious lesions are not routinely perceived by them and even if noticed, they disregard them. Dental and medical practitioners actively involved in their practice may or may not perform biopsies on a routine basis. Hence the present study is an attempt to understand the concern of patients and practitioners towards oral lesions and to biopsy procedures and also to stress that “innocent looking” lesions should be immediately referred or they should be biopsied thus assisting in the early detection of oral cancer. **Material and methods:** A self designed questionnaire was administered to 100 general practitioners and patients in Bhopal city, consisting of several items addressing the socio-demographic and professional aspects and their attitudes towards oral biopsy procedures. **Results:** The response rate was exceptionally high i.e. 98.54%. All the practitioners felt that biopsy was an important tool in diagnosis of oral lesions but many still did not venture to undertake it on their own and preferred referring it to a specialist or higher care centre. This was mainly due to lack of experience and patient factors. There were also conflicting results regarding referral diagnostic pathology services and preservation of the biopsy specimens. **Conclusion:** This emphasizes the need for higher levels of importance to be placed on this aspect in undergraduate and postgraduate dental curriculum. Organisation of specific training or continuing dental education programmes to enhance their practical skills could aid in increasing the utility of this important tool in diagnosis of oral lesions.

KEYWORDS: Biopsy, attitude, general practitioners, continued dental education.

INTRODUCTION

The word biopsy originates from the Greek term bios (life) and ophis (vision): meaning vision of life.^[1] In routine practice, the clinical diagnosis of oral lesions frequently must be confirmed by different procedures, among which oral biopsy constitutes an important tool by establishing the histologic characteristics. It must be highlighted that oral biopsy is not only limited to diagnosis but is also greatly useful to determine the nature of the lesions i.e. benign /malignant and for designing effective treatment strategies. The primary indications of oral biopsy include premalignant lesions like leukoplakia, erythroplakia etc. and for detection of malignancy. However, it can also be applied for benign lesions like mucocele, fibrous hyperplasias, etc., for vesiculobullous lesions like pemphigus, pemphigoid, and lichen planus as well as for bony lesions like cysts and periapical lesions among others.^[2] Additionally, it has irrefutable medicolegal value.^[1]

In general, the dentist is required to detect and recognise oral lesions and inform the patient accordingly by providing a diagnosis and adequate treatment plan. Biopsy serves as an important aid in achieving this goal. Dentists therefore, must not only know where, when and how to perform biopsy, the preservation of tissue thereof but also should be able to manage the subsequent report.^[6,7] It is well within the scope of general practitioners to carry out small incisional and excisional biopsies rather than refer them.^[8,9] In spite of the???? range of benefits of performing biopsy, it is observed that practice of oral biopsy is not so widespread in dental practice.^[1,10] This could be attributed to several reasons like fear of medicolegal complication, unfamiliarity with biopsy technique, misconception of it being a predominant specialist procedure etc. It seems paradoxical that general practitioners will render a patient edentulous yet hesitate to remove a few millimetres of soft tissue.^[6] The present study aims to explore the attitudes of general practitioners in Bhopal city towards oral biopsy procedures for diagnosis of oral

lesions as well as attitude and perception of patients towards the same.

MATERIAL AND METHODS

Bhopal is one of the largest cities in the Madhya Pradesh state with a population of approximately 18 lakhs. The study focused on general dental and medical practitioners as well as practitioners with an undergraduate qualification of Bachelor of Dental Surgery. It included two sets of self designed questionnaire (one set for practitioners while another set for the patients).

First set for practitioners included thirty-three closed ended questions with two item blocks; one addressed the socio-demographic and professional aspects, while the second explored the attitudes towards oral biopsy which included the importance, knowledge and practice regarding lesions requiring biopsy, biopsy methods, diagnostic pathology referral and preservation of specimens. The list of 128 GDPs in the city was obtained from the register of Bhopal branch of Indian Dental Association.

Second set for patients (N= 100) included ten questions with two item blocks; one addressed the socio-demographic and professional aspects, while the second explored the perception and attitude of patients towards oral lesions and their treatment modalities.

After obtaining the ethical clearance from the institutional review board; the questionnaires were self-administered by the researcher. Following which the purpose of the study was explained to the general practitioners and verbal consent was obtained and the questionnaire was given. Results were tabulated and percentage was then calculated.

Statistical Analysis

Data was entered into a database (Microsoft Office Excel 2007). Statistical analysis was performed using Statistical Package for Social Sciences (SPSS) version 17.0.

Frequency distribution which includes number and percentage were calculated for the demographic variables like practitioner's name, age, sex.

Chi-square analysis was used to test the knowledge and attitude towards biopsy procedures. The test of significance was set at $P < 0.05$.

RESULTS

Practitioner's Perception

Of the 128 general practitioners that were approached with the questionnaire; there were 100 practitioners who answered the questionnaire which included 44 (44%) males and 56 (56%) females. The mean age of the practitioners was around 35.40 years. Among them, 56 practitioners had consultants of various specialities visiting their clinic.

All the practitioners (100%) said it is important to perform biopsies for diagnosis of oral lesions. On asking how often do they come across an oral lesion requiring biopsy, 32 (32%) said once in month, while 52 (52%) practitioners said once in week, which is quite considerable. 16 respondents (16%) said more than once in week. (Figure 1).

Most of the practitioners 66 (66%) said they don't have adequate facilities to perform biopsy. (Figure 2).

Further, on asking whether "lack of referral centre" nearby, a reason for not performing biopsy, majority of the practitioners 72 (72%) responded positive to the question. (Figure 3).

It was evident that most of the practitioners either called a specialist for biopsy (71%) or referred them to a higher centre (22%). Only a small percentage (7%) said that they perform the biopsies themselves. (Table 1).

On the subject of what type of biopsy methods, they were acquainted with; 53% practitioners were aware of all the types of biopsy methods, mentioned in the questionnaire i.e. incisional, excisional and fine needle aspiration (FNA) biopsy, 44% knew about excisional and 2% and 1% practitioner were well versed with incisional and fine needle aspiration, respectively. (Figure 4).

The questionnaire sought opinion of the practitioners regarding preservation of the specimen after removal, 57% practitioners, alleged that specimens need to be sent in buffered formalin; while 32% believed that it can be sent in saline, 6% in glutaraldehyde and 5% sent their specimens in alcohol. While few among them sent it either in saline or formalin based on whichever is accessible at that moment. (Figure 5).

Majority of the practitioners 72 (72%) don't have the habit of taking clinical photographs before and after biopsy procedures. (Figure 6) Also most of them 64 (64%) don't obtain consent form signed by the patient before biopsy procedure. (Figure 7).

54 (54%) practitioners were aware of chairside screening methods for diagnosis of premalignant and malignant neoplasms while 46 (46%) were unsure. (Figure 8).

On asking, whether they had perform biopsy procedures during their Undergraduate or Postgraduate training, only 14 (14%) practitioners responded positively that too 13 (13%) of them performed less than 5 and only 1 (1%) performed in the range of 5-10 and all of them were Postgraduates while 86 (86%) had not. (Figure 9).

All the practitioners (100%) feel a need to update theoretical knowledge and practical application of biopsy procedures and also regarding oral lesions and 56 (56%) practitioners responded that they update their knowledge

regarding the same through internet and conferences while 44 (44%) of them through journals.(Table 2).

Patient’s Perception

Our study included 100 patients out of which 51 (51%) were males and 49 (49%) were females. 42 (42%) of them were clerical, shopowner and farmer, 24(24%) were skilled workers, 17% were semi-skilled (partially trained/ less technique sensitive work) workers, 09 (09%) were unemployed and 8 (8%) were of semi-profession (teachers, accountants etc).

On asking, whether they were aware of the word “biopsy”, 72 (72%) of them said yes while 28 (28%) were not hear the word biopsy. The more concerning feature for them on hearing the word biopsy was fear of cancer (65%) followed by pain during / following surgery (35%). (Table 3).

48 (48%) of them preferred to undergo biopsy procedures by a specialist, 47 (47%) by a dentist while 5 (5%) were in favour of a hospital setting. Also most of them (58%) had gain knowledge on dangerous oral lesions through dentists while remaining 42% through media. (Table 4).

On the subject of education by dentists on harms of tobacco use on a routine basis, 62 (62%) of them were counselled by their respective dentist and almost all of them 61(61%) had stop consumption of tobacco and related products. Further, on asking whether they turned up to the practitioners after biopsy, 62 (62%) of them responded positively and these were the same patients who were well counselled by their dentist while 38(38%) said no. (Table 5).

CRITERIA: FACILITIES

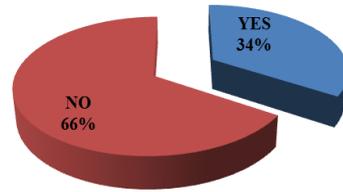


Figure - 2.

CRITERIA: REFERRAL CENTRE

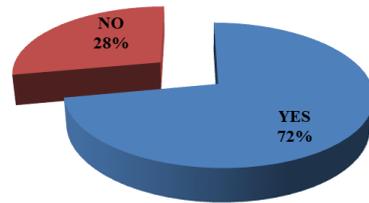


Figure - 3.

Table-1.

<i>For lesions requiring biopsy, what do you do?</i>	
Options	Response
Call a specialist	71%
Refer to higher centre	22%
Perform on their own	7%

COME ACROSS AN ORAL LESION REQUIRING BIOPSIES

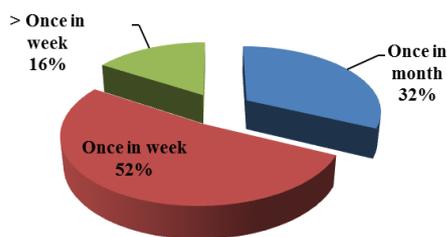


Figure - 1.

METHOD OF BIOPSY USED

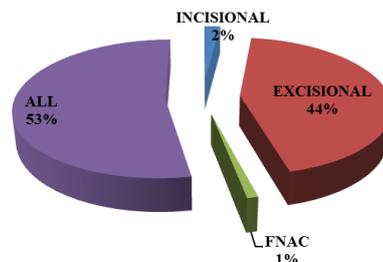


Figure - 4.

METHOD USED FOR PRESEVATION OF SPECIMEN

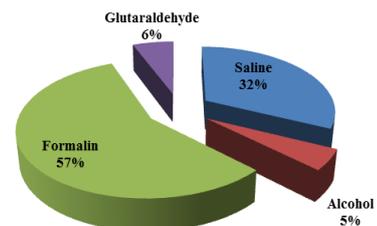


Figure - 5.

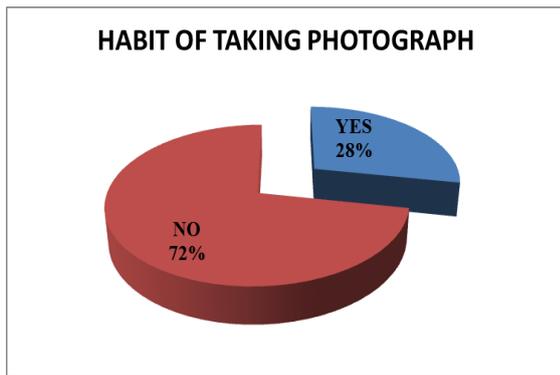


Figure – 6.

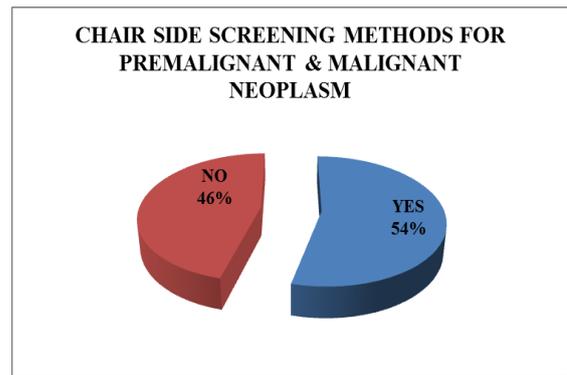


Figure – 8.

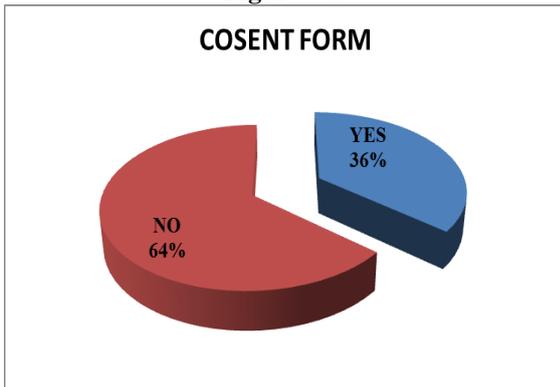


Figure – 7.

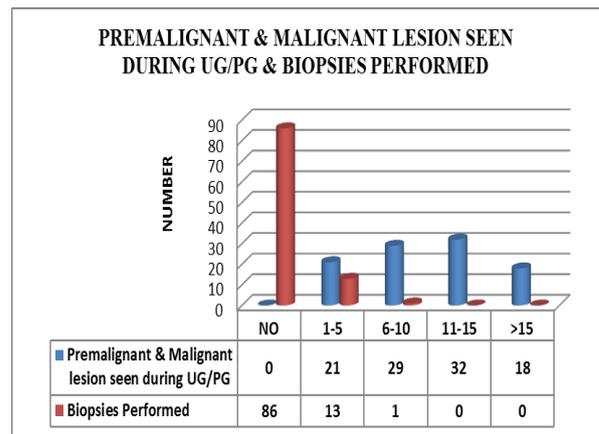


Figure - 9.

Table – 2.

Do you feel there is need to update your theoretical knowledge and practical application of biopsy procedures and regarding oral lesions?		If yes, how do you update yourself?	
Option	Response	Option	Response
Yes	99%	Journals	44%
No	1%	Internet and conferences	56%
		Any other sources (workshops, CDE programmes, group practice)	0%
		No update	0%

Table – 3.

Are you aware of the word “biopsy”?		What is more concerning feature to you regarding biopsy?	
Option	Response	Option	Response
Yes	72%	Pain during/ following surgery	35%
No	28%	Needle phobia	-
		Healing/ scarring	-
		Fear of cancer	65%

Table – 4.

You will prefer to undergo biopsy procedure by		Your present knowledge on dangerous oral lesion is due to-	
Option	Response	Option	Response
Dentist	47%	Dentists	58%
Specialist	48%	Media	42%
Hospital setting	5%	Newspapers	-

Table – 5.

Does your dentist educate you on harms of tobacco use on a routine basis?		If educated, have you reduced/stopped consumption of tobacco and related products?		Do you turn upto the practitioner after biopsy?	
Option	Response	Option	Response	Option	Response
Yes	62%	Yes	61%	Yes	62%
No	38%	No	39%	No	38%

DISCUSSION

Boyle said rightfully in 1955; that an individual's qualifications have little to do with ability to perform biopsy.^[11] Biopsy is of paramount importance as it is closely related to diagnosis and detection of oral cancer.^[12] Although most practitioners prefer to refer biopsy cases to specialist or higher centre, at the same time most of them believe that routine biopsies are well within the scope of a general practitioner as this would provide direct access to prompt management. The present study thus is an attempt to evaluate the attitudes of general practitioners with an undergraduate degree in dentistry in performing biopsy for diagnosis of oral lesions. Also, to assess the perception and attitudes of patients towards biopsy procedures and oral lesions.

The first question ventured to evaluate the number of oral lesions requiring biopsy encountered by practitioners during their routine basis and was observed that 52 % of general practitioners come across lesions requiring biopsy once in a week which is quite a large number but they believed that biopsy should be done only for benign lesions which demonstrates the ignorance of the practitioners regarding the significance of detection of premalignant and malignant lesions which could adversely affect the patient health.

In this study, 66% respondents don't have adequate facilities to perform biopsy and on asking whether "lack of referral centre nearby, a reason for not performing the same in their clinic, 72% of them were in favour which demonstrates how important it is for a practitioner to have sufficient knowledge regarding oral pathology, its set up and regarding diagnosis of oral lesions thereof, the lack of which could lead to misdiagnosis and prove detrimental to the patient's well being.

Our results also clearly revealed that most of the practitioners (93%) either call a specialist (71%) or refer the patient to a higher centre (22%). This was similar to reports by Wan and Savage in Brisbane, where it was seen that 76.2% of general practitioners refer the biopsy cases to a specialist. Only 7% of practitioners perform on their own, while Cowan *et al*^[13] reported 12% in Northern Ireland, 15% by Diamanti *et al*.^[6] Moreover, Warnakulasuriya and Johnson^[14] claimed 21% of dentists in United Kingdom and Seoane *et al*^[15] found 24.5% of practitioners perform biopsies in Northwest Spain. The number revealed in our study was less than what was answered for how often lesions requiring biopsy were encountered. This is detrimental as it reveals that the

practitioners even after knowing that the patient has a lesion did not perform biopsy. Failure to biopsy may lead to persistence of a misdiagnosed benign or malignant lesion or other serious pathology, resulting in an unfavourable downstream course for the patient. At the same time, demonstrable negligence on the part of practitioner could predispose them for a medicolegal action.

Moreover, on asking about awareness about excisional, incisional and FNA types of biopsies, majority (53%) knew all the methods for biopsy. The rest were aware only one or two of the biopsy techniques explaining the need for the general practitioners to be more congruent with biopsy techniques and their indications and contraindications. This would assist them to decide on the type of biopsy required in each and every case.

It is made known by our study that 57% practitioners, rightly knew that it needs to be sent in formalin, results being similar to a study by Vinita Murgod *et al* in Karnataka, India, while an appalling 32% believed that it needs to be sent in saline and small percentage (11%) thought that it needs to be sent in alcohol or glutaraldehyde. this is an important aspect in biopsy that the clinicians often tend to ignore. If the tissue is not preserved properly, it produces lot of artefacts which prevents the pathologist from giving an appropriate diagnosis.^[17-19] Thus, eliminating the rationale of doing biopsy in the first place and may predispose the practitioner for undertaking another biopsy ended in increasing the trauma to the patient.

Regarding the habit of taking clinical photographs before and after biopsy procedures and obtaining consent form from the patient before biopsy procedures, majority of them did not take it seriously (demonstrating negligence on the part of practitioners) without knowing the fact that these precautions would benefit the practitioners only; since the efforts taken in convincing the patient for biopsy and the trauma of the procedure may go in vain if the clinician asked for the same by any individual.

Since a large percentage of general practitioners did not undertake biopsy; major reasons being patients do not agree and lack of experience in performing the biopsy by the general practitioners. The reason most patients do not agree could be the fear that the report may bring bad news. However, this problem could be resolved by counselling the patient regarding the lesion and the important benefits of early diagnosis. The lack of

experience in performing a biopsy by general practitioners could be attributed, in part to the lack of importance on practical teaching of biopsy techniques during their training and also no such emphasis given in this aspect in the current curriculum of Dental Council of India for the Bachelor of dental surgery degree.

CONCLUSION

Considering the facts that lakhs of patients are treated for dental problems daily and the prevalence of oral premalignancies and malignancies in India, an emphasis on adequate training in Undergraduate will help in promoting more biopsy procedures and catching lesions early. This will also help to address the burden of diagnosis that is presently confined to higher referral centres. Stress should be given to “innocent looking” lesions and they should be immediately referred or should be biopsied thus assisting in the early detection of oral cancer.

Practitioner’s perception

- Majority of the practitioners do recognise the importance of biopsy procedures in the diagnosis of oral lesions but most still do not perform the biopsies on their own reasons being inadequate education, lack of experience with biopsy procedures (inability to take a biopsy sample) and diagnostic histopathology, transportation problem because of lack of referral centre nearby, suggesting that the dominant users are specialists with only a small proportion of biopsy accessions from general practitioners.
- General practitioners who had been taught how to biopsy or had actually performed a biopsy during their undergraduate studies were more likely to undertake biopsy procedures in general practice.
- Importance of postgraduate training provided courses on oral medicine and diagnostic procedures for general practice and organisation of specific training and continuing dental education programmes regarding biopsy procedures to provide practitioners with the experience and practical skills necessary to carry out these procedures safely and confidently.
- Plethora of legal implications regarding biopsy procedures and legal action is becoming more prevalent claiming that a practitioner’s responsibility is to inform the patient about the lesion and the treatment/ biopsy procedures related to them. Also obtaining clinical photographs before and after biopsy procedures and consent form signed by patient before biopsy procedure come under the practitioner’s responsibility.

Patient’s perception

Majority of the patients reported anxiety when their biopsy was carried out in clinic even after being reassured about the favourable outcome by the practitioner. Patients commented that their concern was

fear of cancer irrespective of who performed the biopsy. Majority of the patients were very satisfied with their dentist after a detailed and lengthy discussion about the lesion and the kind of procedures they are going to obtain, the outcome being they follow the instructions given by the practitioner carefully and turn up to them even after the biopsy procedure.

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