

# Questionnaire-based survey regarding the opinion of general pathologists on the need for oral pathology services

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## Abstract

**Context:** Oral and maxillofacial pathology (OMFP) is a subspecialization having a masters course in India. Due to lesser number of oral pathologists in the country, the biopsy material from the head and neck is catered to by the general pathologist.

**Aim:** This survey was conducted to acquire responses from general pathologists and gathering knowledge on their perspective of oral pathology.

**Methods:** Pathologists at various medical institutions and at laboratories all over Karnataka were requested to answer a questionnaire comprising 13 questions pertaining to the need and scope of oral pathology.

**Results:** In total, 37 (57%) general pathologists completed the questionnaire, of whom 97% (36) were aware of the specialty and 30 (81%) perceived a need for it. Eleven (30%) of them referred oral biopsy specimens to oral pathologists. The most common sources of diagnostic difficulty were identified as odontogenic tumors and cysts. Twenty-six (70%) pathologists felt the need for a short-term posting for their postgraduates in oral pathology, while 28 (76%) of them expressed their opinion about considering an oral pathologist as a part of their team when diagnosing complex head and neck pathologies. Twelve (71%) of them mentioned that they sometimes found that head and neck lesions took longer time to diagnose.

**Conclusion:** Although the utilization of OMFP specialists' services in the state is quite low, general pathologists strongly feel the need for OMFP training as head and neck specimens form a considerable proportion of biopsies received by them.

**Keywords:** General pathologist, oral pathology, questionnaire, services, survey

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## INTRODUCTION

Oral and maxillofacial pathology (OMFP) as a profession officially began in 1946 with the American Academy of Oral Pathology establishment. They defined it as “the specialty of dentistry and discipline of pathology which deals with the

nature, identification and management of diseases affecting the oral and maxillofacial regions.” Previous literature on surveys documented the expanding role of oral and maxillofacial pathologists (OMPs) for patient care in medical and dental settings. It increased job opportunities in both

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hospitals and independent private sectors.<sup>[1]</sup> Although the number of oral biopsies received by general pathologists may be small, the expertise of OMPs may prove invaluable and assist the general pathologists with problematic cases. Barrett and Speight showed that the general pathologists still used the services of OMPs to reach definitive diagnoses for many challenging histopathological cases. Thus, the specialized skills of the OMP fill what can sometimes be an essential gap in the expertise of some general pathologists.<sup>[2]</sup>

Previous surveys and reports on diagnostic services in oral pathology have mentioned that most general pathologists diagnosed oral lesions independently. However, the head and neck lesions were the third most erroneously diagnosed lesions due to a shortage of experience and insufficient exposure to these pathologies.<sup>[3]</sup> Despite papers that have highlighted the importance of oral pathology services, there are currently no published data on the use of such services by general pathologists in India. This survey aimed to determine the extent to which individual pathologists are aware of oral pathology as a specialist discipline and whether they perceive a need to use oral pathologists to help identify oral lesions during diagnostic challenges.<sup>[4]</sup>

## METHODS

### Ethical statement

This study was a questionnaire-based survey not involving human subjects or human-originated materials. Hence, ethical clearance had not been acquired.

### Study design

Descriptive analysis.

### Materials

In this 3-month survey, we distributed the questionnaire (in English) by email to all general pathologists working at medical institutions and laboratories in Karnataka, India. The questionnaire was adopted and modified using Barrett and Speight survey after electronic consent through email. The questionnaire comprised 13 questions, in the form of multiple choices and few open-ended questions. The questionnaires design asked the pathologists' knowledge regarding OMP services based on previous surveys conducted at the United Kingdom. The questionnaire's face validation was done by 2 general pathologists, followed by a pilot study conducted electronically via email to 20 pathologists. The responses were statistically analyzed using Cronbach's alpha to test the reliability and accordingly modified for better reliability scores where the acceptable range was 0.6–0.8. The modified questionnaire was then recirculated to all pathologists electronically for their responses.

## Statistics

The data from the final answers were tabulated in an Excel sheet and subjected to statistical analysis and using SPSS software version 22 (IBM Corp., Armonk, NY, USA). Descriptive statistics were used to derive values in the form of counts and percentages to define the study variables' characteristics.

## RESULTS

The questionnaire was sent to 70 general pathologists within Karnataka. The survey was viewed by 64 of them, while 6 of the emails bounced back, showing failure in delivery, and 37 respondents completed the questionnaire [Table 1]. Among the general pathologists who responded, the majority were associate and assistant professors (30% each), followed by professors (27%) in the specialty. Of these, 97% were aware of specialist oral pathologists before receiving the questionnaire, and 81% perceived a need for them. One consultant specifically commented that he appreciates an oral pathologist's role in helping with the diagnosis of odontogenic lesions as they are less exposed to pathologies in the oral cavity. The number of surgical requests received by each department ranged from 3000 to 20 000 per year. The numbers of dental, oral mucosal, salivary and jaw specimens received each year are shown in Table 1. Around 70% did not find the need to refer cases to oral pathologists, while just 30% of histopathologists did refer cases. Of those referred, 9 of them did so on fewer than five occasions, while 2 of them referred more than ten and the number remained the same every year. Odontogenic tumors (72%) and cysts (64%) were the most referred cases. Ear, nose, and throat (ENT) and oral and maxillofacial surgery (OMFS) were the two principal sources for head and neck specimen according to our survey [Figure 1]. The majority (70%) of pathologists felt the need for short-term postgraduates post in oral pathology. In comparison, 76% expressed their opinion about considering an oral pathologist as a part of their team when diagnosing complex head and neck pathologies. Most of the general pathologists used the same book used by an oral pathologist for reference when diagnosing head and neck pathologies. The majority of pathologists (70%) felt that they sometimes found that head and neck lesions take longer to diagnose, while very few admitted that they often felt the above situation [Figure 2].

## DISCUSSION

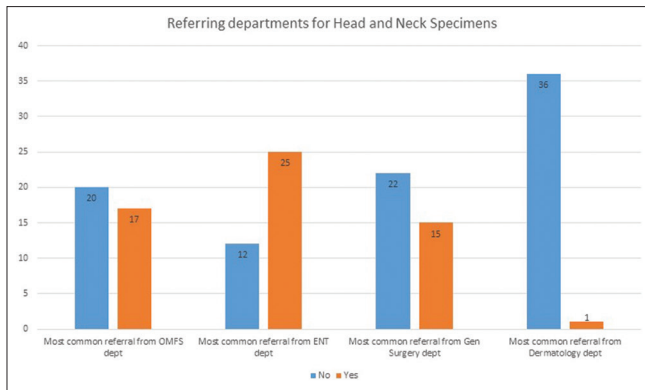
The survey was conducted to view the general pathologist's perception of services provided by practicing OMPs and their specialty utilization. Our survey shows that while

**Table 1: Responses received (percentage) for individual questions in questionnaire survey**

	n (%)
Designation	
Professor	10 (27)
Associate professor	11 (29.7)
Assistant professor	11 (29.7)
Senior resident	2 (5.4)
Private practitioner	3 (8.1)
1. Prior to receiving this questionnaire, were you aware of the existence of specialist oral pathologists?	
Yes	36 (97.3)
No	1 (2.7)
Total	37 (100)
2. Do you perceive a need for pathologists who specialize in lesion of the teeth, jaws, oral mucosa and salivary glands?	
Yes	30 (81.1)
No	7 (18.9)
Total	37 (100)
3. What, approximately, is the total number of specimens received by your department in a year?	
<2000	1 (2.7)
2000-5000	15 (40.5)
5000-10,000	10 (27)
>10,000	11 (29.7)
4. Approximately, how many dental, oral mucosal, salivary and jaw specimen does your department receive in a year?	
<50	1 (2.7)
50-100	12 (32.4)
100-300	4 (10.8)
300-500	1 (2.7)
500-1000	7 (18.9)
>1000	12 (32.4)
5. Do you ever refer cases to oral pathologists?	
Yes	11 (29.7)
No	26 (70.3)
Total	37 (100)
6. If yes, how many cases have you referred in the last year?	
<5	9 (81.8)
>10	2 (18.2)
Total	11 (100)
7. Was this a similar number to previous years?	
Yes, similar	10 (90.9)
No, More	1 (9.1)
Total	11 (100)
Usual referral of odontogenic cysts	
No	4 (36.4)
Yes	7 (63.6)
Total	11 (100)
Usual reference of odontogenic tumors	
No	3 (27.3)
Yes	8 (72.7)
Total	11 (100)
Would you consider a short term posting for your postgraduates in oral pathology?	
Yes	26 (70.3)
No	11 (29.7)
Total	37 (100)
Do you feel an oral pathologist must be a part of the team involved in diagnosis of complex head and neck pathologies referred to general histopathology laboratories?	
Yes	28 (75.7)
No	9 (24.3)
Total	37 (100)

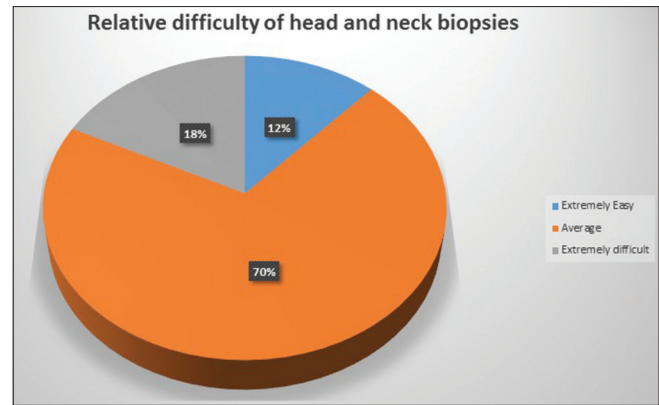
97% of general pathologists were aware of specialist oral pathologists before receiving the questionnaire, 81% perceived a need for them. This observation has been

reported by Barret and Speight as well as Binmadi NO in their article on the use of oral pathology services by histopathologists in the United Kingdom and Kingdom of Saudi Arabia, respectively. Mudaliar *et al.* in India (Mumbai), on the other hand, have reported lower percentages for the same in their study.<sup>[3-5]</sup> These differences, as highlighted by studies, could be due to differences in the training methods and curriculum related to the specialty of oral pathology. Hence, generating interest among the students toward the specialty by implementing new ideas in the curriculum in a constructive manner is needed.<sup>[5,6]</sup> The oral specimen formed a small proportion of the total specimen received in all previous studies, which could be one reason for low referral rates by general pathologists. The use of a common reference book called “Shafer’s textbook of Oral Pathology,” by general and oral pathologists in our survey to diagnose head and neck pathologies, could be another reason for low referrals by general pathologists. However, none the less, most of them found oral lesions to be sometimes taking time to diagnose and even admitted to considering postings in oral pathology as a part of the training program for their postgraduates. Barret and Speight have also mentioned in their study with this regard that many consultant histopathologists (over 40%) in the UK were prepared to consider a dental graduate without a medical qualification for training posts in their department.<sup>[4]</sup> On the other hand, Binmadi and Almazrooa reported in their study that only 32.4% of the pathologists were prepared to consider hiring an OMFP specialist at their department.<sup>[3]</sup> Our survey also showed only 30% referrals to OMFP specialists, which was also the case in a survey conducted by Binmadi NO. Barret and Speight have reported a slightly larger number of referrals in their study.<sup>[4]</sup> Odontogenic tumors and cysts formed the most common area of dilemma and reason for referral for most of the general pathologists, according to our survey. This has been the findings in most previous studies, except the one where they found salivary gland lesions to be the most common referral.<sup>[4]</sup> One of the main reasons for this dilemma is lack of general pathologists’ exposure to pathologies of oral and maxillofacial region as the medical curriculum often does not deal extensively with diseases in this region. Second, the classification of odontogenic cysts, tumors and salivary gland diseases is complex and not well known to general pathologists. In addition, some of these variants are extremely rare and may not be encountered in a lifetime of work.<sup>[2]</sup> Further, we should be cognizant that even though there is a handful of originating cells (cell rests, basal cell hamartias, superficial epithelium, etc.), there is an overlap on the histopathological features with a lot of diversity. The odontogenic tumor or cyst could show histological features with very few showing



**Figure 1:** Bar graph representing responses to question No. 9 on departments referring head and neck specimen

pathognomonic features. The major sources of specimen were from OMFS and ENT in our case. Thus, OMFP specialists are responsible for informing their society and referral groups about the scope of their service, experience and areas of interest to create awareness for the referral.<sup>[5]</sup> Studies by the authors in the United States mentioned that second opinion or outside cases constitute major referrals to an OMFP practice.<sup>[7,8]</sup> A Brazilian study by Oliveira e Silva *et al.* mentioned that their public health system was the major user of the diagnostic service of oral pathology in their institution.<sup>[9]</sup> Finally, the fact that general histopathologists do sometimes find it difficult to diagnose head and neck pathologies and would definitely consider an oral pathologist to be a part of the team rendering patient care, is a positive feature for oral pathology to flourish as a demanding specialty. Chugh *et al.* evaluated the effect of funding cuts on the utilization of an oral pathology diagnostic service in Canada. They reported that despite the introduction of fee-for-service, the number of specimens being submitted to OMFP appears to be on the rise as practitioners appear to recognize the value of a specialized oral pathology diagnostic service.<sup>[6]</sup> A 10-year study at Johns Hopkins Cancer Center (Baltimore, Maryland, USA) showed that the diagnoses in 7% of outside cases of head and neck lesions were later changed or modified, where the diagnosis changed from benign to malignant in 61% of the cases. These findings reflect the difficult nature of head and neck or oral and maxillofacial pathologies and their complex classification.<sup>[8]</sup> Cheng *et al.* and Binmadi and Almazrooa have highlighted the fact that there is a shortage of specialists in head and neck pathology in their respective countries although the demand remains to be high.<sup>[3,10]</sup> Hence, educational programs, including OMFP curriculum, must be redesigned to allow innovative growth and the development of skills in students that will be valued by the research community as well as the healthcare delivery system in the twenty-first century.<sup>[1,11]</sup>



**Figure 2:** Pie diagram representing responses to question No. 13 about difficulty level encountered by general pathologist while diagnosing head and neck pathologies

## CONCLUSION

There is a need for an oral pathology opinion by many general pathologists. Hence, there is a significant need to encourage referral and/or hiring of OMFP specialists at histopathology laboratories diagnosing complex head and neck cases. There is also a need to make changes in postgraduate oral pathology training to bridge the gap between both specialties.

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Nil.

## Conflicts of interest

There are no conflicts of interest.

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