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# Awareness on Management of Adenocarcinoma of the Palate

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## ABSTRACT

*Minor salivary gland neoplasms constitute approximately 25% of all the salivary gland tumours. The incidence of these tumors turning into malignancy is slightly greater than half but varies by series. Adenocarcinoma is an uncommon tumour that usually affects the minor salivary glands, particularly in the palate. Adenocarcinomas are distinctive neoplasms which may be sub classified according to their tissue growth patterns or histo-cytomorphology. Polymorphous low-grade adenocarcinoma (PLGA) is a minor salivary gland carcinoma usually arises intraorally, which occurs primarily in the palate. A survey was conducted in January 2020 among dental students. It was an online questionnaire based study, conducted to assess the awareness on the management of adenocarcinoma. 150 dental students (Third years, Final years, Interns) participated in this study. The data collected was entered in an Excel sheet and subjected to statistical analysis using SPSS version 20. Chi square test was done. 25.33% of third years, 29.33% of final years and 32% of interns were aware of the term adenocarcinoma. 32% of third years, 30.67% of final years, 33.33% of interns have come across patients with adenocarcinoma. 16.67% of third years, 25.33% of final years and 30% of interns knew how adenocarcinoma was caused. 14% of third years, 27.33% of final years, 26.67% of interns were aware of diagnostic aids. 16% of third years, 8.67% of final years, 30% of interns have seen a patient with similar lesions. Chi square test shows p<0.000, significant. It was seen that Interns had a good awareness of management of adenocarcinoma when compared to the final and third years.*

**Key words:** Awareness, Adenocarcinoma, Diagnosis, Malignant tumours

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## INTRODUCTION

Minor salivary gland neoplasms constitute approximately 25% of all the salivary gland tumors [1]. The incidence of these tumours turning into malignancy is slightly greater than half but varies by series. Polymorphous low-grade adenocarcinomas are low-grade malignant salivary-gland neoplasms with a broad variety of architectural patterns [2]. Adenocarcinoma is an uncommon tumour that usually affects the minor salivary glands, particularly in the palate [3]. Adenocarcinoma is a relatively common malignancy of the oral cavity, representing 7% to 11% of all intraoral minor salivary gland tumors, and 19% to 26% of those that are malignant [4]. Adenocarcinomas are distinctive neoplasms which may be sub classified according to their tissue growth patterns or histo-cytomorphology. A clinico-pathologic evaluation of adenocarcinomas of salivary tissues has also been delayed by their inclusion under the generic heading of 'adenocarcinoma', wherein all forms of glandular malignancy are included [5]. Polymorphous low-grade adenocarcinoma (PLGA) is a minor salivary gland carcinoma usually arises intraorally, which occurs primarily in the palate. This tumour is characterized by histologic blandness, cytologic uniformity, and a variable, infiltrating growth pattern [6]. Recently, polymorphous low-grade adenocarcinoma is regarded as the second most common salivary gland tumour after mucoepidermoid carcinoma. polymorphous low-grade adenocarcinoma has been a locally invasive carcinoma without distant metastases. Polymorphous low-grade adenocarcinoma is usually treated with local excision [7]. Low-grade papillary adenocarcinoma of minor salivary glands is rare and tends to occur in the palate [8]. Low-grade papillary adenocarcinoma of the

palate is a rare but distinctive neoplasm. Low grade adenocarcinoma is often misdiagnosed and inadequately treated initially and progresses slowly [9] Mucinous adenocarcinoma (MAC) arising in the oral cavity especially in palate is extremely rare.

Previously our department has published extensive research on various aspects of prosthetic dentistry [10-20], this vast research experience has inspired us to research about the awareness on management of squamous cell carcinoma. The aim of this study is to create awareness on diagnosis of adenocarcinoma of palate among dental students.

## MATERIALS AND METHOD

### Study design

Awareness based survey.

### Data collection

A survey was conducted in January 2020 among dental students (Third years, Final years, Interns). It was an online questionnaire based study, conducted to assess the awareness on the management of adenocarcinoma. 150 dental students (Third years, Final years, Interns) participated in this study. The data collection was done via google forms.

### Survey instrument

A pretested, self-administered, closed ended questionnaire comprising the following sections formed the survey instrument. A structured questionnaire containing 10 questions which was adopted from a validated questionnaire developed by the World Health Organisation. The questionnaire was equally distributed among Third years, Final years, Interns. The goal of developing this questionnaire was to know about the awareness the dental students have on the management of adenocarcinoma. The questions had to be answered with a Yes or No response.

### Ethical approval

Ethical approval was obtained from the institutional ethical committee.

### Data analysis

The data collected was entered in an Excel sheet and subjected to statistical analysis using SPSS version 20. Chi square test was done. The independent variables are age and gender while dependent variables are knowledge, attitude and practice of management of adenocarcinoma. The level of significance was set at $p<0.05$.

## RESULTS

From the results of the study, 25.33% of third years, 29.33% of final years and 32% of interns were aware of the term adenocarcinoma. Chi square test shows p value=0.00, significant (Figure 1). 32% of third years, 30.67% of final years, 33.33% of interns have come across patients with adenocarcinoma. Chi square test shows p value=0.00, significant (Figure 2). 16.67% of third years, 25.33% of final years and 30% of interns knew how adenocarcinoma was caused. Chi square test shows p value=0.00, significant (Figure 3). 14% of third years, 27.33% of final years, 26.67% of interns were aware of diagnostic aids. Chi square test shows p value=0.00, significant (Figure 4). 16% of third years, 8.67% of final years, 30% of interns have seen a patient with similar lesions. Chi square test shows p value=0.00, significant (Figure 5). 32% of third years, 10% of final years and 13.33% of interns have never misdiagnosed a case of adenocarcinoma. Chi square test shows p value = 0.00, significant (Figure 6). 28.67% of third years, 26% of final years and 24% of interns were aware of clinical presentations of adenocarcinoma. Chi square test shows p value=0.00, significant (Figure 7). 26% of third

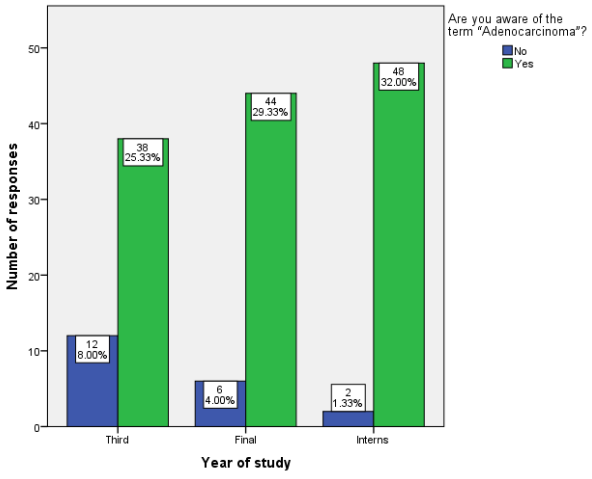


**Figure 1: Bar graph denotes association between year of study of the participants and number of participants who were aware of the term adenocarcinoma. X axis denotes the year of study of the participants and Y axis denotes the number of responses. The response of yes (green) was mostly given by the interns and the response no (blue) was mostly given by the third years . Chi square test shows p=0.000, significant. Hence proving that there is significant association between the year of study of the participants and the number of dental students who were aware of the term adenocarcinoma.**

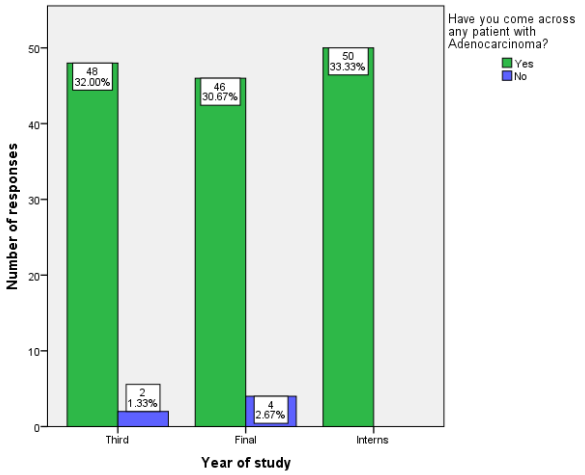


**Figure 2: Bar graph denotes association between year of study of the participants and number of participants who came across a patient with adenocarcinoma. X axis denotes the year of study of the participants and Y axis denotes the number of responses. The response of yes (green) was mostly given by the interns and the response no (blue) was mostly given by the final years . Chi square test shows p=0.000, significant. Hence proving that there is significant association between the year of study of the participants and the number of dental students who came across a patient with adenocarcinoma.**

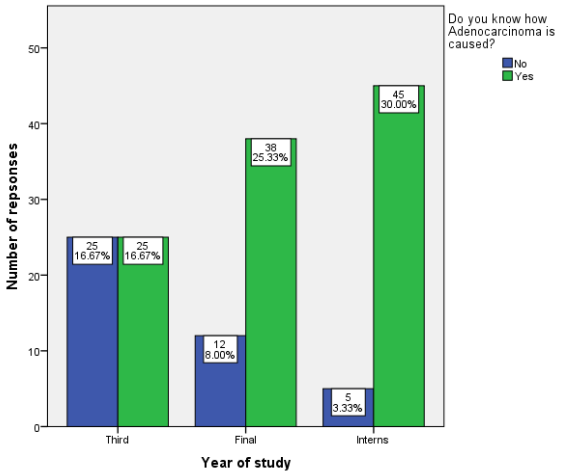


**Figure 3: Bar graph denotes association between year of study of the participants and number of participants who knew how adenocarcinoma was caused. X axis denotes the year of study of the participants and Y axis denotes the number of responses. The response of yes (green) was mostly given by the interns and the response no (blue) was mostly given by the third years . Chi square test shows p=0.000, significant. Hence proving that there is significant association between the year of study of the participants and the number of dental students who knew how adenocarcinoma was caused.**

years, 21.33% of final years and 24.67% of interns were aware of histopathological features. Chi square test shows p value=0.00, significant (Figure 8). 10.67% of third years, 27.33% of final years and 20% of interns knew the treatment options for adenocarcinoma. Chi square test shows p value=0.00, significant (Figure 9). 22.67% of third years, 11.33% of final years and 32% of interns recommended incisional biopsy

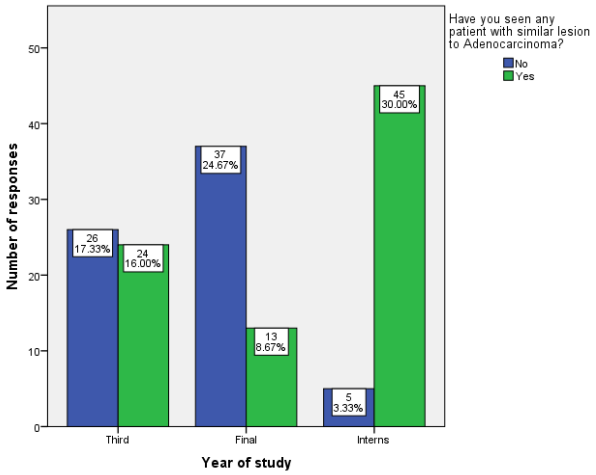


**Figure 4: Bar graph denotes association between year of study of the participants and number of participants who knew the diagnostic aids of adenocarcinoma. X axis denotes the year of study of the participants and Y axis denotes the number of responses. The response of yes (green) was mostly given by the interns and the response no (blue) was mostly given by the third years . Chi square test shows p=0.000, significant. Hence proving that there is significant association between the year of study of the participants and the number of dental students who knew the diagnostic aids of adenocarcinoma.**

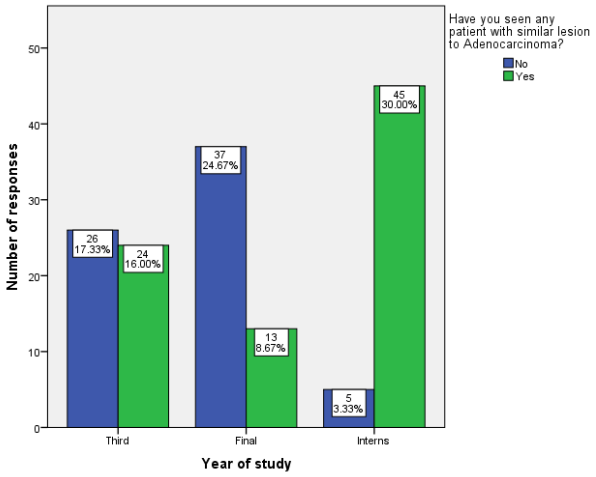


**Figure 5: Bar graph denotes association between year of study of the participants and number of participants who had seen a patient with similar lesions. X axis denotes the year of study of the participants and Y axis denotes the number of responses. The response of yes (green) was mostly given by the interns and the response no (blue) was mostly given by the final years . Chi square test shows p=0.000, significant. Hence proving that there is significant association between the year of study of the participants and the number of dental students who had seen a patient with similar lesions.**

for confirmatory diagnosis. Chi square test shows p value=0.00, significant (Figure 10).

## DISCUSSION

Our results depicted that the majority of the participants were aware of the term adenocarcinoma. Most of them had come across patients with adenocarcinoma and had

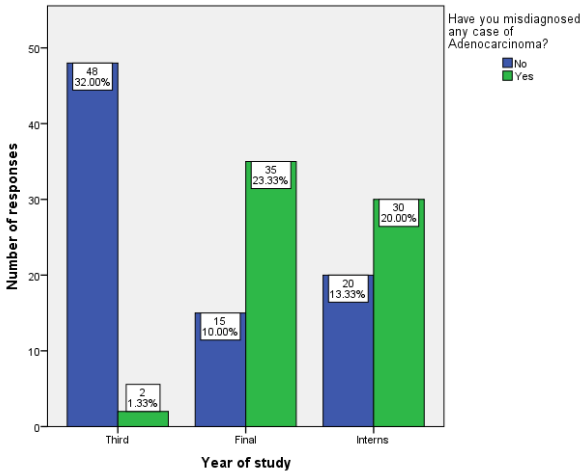


**Figure 6: Bar graph denotes association between year of study of the participants and number of participants who have misdiagnosed a patient. X axis denotes the year of study of the participants and Y axis denotes the number of responses. The response of yes (green) was mostly given by the final years and the response no (blue) was mostly given by the third years. Chi square test shows p=0.000, significant. Hence proving that there is significant association between the year of study of the participants and the number of dental students who have misdiagnosed a patient.**

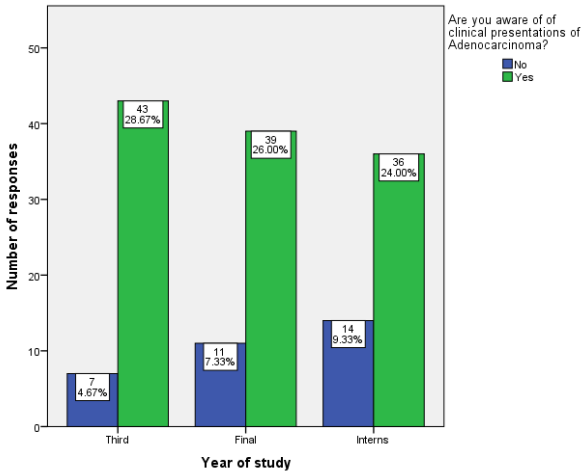


**Figure 7: Bar graph denotes association between year of study of the participants and number of participants who were aware of the clinical presentations of adenocarcinoma. X axis denotes the year of study of the participants and Y axis denotes the number of responses. The response of yes (green) was mostly given by the third years and the response no (blue) was mostly given by the interns. Chi square test shows p=0.000, significant. Hence proving that there is significant association between the year of study of the participants and the number of dental students who were aware of the clinical presentations of adenocarcinoma.**

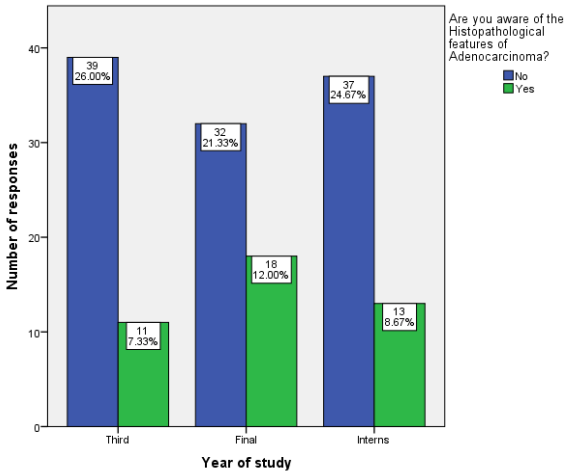


**Figure 8: Bar graph denotes association between year of study of the participants and number of participants who were aware of the histopathology features of adenocarcinoma. X axis denotes the year of study of the participants and Y axis denotes the number of responses. The response of yes (green) was mostly given by the final years and the response no (blue) was mostly given by the third years. Chi square test shows p=0.000, significant. Hence proving that there is significant association between the year of study of the participants and the number of dental students who were aware of the histopathology features of adenocarcinoma.**

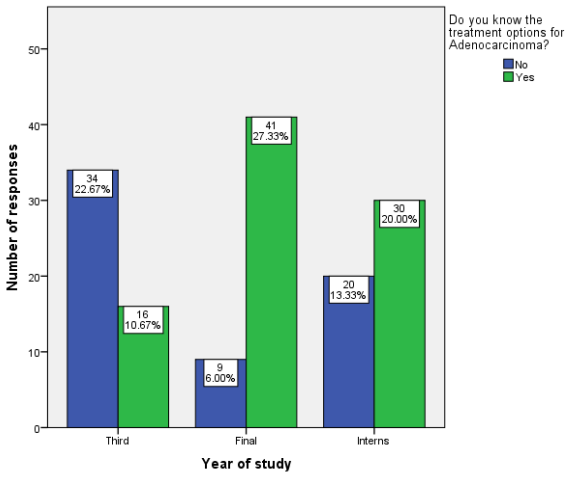


**Figure 9: Bar graph denotes association between year of study of the participants and number of participants who knew the treatment options of adenocarcinoma. X axis denotes the year of study of the participants and Y axis denotes the number of responses. The response of yes (green) was mostly given by the final years and the response no (blue) was mostly given by the third years. Chi square test shows p=0.000, significant. Hence proving that there is significant association between the year of study of the participants and the number of dental students who knew the treatment options of adenocarcinoma.**

knowledge on the etiology of adenocarcinoma. Most of them knew the diagnostic aids of adenocarcinoma. The majority of the participants had seen cases with similar lesions. Most of the participants did not misdiagnose a case with adenocarcinoma because they were aware of the clinical presentation however they were not aware of the histopathological features. Most of the participants knew the treatment options available for adenocarcinoma and recommended an excisional biopsy for confirmatory diagnosis.

In our study, it was reported that most of the participants were not aware of the histopathological features of adenocarcinoma. Batsakis et al reported that a histologic feature, present in varying degrees, in all of the tumors, was an elongation or spindling of the neoplastic

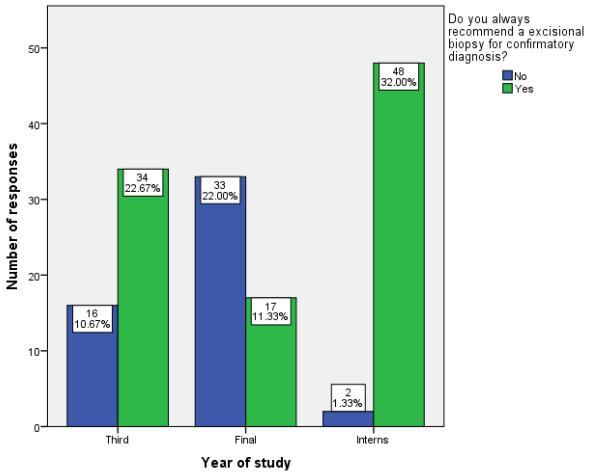


**Figure 10: Bar graph denotes association between year of study of the participants and number of participants who recommended Excisional biopsy for the confirmatory diagnosis. X axis denotes the year of study of the participants and Y axis denotes the number of responses. The response of yes (green) was mostly given by the interns and the response no (blue) was mostly given by the final years. Chi square test shows p=0.000, significant. Hence proving that there is significant association between the year of study of the participants and the number of dental students who recommended Excisional biopsy for the confirmatory diagnosis.**

cells [5]. Adenocarcinoma generally has a slow rate of growth, absence of symptoms, less aggressiveness, minimal metastatic potential and good prognosis [21]. It basically can occur mostly on the palate, followed by either the upper lip or buccal mucosa and rarely could involve floor of mouth, lower lip, alveolar ridge and tongue [22].

Our study shows that the majority of the participants had knowledge on the etiology of adenocarcinoma. Batsakis et al. reported that the majority of the adenocarcinomas of salivary tissues are presumed to arise from the reserve cells of the metabolically active or conduit parts of the salivary duct unit, i.e., intra-, inter-, and excretory ducts.

In our study, it was reported that the majority of the participants knew the treatment options for adenocarcinoma and recommended excisional biopsy for confirmatory diagnosis. Sathyanarayanan et al. reported that wide local excision should be the ideal treatment of choice. If positive or close surgical margins is there, post-operative radiotherapy is recommended but it has not shown to alter outcome in patients without neck node metastasis [23]. Batsakis et al. reported that surgical excision was the primary treatment in all patients. The extent of the excision ranged from 'excisional biopsy' to a block resection, including hemimandibulectomy, radical neck dissection and post-operative irradiation. Wide local excision should be the treatment of choice. If positive or close surgical margins are present, post-operative radiotherapy is done but it has not shown to alter outcome in patients without neck node metastasis. Radiotherapy is indicated if there is cervical lymph node metastasis. The recurrence rate for adenocarcinoma is minimal following wide excision and if present radical excision is done [24].

There are no comparative studies since not much attention is given towards training the students at an undergraduate level to encounter and manage patients with adenocarcinoma. Thus the curriculum should emphasize the need to know about the management of adenocarcinoma. The limitation was the study is that the study was conducted only in one city (Chennai) and may not be generalized to other regions.

## CONCLUSION

Within the limitation of the study it was seen that Interns had a good awareness on management of adenocarcinoma when compared to the final and third years. This is because of the clinical expertise that the interns have acquired through clinical experience and clinical practice.

## ACKNOWLEDGEMENT

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## CONFLICTS OF INTEREST

The authors of the study declare that there were no conflicts of interest.

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