

# A Demographic Study on Oral Non Squamous Cell Malignant Tumors

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### Abstract :

**Background:** Nonsquamous cell malignant tumors of jaw and oral soft tissue are rare constituting between 6%-10% of all malignancies in the region. A few case reports of individual tumors are available while reviews of significant series is lacking. This report presents 22 cases of Nonsquamous cell malignant tumors collected over 8 months at a tertiary oral care centre in Dhaka, Bangladesh. **Objective:** To find out the distribution & pattern of oral nonsquamous cell malignant tumors among all oral malignancy and to find out the age, sex, site, clinical presentation, the histological types of these tumors. **Method:** This descriptive cross sectional study was done in Oral and Maxillofacial Surgery Department, Dhaka Dental College and Hospital. The entire patient histopathologically diagnosed as any type of Nonsquamous cell tumor were selected. Data were collected in a summarized data sheet. Then histopathological types of them were analyzed to indicate the distribution according to age, gender, site and clinical presentation. **Result:** There were 107 Oral malignancies of which 22(20.56%) were Nonsquamous cell malignant tumors which is significant in comparison to Squamous cell carcinoma in Bangladesh. Among the respondents, 9(40.91%) were diagnosed as minor salivary glands malignant tumors, 7(31.2%) were diagnosed as sarcomas, Malignant melanoma were 4(18.18%) and Non-Hodgkin's lymphoma were 2(9.09%). The male to female ratio was 1:1.2 with ages were between 9 years to 70 years old (mean age  $35.45 \pm 21.76$  years) with most patients (36.36%) in 16 to 30 years of life. Cases presented with symptoms such as swelling (100%), pain, paresthesia, loose tooth and tissue ulceration.

**Conclusion:** In Dhaka Dental College Hospital, nonsquamous cell malignant tumors account for 20.56% of all oral malignancies among them minor salivary glands malignant neoplasm and malignant melanoma were the predominant type. Most affected were people in the 2<sup>nd</sup> and 3<sup>rd</sup> decades of life with no sex predilection. Most common site of involvement was maxilla. The need for improved medical awareness, diagnostic facilities and upgrading of infrastructure was stressed.

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## Introduction

Nonsquamous cell malignant tumors in the oral regions are rare in our country. There is no available data on this topic. The lack of data hinders the development of appropriate strategy and awareness for the management of this group of tumours. This study would help to enlighten the field and serves to furnish few data that would contribute to take proper steps in managing such cases.

75% of all oral cancers occur in developing countries, especially in South East Asia & the Indian sub continent<sup>1</sup>. In contrast to oral squamous cell carcinoma these cancers are not preventable probably due to their rare occurrence, the signs and symptoms are often not recognized at an early stage. The histopathologic diagnosis may at times be difficult to establish with certainty. Furthermore, no firm advances have been made towards the effective treatment of nearly all these neoplasm's for long-term survival.

Nonsquamous cell malignant tumors can affect the oral tissues has wide variety of histological types. A demographic study shows minor salivary glands tumors (33.3%), malignant melanoma (23.1%), lymphoma (20.5%) and metastatic tumors (2.6%)<sup>2</sup>. Another study found maxillofacial sarcomas as osteosarcoma (28%), chondrosarcoma(17%), rhabdomyosarcoma (12%) and fibrosarcoma (12%)<sup>3</sup>.

Nonsquamous cell malignant tumors may appear at any age, the earliest reported case of a sarcoma in 24 months old baby<sup>3</sup>. In a study on salivary glands carcinoma age range is above 50 years (80%)<sup>4</sup>. In a study on burkitt's lymphoma age range is 7-50 years with male predominance<sup>5</sup>.

Neoplasms of the minor salivary glands have a greater tendency to be malignant than those of the major glands and these affect mostly palate (61.8%).Malignant melanoma also affect in palate (70%)<sup>2</sup>. Clinical presentation of oral nonsquamous cell malignant tumors varies depending upon the histological types and location of the tumor. A study on intraoral oral minor salivary gland tumors that majority showed as swelling (61.25%)<sup>6</sup>. Orofacial sarcoma may present with swelling (100%), pain (54%) and tissue ulceration (26%)<sup>3</sup>. Sarcoma may appear as progressive swelling or mass,

pain, painless in the rest, facial nerve palsy was and bleeding<sup>7</sup>. Ebenezer showed that malignant melanoma presents as asymptomatic swelling, occasional bleeding and pain<sup>8</sup>.

In Bangladesh, a case of malignant fibrous histiocytoma of an 18 years male patient of Pleomorphic-storiform type in right molar region of maxilla was reported<sup>9</sup>. Sadat et al reported five cases of extranodular Non-Hodgkin's lymphoma affecting jaws and oral soft tissues over a period of four years<sup>10</sup> and reviewed 139 cases of oral malignancies from Bangladeshi population among which sarcomas were 12.9%<sup>11</sup>.

## MATERIALS AND METHODS:

The descriptive cross sectional study was carried out in the department of Oral and Maxillofacial Surgery, Dhaka Dental College Hospital from July'2011 to February' 2012.All the patients with oral malignancy were studied but nonsquamous cell malignant tumors irrespective of age and sex were selected for the study. Sample size of the study was 22, of them 10 were male and 12 cases were female. The entire patient histopathologically diagnosed as any type of Nonsquamous cell tumor were selected. Data were collected in a summarized data sheet. Then histopathological types of them were analyzed to indicate the distribution according to age, sex, gender, site, size, clinical presentation and histological type. Data were screened and cleaned for any discrepancy. After cleaning data were entered into template of SPSS@17 software. No specific formulation was applied due to small sample size. Descriptive statistics were generated to see the distribution of baseline characteristics of the patient.

Inclusion criteria were histopathologically diagnosed case of nonsquamous cell malignant tumors, patients who gave consent to be included in this study and the exclusion criteria were not given consent to be included in the study, psychotic or Mentally handicapped patient, incomplete clinical data, reports with doubtful and controversial diagnosis. An informed written consent was taken for every patient explaining the nature and objectives of the study. Finally ethical committee of Dhaka Dental College had given the ethical clearance for this study.

**Results**

Among the 22 respondents 10 (45.45%) were male and rest 54.55 % were female. Majority of the respondents (36.36%) were in the age between 16 to 30 years, mean age was 35.45±21.76, minimum-9.00 years and maximum-70 years.

**Table 1 Distribution of oral Nonsquamous cell malignant tumors in oral & maxillofacial surgery department of Dhaka Dental College and Hospital.**

| Type                              | Number | Percentage (%) |
|-----------------------------------|--------|----------------|
| Squamous Cell Carcinoma           | 85     | 79.44          |
| Nonsquamous Cell Malignant tumors | 22     | 20.56          |
| Total                             | 107    | 100            |

There were 107 cases of malignant neoplasm of the oral and maxillofacial region within the study period of which 22 (20.56%) were Nonsquamous Cell malignant tumors as compared to 107 (79.44%) cases of squamous cell carcinoma.

**Table 2: Distribution of the respondents by Histopathological diagnosis (n=22).**

| Histopathological diagnosis    | Frequency | Percent | Total |
|--------------------------------|-----------|---------|-------|
| MSGT *                         |           |         |       |
| Adenoidcystic carcinoma        | 4         | 18.18   | 40.91 |
| Mucoepidermoid carcinoma       | 4         | 18.18   |       |
| Acinic cell carcinoma          | 1         | 4.55    |       |
| Sarcomas                       |           |         | 31.82 |
| Chondrosarcoma                 | 2         | 9.09    |       |
| Rhabdomyosarcoma               | 2         | 9.09    |       |
| Ewings sarcoma                 | 1         | 4.55    |       |
| Osteosarcoma                   | 1         | 4.55    |       |
| Malignant fibrous histiocytoma | 1         | 4.55    |       |
| Malignant melanoma             | 4         | 18.18   | 18.18 |
| Non-Hodgkin's lymphoma         | 2         | 9.09    | 9.09  |

\* MSGT= Minor Salivary Glands Tumors.

Among the 22 respondents, 9(40.91%) were diagnosed as minor salivary glands malignant tumors, 7(31.2%) were diagnosed as sarcomas, Malignant melanoma were 4(18.18%) and Non-Hodgkin's lymphoma were 2(9.09%).

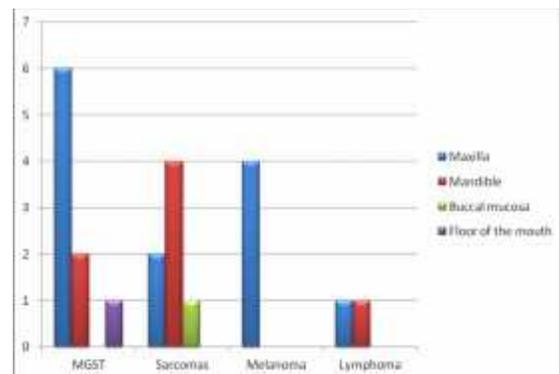
**Fig1: Distribution of the respondents by Site of the lesion**



**1: A 60 years old patient with Malignant Melanoma.**



**Fig 2: A 31 years old Female with Adenocystic Carcinoma of maxilla**



MSGT= Minor Salivary Glands Tumors.

By the site, most of the minor salivary glands malignant tumors were found at Maxilla, Sarcomas at Mandible, Melanoma at maxilla (100%) and Non-Hodgkin's lymphoma at Maxilla and Mandible equally.

**Table 3: Distribution of the respondents by Diameter of the lesion**

| Diameter of the lesion in sq.cm                             | Frequency | Percent |
|---|-----------|---------|
| < 25 sq.cm  | 13        | 59.09   |
| 25 - 50 sq.cm   | 5         | 22.73   |
| > 50 sq.cm  | 4         | 18.18   |
| <hr/>   |           |         |
| Total   | 22        | 100.0   |
| Mean 36.93 ± 46.02, Minimum-3 sq. cm and Maximum-180 sq. cm |           |         |

The above table shows that diameter of the lesion of 13(59.09%) were < 25 sq.cm, 6(22.73%) were between 25 - 50 sq.cm and only 4(18.18%) were found > 50 sq.cm. Mean diameter was 36.93 ± 46.02 and minimum 3 sq. cm and maximum 180 sq. cm.

**Discussion:**

This cross-sectional demographic study on oral nonsquamous cells malignant tumors in Oral and Maxillofacial Surgery department of Dhaka Dental College and Hospital over a period of 8 months (July'2011 to February'2012) on 107 patients of oral malignancies, among them 22(20.56%) were patients of nonsquamous cell malignant tumors. Others studies showed that 18.2% were nonsquamous cell malignant tumors<sup>2</sup>. The data found in this study is similar to that of the study. In this study about 6.54% (n=7) were sarcoma among all oral malignancies that shows a higher incidence from some studies. In Bangladesh, a few cases were reported but there is no series of data is available on these tumors of oral cavity<sup>9,10</sup>. However we believe that within a short duration incidence of 22 cases (20.56%) in the estimated population served by our center shows statistically significant.

In this present study, among the 22 respondents, 9(40.91%) were diagnosed as minor salivary glands malignant tumors, 7(31.2%) were diagnosed as sarcomas, Malignant melanoma were 4(18.18%) and Non-Hodgkin's lymphoma were 2(9.09%). In minor salivary glands malignant tumors, Adenoidcystic carcinoma (4/18.18%), Mucoepidermoid carcinoma (4/18.18%) and Acinic cell carcinoma(1/4.55%) were found. The histological variants of sarcomas found in this study were Chondrosarcoma (2/9.09%), Rhabdomyosarcoma (2/9.09%), Ewing's sarcoma (1/4.55%) Osteosarcoma (1/4.55%) and Malignant fibrous histiocytoma(1/4.55%). In a study mucoepidermoid carcinoma was about 52.38% among malignant intraoral minor salivary glands tumors, 31.83% was sarcomas,18.18% was melanomas and 9.09% was Non-Hodgkin's lymphoma. In the minor salivary glands malignant tumors, 4(18.18%) cases were adenoid cystic carcinoma, 4(18.18%) cases were mucoepidermoid carcinoma and 1(4.55%) case of acinic cell carcinoma<sup>6</sup>.

In the present study it is noted that the majority of patients were in between 16 to 30 years (36.36%) in which the minor salivary glands malignant tumors is between 18 to 70 years, malignant melanoma from 45 to 70 years, sarcomas in between 9 to 35 years and lymphoma from 25 to 55 years of age. Other studies found the age range in the cancers of the minor salivary glands is 10 to 72 years, in malignant melanoma age range from 56 to 77 years, Sarcoma with 11 to 58 years and lymphoma with 1 to 85 years<sup>2</sup>.

All the patients of chondrosarcomas in this series age ranges 22 to 35 years. The site of the lesion in this study all were in the mandible which were presented with painful swelling and limitation of mouth opening. Other studies showed chondrosarcoma affects the maxilla more than the mandible<sup>12</sup>. Larger series are needed to ascertain the actual site predisposition for chondrosarcoma among our population.

Rhabdomyosarcomas can occur at any age. This lesion is commonest in the first decade of life and the commonest maxillofacial sarcoma of

childhood. In this study, 2 cases of Rhabdomyosarcomas were found, patient age ranges from 9-16 years and both of them were female. Their clinical presentations were swelling, pain ulceration, paresthesia and limitation of mouth opening. Five cases were recorded in India by Pandey et al, whose mean age was 16 years (range 4-33 years) with 80% in the 1<sup>st</sup> and 2<sup>nd</sup> decades<sup>7</sup>. The age range was wider than this study.

Non-Hodgkin's lymphomas often show up in extranodal sites of the head and neck<sup>13</sup>. In this study, 2 cases of Non-Hodgkin's lymphoma were found. The age ranges from 25 to 55 years and both of them were female; one affected the mandible and another in maxilla. Their presentations were intraoral swelling (100%), pain, loose tooth and toothache.

#### Conclusion:

Non Squamous Cell Malignant Tumors comprise those malignancies that often cause not only the most devastating morbidity but also very rapid mortality among affected patients. The incidence and relative frequency of oral nonsquamous cell malignant tumors in the present study was relatively high, necessitating awareness among health providers so that early diagnosis and management may be obtained.

#### References:

1. Parkin, D.M., Pisani, P., Ferlay, J. Estimates of the worldwide incidence of 25 major cancers in 1990. *International Journal of Cancer*, Mar 15, 1999, 80(6), 827-41.
2. Zarei M.R., Chamani I, G., Hashemipour, M.A., An Epidemiological study on oral and pharyngeal nonsquamous cell malignant tumors in Kerman province. *Journal of Dentistry, Tehran University of medical sciences*, 2007; vol.4, 35-43.
3. Adebayo, E. T., Ajike, S. O., Adebola, A. Maxillofacial sarcoma in Nigeria. *Annals of African Medicine*, 2005; 4 (1), 23-30.
4. Amusa, Y.B., Olabanji, J.K., Akinpel, V.O., Olateju, S.O., Agbakwuru, E.A., Ndukwe, et al. Pattern of head and neck malignant tumors in a Nigerian teaching hospital: a ten year review. *West African Journal of Medicine*, 2004; 23, 280-285.
5. Ardekian, L., Rachmiel, A., Rosen, D., Abu-El-Najj, E., Peled, M; Laufer, D.. Burkitt's

- lymphoma of the oral cavity in Israel. *Journal of cranio-maxillofacial surgery*, 1999; 27, 294-97.
6. Jansisyanont, P., Blanchaert, R., Robert, A. Intraoral minor salivary gland neoplasm: A single institution experience of 80 cases. *International Journal of Oral Maxillofacial Surgery*, 2002; 31(3), 257-61.
7. Pandey, M., Thomas, G., Mathew, A., Abraham, E.K., Somanathan, T., Ramadas, K., et al, Sarcoma of the oral and maxillofacial soft tissue in adults. *European Journal of Surgical Oncology*, 2000; 26, 145-148.
8. Ebnezer, J. Malignant melanoma of the oral cavity. *Indian Journal of Dental Research*, 2006; 17(2), 94-96.
9. Akhter, M., Molla, M.R., Hossain, S., Mondoul, S.K. A rare case of oral malignant fibrous histiocytoma and short review of literature. *The ORION Medical Journal*, 2008 ; 29, 535-536.
10. Sadat, S.M.A., Rita, S.N., Khatun, S., Raihan, M., Ahmed, M. Non-Hodgkin's lymphoma affecting jaws and oral soft tissues: study of five rare cases. *The ORION Medical Journal*, 2010; 33(1), 714-715.
11. Sadat, S.M.A., Ahmed, M., Bhuian, R. A., Hossain, K. A., Rita, S.N Malignant lesion of Jaws and Oral Soft Tissues. *Xix Scientific Congress of BOSCON*, 2006. Dhaka Bangladesh.
12. Adebayo, E.T., Ajike, S.O., Adebola, A., Adekeye, E.O.,. Oral and Maxillo-facial soft tissue sarcomas in an Africa population. *Nigerian Journal of Surgical Research*, 2006; 8 (3 - 4), 135-139.
13. Larson, D.L., Robbins, K.T., Butler, J.J.. Lymphoma of the head and neck. A diagnostic dilemma. *American Journal of Surgery*, 1984; 148(4), 433-7.