Original Research Article

Spectrum of Premalignant and Malignant Oral and Oropharyngeal Lesions in a Tertiary Care Hospital of the Indo-Gangetic Plain

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Abstract

Background: Cancer of the oral cavity accounts for the highest number of cases in men in India and is the second most common cancer in females in India. The burden of oral premalignant and malignant lesions is escalating in our nation. **Aim:** To assess the spectrum of oral and oropharyngeal premalignant and malignant lesions in our region based on histopathological findings. **Materials and methods:** A retrospective analysis of 91 biopsies of oral and oropharyngeal premalignant and malignant lesions was undertaken. The neoplasms were categorised on the basis of World Health Organization classification. **Result:** Out of a total of 147 cases of oral and oropharyngeal biopsies received over a four-year duration, 91 cases showed either premalignant, benign or malignant change. 36 lesions (24.48%) were premalignant and 47(31.9%) were malignant. Leukoplakia was the most common premalignant lesion and Well-differentiated Squamous cell carcinoma was the most common malignant lesion encountered in our study. **Conclusion:** A knowledge of premalignant lesions in the region would facilitate preventive programs to reduce the malignant transformation and a high burden of oral and oropharyngeal cancers in the area indicates an urgency of introducing community based screening modalities for early detection of these cancers and providing cost effective management to those with poor socio-economic status.

Keywords: Oral lesions, oropharynx, premalignant, malignant.

Introduction

The incidence of oral cancer in India is one of the highest in the world[1]. Numerous predisposing factors which have been implicated are smoking, betel nut, gutka chewing, alcohol, malnutrition, improper oral hygiene, ill- fitting dentures etc[2]. The oral premalignant lesions have been considered in 2005 by WHO under a single group known as OPMDs - Oral Potentially Malignant Disorders which mainly constitute leukoplakia, erythroplakia, oral lichen planus, oral Submucosal fibrosis and few other lesions[3]. There is an urgent need to reduce the oral cancer incidence burden in our country as well as globally by knowing the prevalence rate and providing means for early screening and detection of Oral Potentially Malignant Disorders. A WHO report states that tobacco use is the most important risk factor causing 22% deaths by oral cancer in the world.

Material and methods

This is a retrospective study conducted at T S Misra Medical college and Hospital located at outskirts of Lucknow, Uttar Pradesh, India in the region of Indo-Gangetic Plain. Slides of 91 histopathologically confirmed cases of oral and oropharyngeal premalignant, benign and malignant lesions were reviewed during a four-year duration between April 2017 and March 2021. A total of 147 oral and oropharyngeal biopsies were received in the Department of Pathology of our hospital during this time period.

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Results

The study involved 91 patients of oral and oropharyngeal premalignant, benign and malignant lesions. Among these 23 (25.2%) were females and 68 (74.7%) were males.

Most of the lesions were in 50–59-year age group followed by 40-49 year and 30–39-year age range. 72.3% lesions were above 40 yrs of age. The minimum age of patients in our study was 19 years and the maximum age was 86 years.

Table 1: Distribution of patients according to age

Age group	Total Premalignant, benign and malignant	Malignant
10-19	02	00
20-29	11	05
30-39	19	06
40-49	20	10
50-59	21	14
60-69	12	07
70-79	05	04
80-89	01	01

Site of maximum, 44 such lesions were in buccal mucosa (48.35%), followed by 28 lesions in tongue (30.7%).

Table 2: Sites of total oral and oro-pharyngeal biopsies

Site of oral and oropharyngeal biopsies	Total-147
Oral	113
Base of tongue	03
Tonsil	22
Soft palate	01
Submandibular	08

Table 3: Sites of premalignant, malignant and benign lesions

Site of premalignant, benign and malignant lesions	Total - 91
Buccal mucosa	44
Tongue	28
Floor of mouth	01
Retromolar trigone	02
Cheek	04
Lip	03
Maxilla	01
Mandible	01
Soft palate	01
Hard palate	01
Periapical	01
Submandibular gland	02
Tonsil	02

Out of a total of 147 oral and oropharyngeal biopsies received in the four-year period, 36 (24.48%) were found to be premalignant, 47 (31.9%) were malignant and 8 (5.4%) were benign tumors.

Out of the 36(24.48%) potentially malignant lesions, 17 were leukoplakia (6 with dysplasia and 11 without dysplasia), 11 showed Lichenoid dysplasia, 4 showed oral sub-mucosal fibrosis and 4 were dysplastic (one mild dysplasia, three with severe dysplasia). [Table 4].

Table 4: Premalignant lesions

Premalignant lesions	Total – 36 (24.48%)
Leukoplakia	17
Lichenoid dysplasia	11
Oral Submucosal fibrosis	04
Mild dysplasia	01
Severe dysplasia	03

Out of 47 (31.9%) malignant lesions [Table 5] received, 44(93.61%) were Squamous cell carcinomas - 30 (63.8%) Well differentiated, 13 (27.6%) Moderately differentiated and one (2.1%) Poorly differentiated squamous cell carcinoma. Two of the Squamous cell carcinomas were detected in the tonsil. The Well- differentiated squamous cell carcinoma shows enlarged cells with eosinophilic cytoplasm and keratin pearl formation (Fig 1-scanner view and Fig 2-low power view)

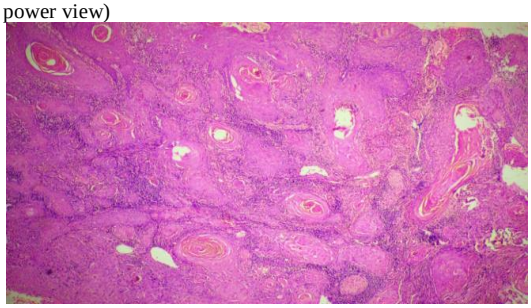

Fig. 1 Well- differentiated Squamous cell carcinoma

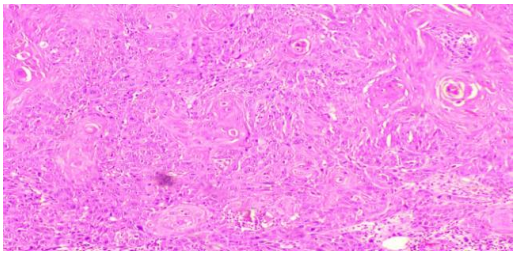

Fig 2: Well-differentiated Squamous cell carcinoma

Whereas Moderately differentiated Squamous cell carcinoma is composed of neoplastic cells present in sheets with less ordered arrangement (Fig 3).

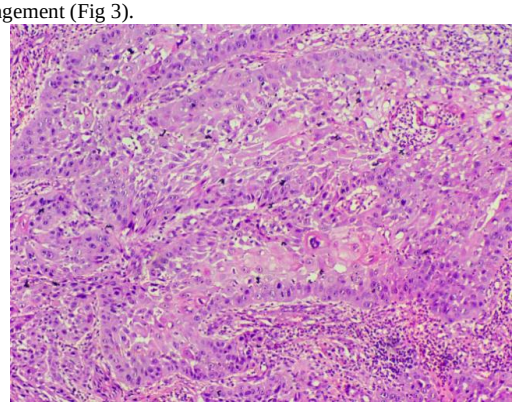

Fig 3: Moderately differentiated Squamous cell carcinoma

Table 5: Malignant lesions

Malignant lesions	Total- 47 (31.9%)
Squamous cell carcinoma (SCC)	44
Well differentiated SCC	30
Moderately differentiated SCC	13
Poorly differentiated SCC	01
Verrucous carcinoma	02
Adenoid cystic carcinoma	01

Two verrucous carcinomas, one present in buccal vestibule and other in upper and lower lip showed well-oriented, bulbous rete-ridges with pushing borders (Fig 4).

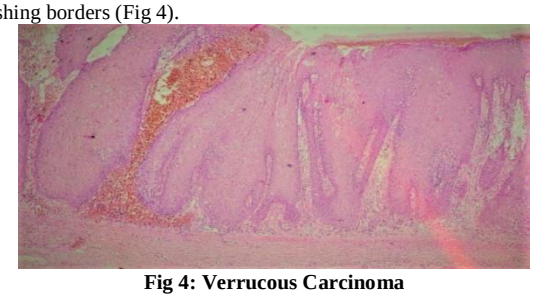

Fig 4: Verrucous Carcinoma

One adenoid cystic carcinoma which presented as an oral mass was also seen which showed a tubular and cribriform pattern (Fig 5).

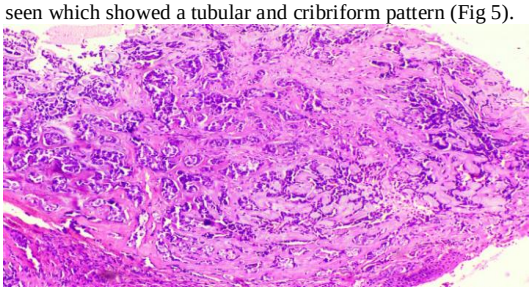

Fig 5: Adenoid cystic carcinoma

Certain benign lesions [Table 6] encountered in the present study were cavernous hemangioma (lip), myxofibroma (maxilla), squamous papilloma (buccal mucosa), pleomorphic adenoma (submandibular gland), ameloblastoma(mandible) and fibroepithelioma (hard palate). The Squamous papilloma showed papillary projections with fibrovascular core (Fig 6).

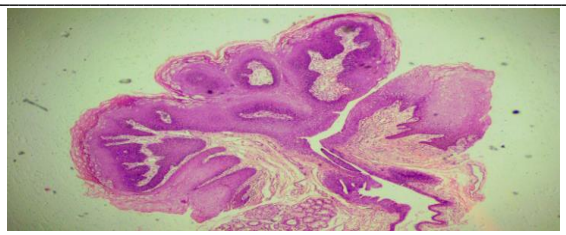

Fig 6: Squamous Papilloma

Table 6: Benign lesions

Benign lesions	Total-08
Cavernous hemangioma	02
Myxofibroma	01
Squamous papilloma	01
Pleomorphic adenoma	02
Ameloblastoma	01
Fibroepithelioma	01

Discussion

Of the 91 segregated patients with oral and oropharyngeal premalignant and malignant lesions, 68 (74.7%) were males and 23(25.2%) were females. The male to female ratio in our study was 2.9:1 which is similar to study by Mehrotra et al and Iype et al i.e 2.4:1 and 2.3:1 respectively. Akin to our observations, majority of cases were reported by Mehrotra et al in 50-59 year age group with maximum cases between 40-60yrs similar to that reported by Saraswathi et al.Oral cancers are more common beyond 5th decade of life but nowadays we are seeing a rising trend in people of younger age group which may be due to higher intake of smokeless tobacco. This is also reflected in our study in which maximum cases were reported in 50-59 yrs of age followed by those in 40-49 yrs and 30-39 years age group.

In the present study, on the basis of site of involvement, buccal mucosa was the most common site in 44 patients (48.35%) followed by 28 patients with tongue lesions (30.7%). This was in concordance with study by Naga et al[1] who reported 47.7% cases from buccal mucosa and 27.6% from tongue. Bhurgri et al[11] in her report suggested buccal mucosa as most frequent site (55.9%) followed by tongue (28.4%). Other sites were soft palate, hard palate, cheek, lip, minor salivary glands, tonsil etc. Out of 36 premalignant lesions (24.48%), maximum 17 lesions were leukoplakic i.e 47.22% of all premalignant cases, followed by 11 lesions of lichenoid dysplasias (30.55%), 4 oral Submucosal fibrosis cases and 4 dysplastic lesions. Mehrotra et al also reported 29.8% of premalignant lesions in their study similar to our study. In the present study leukoplakia was 11.56% out of all oral lesions. Priya et al also reported leukoplakia as the most common premalignant lesion (18.75%). Our study reported 47 (31.9%) cases of malignancy similar to study by Naga et al[1] who reported 29.15% malignancies in oral region. Further, Well-differentiated Squamous cell carcinomas were 30(63.8%), moderately differentiated were 13(27.6%) and poorly differentiated squamous cell carcinoma was 1(2.1%). Naga et al[1] also reported 62% of well differentiated squamous cell carcinomas. Other malignancies reported in our study were 2 cases of Verrucous carcinoma and one case of Adenoid cystic carcinoma.Studies in India have indicated role of tobacco, smoking and smokeless tobacco, arecanut products as the major culprit in causing premalignant as well as malignant oral and oropharyngeal lesions[13]. Studies have also reflected role of poor oral hygiene and lower socio-economic status in most patients[1].Early diagnosed patients can be treated by surgery and chemotherapy and radiation which may prolong the survival rate[1].

Conclusion

Histopathological assessment of various premalignant and malignant lesions of oral cavity and oropharynx is essential for the diagnosis as well as classification of these lesions which may help in preventing malignant transformation and proper treatment of patients. In view of an increasing incidence of oral premalignant and malignant lesions in and around the hospital premises situated in the Indo-Gangetic Plain, where the study was carried out, there is a great need of awareness programs and community-based interventions to be conducted in order to educate the general public to refrain from using smokeless tobacco products as well as smoking. This would help promote and implement prevention strategies and reduce the morbidity and mortality rates.

Conflict of Interest: Nil Source of support: Nil

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