Clinicohistopathological profile of malignant and pre-malignant lesions of oral cavity

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ABSTRACT

The present study on oral cavity lesions was a descriptive, analytical and observational study consists of total 173 cases, amongst which 38 cases were of pre-malignant lesions while 135 were of malignant lesions. A male preponderance was noted in both pre-malignant and malignant lesions. A maximum number of cases in pre-malignant lesions was from 50-59 years of age group while in case of malignant lesions a bit early age of presentation was noted, i.e. 40-49 years. Most of them were habituated to tobacco—the most common site of involvement for both, oral pre-cancer and cancer was the oral cavity. Leukoplakia was precancerous lesion (55.26%). The variant in the study was verrucous carcinoma. The predominant piece of the oral squamous cell carcinoma was a lot of isolated types. The current review was essentially indistinguishable with various examinations. The study noted a relatively late age of presentation of pre-malignant lesions. This delay could be explained by multiple factors like ignorance and lacking in medical facilities. In this scenario, many patients progress to full-blown malignancy. This examination reflects that there is a tendency to expose issues and instruct individuals concerning unfavourable impacts of liquor and tobacco usage, the significance of dental tidiness, oral self-appraisal and the openness of preventive services organizations.

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INTRODUCTION

Oral cancer in some territory, particularly in the Indian subcontinent is among the perpetual malignancy. This carcinoma speaks to substantially 40% of the significant number of tumours in the Indian subcontinent (Mehrotra et al., 2006). Over 90% of these tumours are squamous cell carcinoma which rises out of the oral mucosal covering (Neville and Day, 2002). Many oral carcinomas arise within regions that previously had a pre-malignant lesion. The most common pre-malignant lesion seen in the oral cavity is leukoplakia with associated dysplasia (Ramesh et al., 1999).

Notwithstanding readied transparency of the oral despondency to organize evaluation these malignancies regardless of everything are much of the time undetected until a late stage, and the perseverance rate for oral infection has remained fundamentally unaltered over ongoing decades (Neville and Day, 2002). The current gold standard for the diagnosis is the histopathological assessment of a tissue biopsy of the suspicious lesion. A palatable incisional biopsy taken from the sore can give over 98% expressive accuracy in regards to whether the sore is risky or not when routine fanatical strategies are
used (Poh et al., 2008).

The purpose of the present study is too early detection of pre-malignant lesions, classify oral malignancies as per WHO histopathological tumour types and correlate them clinically. It will be helpful for further management of the patient and better care. An effort has also been made to compare the retrospective data with the prospective findings.

MATERIALS AND METHODS

After due approval from the Ethical committee of KIMSDU, Karad material for the present study consisted of surgical biopsies and resection specimen of the oral cavity were received in the Department. Details about the personal habits like smoking, consumption of alcohol, tobacco chewing, presenting complaints, site of the lesion and histopathological type and differentiation were recorded and analyzed. All the patients were graded according to Broder’s system. Broder’s system is based on differentiation of cells.

Except for lesions from the oropharyngeal and tonsillar region; lesions from buccal mucosa, oral tongue floor of the mouth, gingiva, retromolar trigone, hard palate were included in this study. The biopsies were measured, and the site of growth was noted. Dimensions of the specimen as a whole were measured. The location and extent of the tumour and its gross appearance such as ulcerative, proliferative and ulcer-proliferative were noted. All surgical margins of resection were painted with India ink or mercurochrome. For retrospective study data was procured from the medical record department. For the retrospective study slides and blocks were identified and wherever necessary blocks were recut, and further study was done. Representative sections were taken from the tumour proper, all surgical margins, all lymph nodes, salivary gland, bone, surrounding soft tissue (including blood vessel).

Tissue bits were fixed in 10% formalin and processed by routine paraffin tissue processing method. 4-5\(\mu\)m thick sections were cut on a microtome and stained by Hemotoxylin & Eosin (H&E) stain and studied under a microscope. Histopathological diagnosis regarding type and differentiation was made.

RESULTS AND DISCUSSION

The higher pace of oral malignancies in folks may be a result of the extended pace of tobacco and alcohol use. What’s more, tobacco is eaten up by people in both smoking and gnawing structure; while nearby Indian females generally speaking detest smoking. In the present study total of 173 cases were studied throughout five years from May 2010 to April 2015. Out of which there were 38 cases of oral pre-cancer lesions and 135 cases of oral cancer lesions. The detailed clinical protocol was followed, and appropriate information was recorded, which include age, sex, habits and tumour location etc. Gross and microscopic features were studied thoroughly.

Age

Pre-malignant lesions

The age range in our study was 15 years to 85. In our study, the maximum number of patients, 12 out of 38 (31.57%) were from the 50-59 age group. The mean time of presentation was 54.5 years. A study done by Mehrotra et al. (2006) exhibited that the best number of patients were from the 6th decade. The present examination was in concordance with Mehrotra et al. (2006); Liu et al. (2010) reported the highest incidence of pre-malignant lesions in 5th decade, i.e. one decade earlier compared to present study and other study quoted above. The present study showed exhibited that the best number of patients were from the 6th decade. Present examination

Malignant lesions

The most extraordinary number of patients were from 40-49 years of age gathering, 43/135 (31.85%), followed by 60-69 years, 30/135 (22.22%). The mean age of presentation was 44.5 years. A study done by Mehrotra et al. (2006) showed a maximum number of patients were from the 6th decade. Another study done by Misra et al. (2009); Dhar et al. (2000) showed the same result. The present study showed the maximum incidence in the 5th decade. This could be because the consumption of tobacco in any form is widely spread from an early age and continued for a longer duration.

Sex distribution

Pre-malignant lesions

A study done by Dietrich et al. (2004) showed a maximum number of patients were male (69.2%), and the female percentage was 30.8%. Another study done by Mishra et al. (2005) showed a maximum number of patients were male (53.76%), and the female percentage was (46.24%). The current examination was in concordance with the above assessments showing the male rate was 65.78% and the female percentage was 34.21%.

Malignant lesion

In the current assessment out of 135 risky cases, 98 cases were seen in males (72.59%), and 37 were
Table 1: Histopathological pattern of premalignant lesions

<table>
<thead>
<tr>
<th>Sr.No.</th>
<th>Grades of epithelial</th>
<th>Number of Cases</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Mild</td>
<td>09</td>
<td>47.36</td>
</tr>
<tr>
<td>2</td>
<td>Moderate</td>
<td>03</td>
<td>15.78</td>
</tr>
<tr>
<td>3</td>
<td>Severe</td>
<td>07</td>
<td>36.86</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>19</td>
<td>100</td>
</tr>
</tbody>
</table>

Table 2: Intra-oral site distribution of oral pre-cancer and oral cancer cases

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Site</th>
<th>Pre-cancer cases</th>
<th>Oral cancer cases</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Number of Cases</td>
<td>Percentage</td>
<td>Number of Cases</td>
</tr>
<tr>
<td>1</td>
<td>Buccal Mucosa</td>
<td>21</td>
<td>55.26</td>
</tr>
<tr>
<td>2</td>
<td>Oral Tongue</td>
<td>10</td>
<td>26.31</td>
</tr>
<tr>
<td>3</td>
<td>Gingiva</td>
<td>03</td>
<td>7.90</td>
</tr>
<tr>
<td></td>
<td>Lip</td>
<td>00</td>
<td>00</td>
</tr>
<tr>
<td>4</td>
<td>Alveolus</td>
<td>03</td>
<td>7.90</td>
</tr>
<tr>
<td>5</td>
<td>Retromolartrigone</td>
<td>01</td>
<td>2.63</td>
</tr>
<tr>
<td>6</td>
<td>Hard palate</td>
<td>00</td>
<td>00</td>
</tr>
<tr>
<td>7</td>
<td>Floor of the mouth</td>
<td></td>
<td>01</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>38</td>
<td>100</td>
</tr>
</tbody>
</table>

seen in females (27.41%). A study done by Durazzo et al. (2005) showed that the majority of cases were seen in males (68.2%) and 31.8% were in females. Another study by Khandekar et al. (2006) showed 61.3% of cases in males and 38.7% in females, while a study done by Dias and Almeida (2007) showed 80% cases in males while 20% cases in females. The current assessment was comparable with studies 71.85% of patients were male, and 28.14% of patients were female. A male preponderance was seen in the above studies. This was because the tobacco is consumed more by men as compared to women, and the same studies conducted in other parts showed the same results. However, gender is not a risk factor for oral malignancies. Tobacco addiction in males includes both chewing and smoking while in the Indian scenario, generally females are not very much indulged in smoking.

Habits

Tobacco gnawing has ascended as a more grounded chance factor of oral carcinoma than smoking since there is a prompt presentation of tobacco gnawing on the mucosa for a more extended period. In contrast, smoking has more contact with pharynx, larynx and lungs. In our examination of hurtful wounds out of 135 cases, 123 (91.11%) patients were habituated to tobacco. In an assessment done by Khandekar et al. (2006), 71.3% of patients were habituated to tobacco. In another study done by Durazzo et al. (2005) shown 80.8% of patients were habituated to tobacco. Another assessment done by Iype et al. (2001) exhibited 56.4% were habituated to tobacco gnawing or alcohol. Again, tobacco-chewing or alcohol usage was noticed lion’s offer in male patients as examine to female accomplices. Site of the lesion

Pre-malignant lesion

In the current assessment among pre-malignant injury buccal mucosa was the most typical site included. Oral mucosa was locked in with 21 out of full scale 38 cases (55.26%) trailed by the tongue which related with 10 out of 38 cases (26.31%). A study done by Lee J Jet in 2006 showed that the buccal mucosa was the most frequent site drawn in with 65.7% of cases. Another examination done by Misra et al. (2009); Mishra et al. (2005) demonstrated most ordinary site was buccal mucosa in 55% and 52.26% of cases independently. The high repeat of the relationship of buccal mucosa, found in the Indian examination and the current assessment can be attributed to tobacco affinities. Table 2.

Malignant lesion

Buccal mucosa was the most familiar site involved in the present study, 62 out of 135 cases (45.92%), followed by the tongue, i.e. 32 out of 135 cases (23.71%). A study done by Ahluwalia et al. (2001) showed buccal mucosa was the commonest site in 55.26% of cases while a study was done by Sankara-
narayanan et al. (2005) also showed the most common site was buccal mucosa in 50.4% of cases. A study done by Bhattacharjee et al. (2006) explained 32.67% of cases involved tongue. The present study was in concordance with the above studies, which described 46.66% of cases in buccal mucosa as the most common location. It is observed and learnt from the various pieces of literature that the anterior part of the oral cavity (buccal mucosa, anterior 2/3rd of tongue, lip, alveolus and base of tongue) were more frequently involved due to the prolonged exposure of carcinogens. Table 2.

Histopathological spectrum

Pre-malignant lesions

In the present study amongst 38 cases of pre-malignant cases, 21 cases were of leukoplakia, and 1 case was of erythroplakia. There were 5 cases of carcinoma in situ. Amongst the cases of leukoplakia dysplasia of varying degree were noted. They were showing epithelial thickening, cellular maturation of varying degree but without any atypia. Nine cases show the features of mild dysplasia (47.36%), dysplastic cells occupying the lower one-third of the epithelium, 3 cases showed moderate dysplasia (15.78%), dysplastic cells occupying middle one-third of the epithelium with abnormal maturation and 7 cases showed severe dysplasia (36.86%) where dysplastic cells occupied the upper third of the epithelium, showed abnormal keratinization, increased nuclear-cytoplasmic ratio and prominent nucleoli. Lee et al. (2006) analyzed 1046 patients with oral leukoplakia of which 408 cases were only epithelial hyperplasia. Mild dysplasia was noted in 200 cases (19.12%), moderate in 234 cases (22.37%) and severe in 43 cases (4.11%). Allegra et al. (2009) in his study revealed that 15/45 cases (33.4%) were benign and 30/45 cases were precancerous and cancerous lesions. Eight out of the latter showed mild dysplasia (26.6%), 5 cases showed moderate dysplasia (16.6%), and 6 cases showed severe dysplasia (29.0%). Table 1.

Malignant lesions

In the current assessment out of 135 cases 122 cases were of customary squamous cell carcinoma (90.37%), 8 cases were of verrucous carcinoma (5.94%), one example of little scope medullary squamous cell carcinoma (0.74%), 1 case all of pivot cell variety of squamous cell carcinoma, lentigomalignamelanoma, mucoepidermoid carcinoma and polymorphous below average adenocarcinoma. Standard squamous cell carcinoma shows various assessments of partition. The tumours were isolated reliant on the Broder’s system. An examination done by Bhattacharjee et al. (2006) exhibited that the most generally perceived risky oral injury was squamous cell carcinoma (85.12%). Another assessment done by Dias and Almeida (2007); Branzetti et al. (2008) demonstrated a close to resulting as squamous cell carcinoma was the most extensively observed perilous oral injury in 93.9% and 91% patients self-ruling. Present assessment is indistinguishable with the above examinations exhibited squamous cell carcinoma as the most broadly perceived oral undermining injury in 90.37% of cases. All the examples of verrucous carcinoma showed all-around isolated squamous epithelium. The down epithelial advancement was wide having inhumane rete pegs with pushing edges—the lamina propria demonstrating the lymphoplasmacytic attack.

Differentiation

In the current assessment, 122 cases were oral squamous cell carcinoma, out of which 67 were a lot of isolated (54.91%), 49 cases were sensibly isolated (40.18%), and 6 cases were of incapably differentiated (4.91%). All around isolated squamous cell carcinoma exhibited sheets and homes of tumour cells with large hyperchromatic centres. Particular cell keratinization with all-around confined keratin pearls dependably saw in all the cases and are the apparent segment of particularly isolated squamous cell carcinoma. The case of assault was dominantly pushing type. The stromal lymphoplasmacytic intrusion was also noted. Moderately isolated squamous cell carcinoma showed nuclear pleomorphism with decrease solitary cell keratinization. The case of assault was fundamental to pushing type. Inadequately isolated squamous cell carcinoma showed commonly adolescent cells with mitosis and nonattendance of individual cell keratinization. There is a nonattendance of cohesiveness between tumour cells. Case of interruption was commonly in single cells, ropes and islands. An examination done by lype et al. (2001) exhibited that the occasions of particularly isolated carcinoma were generally extraordinary (52.6%). Another assessment done by Patel and Pandya (2004) demonstrated 60.12% cases were of an all-around isolated kind. Ahluwalia et al. (2001) furthermore showed the most unusual cases (65.97%) was of an all-around solitary sort. The present assessment was comparative with the above examinations, and most outrageous cases were of all-around isolated squamous cell carcinoma (52.84%). Regardless, a study done by Dragmoire et al., 2010 showed that the most outrageous number of cases were of all-around isolated squamous cell carcinoma type (37.6%). Yet, moreover, there was an equal rate in the cases of insufficiently isolated squamous cell carcinomas (35%).
CONCLUSION

In the present study incidence of pre-malignant and unsafe bruises of the oral cavity is increasing. The recurrence of oral squamous cell carcinoma remains high due to the consumption of tobacco and smoking addiction in this region. A quick clinical workup with histopathologic examination can help in diagnosing the majority of the oral melanohy pre-malignant wounds and decreasing the morbidity and mortality after malignant transformation. The present study of 173 oral cavity lesions consists predominantly of malignant lesions with only a handful presenting as pre-malignant lesions. The study noted a relatively late age of presentation of pre-malignant lesions. This delay could be explained by various factors like ignorance and lacking in medical facilities. In this scenario, many patients progress to full-blown malignancy. This examination reflects that there is a tendency to expose issues and train people concerning terrible effects of alcohol and tobacco use, the criticalness of dental tidiness, oral self-assessment and the responsiveness of preventive human administrations affiliations.

Source of funding
Self.

Conflict of interest
The authors declare that they have no conflict of interest for this study.

REFERENCES


