

A Study of Histopathological Spectrum of Oral Lesions in Tertiary Care Hospital, Raigarh, Chhattisgarh

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Received: 04-11-2022 / Revised: 17-12-2022 / Accepted: 27-12-2022

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Conflict of interest: Nil

Abstract

Background: Lesions of the oral cavity are generally asymptomatic. Different sites of oral cavity show predominance for different types of lesions. Carcinoma of oral cavity is the most common type of cancer among males in India. In our study benign lesions were more common than malignant.

Material and Methods: A four year retrospective study conducted from August 2017 to September 2021. The study included total 110 number of cases. All the oral cavity specimens received in the Department of Pathology, LSLAMMC and Hospital, Raigarh, C.G, during the study period was included. Archival records for retrospective cases were procured and demographic details were noted and analysed.

Result: 110 cases of oral lesions during the study period were included. Oral lesions were predominant among males having M:F of 1.3:1. Non neoplastic, benign and malignant cases were most common in male with 23(20.9%), 21(19%) and 19(17.2%) cases each. Most common age group affected in non-neoplastic lesion were between 31-40 years in 9(8.1%). In benign lesion most common age group is 21-30 years in 12(10.9%) cases and in malignant lesion 31-40 years of age group is most common in 10(9.0%) cases. The most common site for oral lesions was buccal mucosa in 41(37.2%) cases and benign lesions of 40(36.3%) cases with the predominance of hemangioma in 14(12.8%) cases. The malignant oral lesions were 37(33.6%) cases with predominance of squamous cell carcinoma in 34(30%) cases.

Conclusion: Usually most of the oral lesions are asymptomatic. Therefore it is necessary to examine the patient properly and differentiate the premalignant and malignant lesions for the proper management of the patient. So, there is importance of correlation between clinical and histopathological study.

Keywords: Oral Lesions, Buccal Mucosa, Tongue, Squamous Cell Carcinoma.

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Introduction

Lesions of the oral cavity are generally asymptomatic. Most of the oral cavity lesions are benign with the commonest being hemangioma, fibroma, mucocele etc [1]. Different sites of oral cavity show predominance for different types of lesions [2]. Malignant lesions are common in sites such as buccal mucosa and mucoceles are more common in lower lip whereas upper lip shows minor salivary gland tumors most commonly [3]. Knowledge of site for different lesions will be helpful in knowing the factors responsible for that particular lesion [4].

Carcinoma of oral cavity is the most common type of cancer among males in India. It represents 4% of the total body cancer and 2% of all the cancer in males and females [5]. According to the GATS study 2016-2017 factsheet, Chhattisgarh state is least common in the prevalence of current tobacco smoking among states/UTs and 9th rank in the prevalence of tobacco usage [6].

The association between tobacco chewing in the form of gutka, betel quid and smoking with pre-malignant and malignant oral lesions has already been proved [7]. Early stages of malignancy may mimic benign lesions, which leads to improper treatment and thus increase the mortality of the patients. Therefore, histopathology is considered as the gold standard technique for the accurate diagnosis and the proper management of the patients.

Materials and Methods

This was a 4 year retrospective study conducted from August 2017 to September 2021. All the oral cavity specimens received in the Department of Pathology, LSLAMMC and Hospital, Raigarh, C.G, during the study period were included. The study included all the patients with oral lesions admitted in the dental, ENT and/or surgery ward and OPD of the Hospital.

Archival records for retrospective cases were procured and relevant data such as age, sex, and site of the lesion was noted.

The sections were restained with hematoxylin and eosin technique (H and E) whenever required. We excluded the cases of repeat biopsy after therapy for residual lesion, recurrent lesions and poorly processed and prepared slides. Data collected was analyzed.

Results

110 cases of oral lesions during the study period were included in this study. Table 1 showing oral lesions were predominant among males comprising of 63(57.2%) cases with 47(42.8%) female cases having M:F of 1.3:1. Non-neoplastic, benign and malignant cases were most common in male with 23(20.9%), 21(19%) and 19(17.2%) cases each. Table 2 showing most common age group affected in non-neoplastic lesion is between 31-40 years in 9(8.1%) cases followed by 21-30 years of age in 8(7.2%) cases. In benign lesion most common age group is 21-30 years in 12(10.9%) cases and in malignant lesion 31-40 years of age group is most common in 10(9.0%) cases. Table 3 showing the most common site of oral lesions was buccal mucosa in 41(37.2%) cases, followed by tongue in 21(19.1%) cases, in mandible 15(13.6%) cases, in lip 15(13.6%) cases and in tonsil 8(7.2%) cases, in maxilla 4(3.7%) cases, in gingiva 2(1.9%) cases and in alveolous, palate, oropharynx and teeth 1(0.9%) case each. Table 4 showing most common oral lesions is benign of 40(36.3%) cases with the predominance of hemangioma of 14(12.8%) cases. Followed by malignant 37(33.6%) cases with predominance of squamous cell carcinoma 34(30%) cases and non-neoplastic of 33(30%) cases with actinomycosis of 8(7.2%) cases. Table 5 shows most common malignant oral lesion

was Squamous cell carcinoma in 34(30%) cases and most common age group was 31-60 . Table 6 shows malignant lesion(SCC)

predominant in female of 18(16.3%) cases with M:F of 0.8:1.

Tables 1: Gender distribution

Gender	Non neoplastic	Benign	Malignant	Total
Male	23(20.9%)	21(19.0%)	19(17.2%)	63(57.2%)
Female	10(9.1%)	19(17.2%)	18(16.3%)	47(42.8%)
Total				110

Table 2 : Age distribution of oral lesion

Age	Non-Neoplastic	Benign	Malignant	Total
<10	1(0.9%)	6(5.4%)	0	7(6.3%)
11-20	2(1.9%)	6(5.4%)	1(0.9%)	9(8.1%)
21-30	8(7.2%)	12(10.9%)	2(1.9%)	22(20%)
31-40	9(8.1%)	4(3.6%)	10(9.0%)	23(20.9%)
41-50	6(5.4%)	3(2.8%)	9(8.1%)	18(16.4%)
51-60	2(1.9%)	4(3.6%)	9(8.1%)	15(13.7%)
61-70	5(4.6%)	2(1.9%)	4(3.6%)	11(10%)
>70	0(0%)	3(2.8%)	2(1.9%)	5(4.6%)
Total				110(100%)

Table 3: Regional distribution of oral lesions

Site	Benign	Malignant	Non-Neoplastic	Total
Buccal Mucosa	10(9.1%)	18(16.3%)	13(11.9%)	41(37.2%)
Tongue	11(10%)	7(6.3%)	3(2.8%)	21(19.1%)
Mandible	5(4.6%)	6(5.4%)	4(3.7%)	15(13.6%)
Lip	9(8.1%)	5(4.6%)	1(0.9%)	15(13.6%)
Tonsil	0	0	8(7.2%)	8(7.2%)
Alveolus	0	1(0.9%)	0	1(0.9%)
Maxilla	3(2.8%)	0	1(0.9%)	4(3.7%)
Palate	0	0	1(0.9%)	1(0.9%)
Oropharynx	0	0	1(0.9%)	1(0.9%)
Teeth	1(0.9%)	0	0	1(0.9%)
Gingiva	1(0.9%)	0	1(0.9%)	2(1.9%)
Total	40	37	33	110

Table 4: Overall distribution of oral cavity lesions

Types of Lesion	
Non-Neoplastic: 33(30%)	
Non-Specific Inflammation	6(5.4%)
Actinomycosis	8(7.2%)
Rhinosporidiosis	2(1.9%)
Hyperplasia	3(2.8%)
Aspergillus	1(0.9%)
Epulis	1(0.9%)
Inflammatory Fibrosis	1(0.9%)
Granulomatous Lesion	1(0.9%)
Ossifying Fibrosis	1(0.9%)
Vesicobullous Reaction Pattern	1(0.9%)

Chronic Tonsillitis With Epidermal Inclusion Cyst	1(0.9%)
Chronic Tonsillitis With Actinomycosis	1(0.9%)
BENIGN: 40(36.3%)	
Haemangioma	14(12.8%)
Fibroma	7(6.3%)
Dysplasia	6(5.4%)
Mucocele	5(4.5%)
Squamous Papilloma	2(1.9%)
Benign Cystic Lesion	1(0.9%)
Dentigerous Cyst	1(0.9%)
Neuroma	1(0.9%)
Neurofibroma	1(0.9%)
Adenomatoid Odontogenic Tumour	1(0.9%)
Granular Cell Tumour	1(0.9%)
MALIGNANT: 37(33.6%)	
Squamous Cell Carcinoma	34(30%)
Verrucous Carcinoma	1(0.9%)
Adenoid Cystic Carcinoma	1(0.9%)
Round Blue Cell Tumour	1(0.9%)

Table 5: Age correlation of malignant lesion

Type	<10	11-20	21-30	31-40	41-50	51-60	61-70	>70	TOTAL
squamous cell carcinoma	0	0	2(1.9%)	9(8.1%)	9(8.1%)	9(8.1%)	4(3.6%)	1(0.9%)	34(30%)
Verrucous carcinoma	0	0	0	1(0.9%)	0	0	0	0	1(0.9%)
Adenoid cystic carcinoma	0	0	0	0	0	0	0	1(0.9%)	1(0.9%)
Round blue cell tumour	0	1(0.9%)	0	0	0	0	0	0	1(0.9%)
Total		1(0.9%)	2(1.9%)	10(9.0%)	9(8.1%)	9(8.1%)	4(3.6%)	2(1.9%)	37(33.6%)

Table 6: Male/ female distribution of malignant lesion

Histopathological type	Male	Female	Total
squamous cell carcinoma	16(14.54%)	18(16.3%)	34(30%)
Verrucous carcinoma	1(0.9%)	0	1(0.9%)
Adenoid cystic carcinoma	1(0.9%)	0	1(0.9%)
Round blue cell tumour	1(0.9%)	0	1(0.9%)
Total	19(17.2%)	18(16.3%)	37(33.6%)

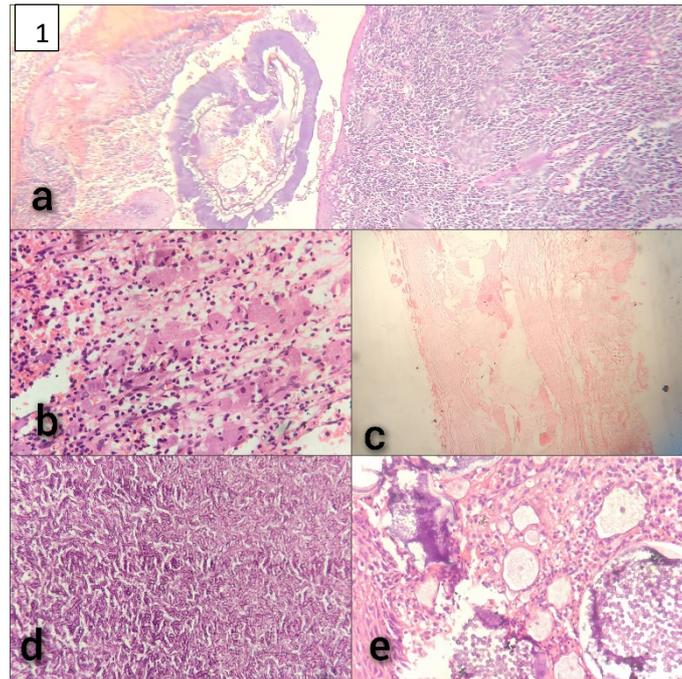


Figure 1: Photomicrograph Of inflammatory lesions(H&E,400X)

- a) Tonsillitis With Actinomycosis. b) Congenital Granular Cell Epulis showing large polygonal cells with eosinophilic granular cytoplasm and small central nuclei. c) Dentigerous Cyst showing loose band connective tissue stroma d) Aspergillus showing hyphae e) Rhinosporidiosis having sporangia.**

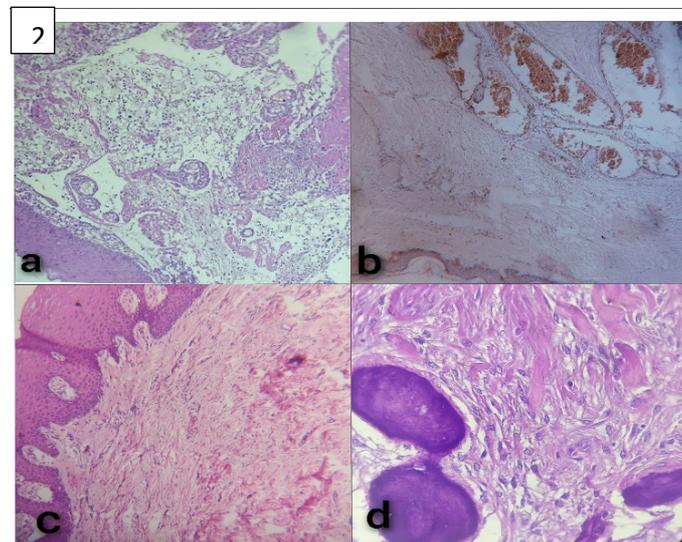


Figure 2: Photomicrograph of Benign (H&E,400X)

- a) mucocele- showing pseudocyst with epithelioid macrophages and inflammatory cells, b) hemangioma cavernous type showing lobules of capillary-sized vascular channels lined by a single layer of endothelial cells, c) fibroma- having a hyperkeratotic surface with mass composed of fibrous connective tissue and collagen bundles interspersed with fibroblasts, d) Ossifying fibroma-showing stromal fibroblastic cells and cementum calcification.**

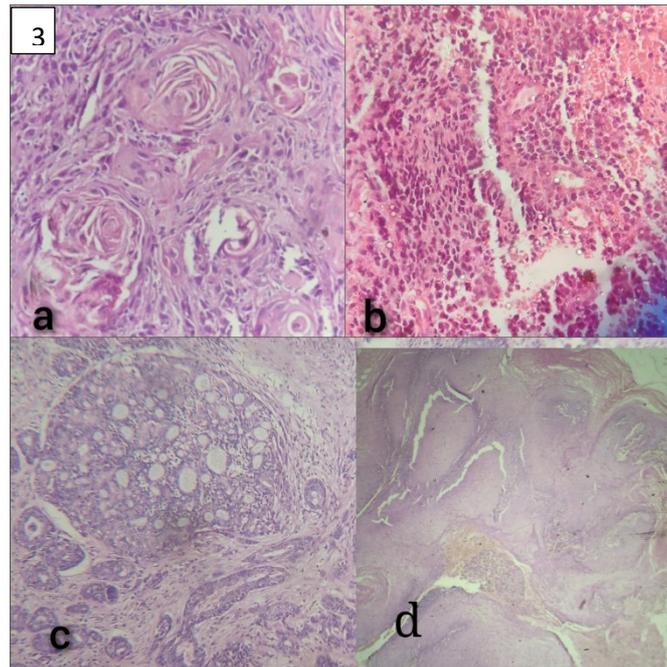


Figure 3: Photomicrograph of malignant oral lesions (H&E,400X)

- a) Squamous cell carcinoma with keratinisation, b) Round blue cell tumour- composed of monomorphic round blue tumour cells, c) Adenoid cystic carcinoma- showing cribriform pattern, d) Verrucous carcinoma**

Discussion

In this retrospective study, total 110 cases received in our institution are included to know the distribution of oral cavity lesions among the specimens.

In the present study the age range was 3days to 77years. Paediatric patients presented with only benign and non-neoplastic lesions like epulis, granular cell tumour, mucocele, hemangioma, neuroma, adenomatoid odontogenic tumour and rhinosporidiosis. The youngest case of malignancy was a 12 days old child diagnosed as round blue cell tumour, whereas oldest case was a 77 years old diagnosed as adenoid cyst carcinoma.

Malignant lesions were found predominantly in males than females in the present study which is similar to the study of pudasaini, Brar R et al [8] and Agrawal et al [5]. In our study, benign and nonneoplastic lesions were 2/3rd of total case.

Malignant lesions are more commonly seen in more than 30 years of age and benign cases are more common in younger age groups. Most common site for the development of oral cavity lesion was buccal mucosa which is similar to the study of Modi et al [9], Mehrotra et al [10], mehta et al [11] and wahi et al [12]. This may be due to habit of chewing tobacco, pan and gutka. The most common site for malignant lesion was buccal mucosa followed by tongue, similarly also reported in study of kosam et al [13].

Among benign lesion most common were hemangioma which is correlated with the study of kosam et al [13] and Gupta et al [1]. 30% cases were Squamous cell carcinoma which were most common cases under malignant category found in buccal mucosa which is similar findings with the study of kosam et al[13]. Other variety of malignant lesions we found in our study were Verrucous carcinoma, adenoid cystic carcinoma and round blue cell tumour.

The concept of two-step process of cancer development in the oral mucosa i.e. the initial presence of premalignant or precancerous lesion subsequently developing into cancer, is well established. They take varying length of time to convert into cancer, so it is very important to early diagnosis of the cases which improves the prognosis. Oral cavity is easily accessible for the examination, various research techniques were available which improves sensitivity and specificity for the deduction of oral malignancy. We have to motivate the general public about the oral hygiene, prevent addictions (tobacco, pan etc) and visit early if any suspicious oral lesions are present [14].

For early screening of Oral lesions, there are less invasive and cost effective tests such as oral brush, touch imprint, scrap cytology which are painless and outpatient department based procedures available. [15] But still, biopsy is the gold standard technique for diagnosing the cases. We can add on some advanced techniques like tumour markers, tissue fluorescence and molecular diagnostic techniques [5].

Conclusion

Usually most of the oral lesions are asymptomatic. Therefore it is necessary to examine the patient properly and differentiate the premalignant and malignant lesions for the proper management of the patient. In our study benign lesion were more common in oral cavity affecting the young patients between the age group 21 to 30 years of age and in males. Malignant lesions were commonly found in the middle age group patients. So, it is therefore important to correlate the various clinical and histopathological factors in order to diagnose the various premalignant lesions at an early stage and reduce the patients mortality and morbidity.

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