



STUDY OF HISTOPATHOLOGICAL SPECTRUM OF ORAL LESIONS IN TERTIARY CARE HOSPITAL, CIMS (5 YEARS RETROSPECTIVE)

Pathology

Dr. Shahnaz Bano	Assistant Professor, Department of Pathology, Chhattisgarh Institute of Medical Sciences, Bilaspur (Chhattisgarh).
Dr. Rashmi Gupta	Associate Professor, Department of Pathology, Chhattisgarh Institute of Medical Sciences, Bilaspur (Chhattisgarh).
Dr. Jyoti Porte	PG Demonstrator, Department of Pathology, Chhattisgarh Institute of Medical Sciences, Bilaspur (Chhattisgarh).
Dr. B. P. Singh*	Director Professor and Head of Department, Department of Pathology, Chhattisgarh Institute of Medical Sciences, Bilaspur (Chhattisgarh) *Corresponding Author

ABSTRACT

Background: Oral cavity is a common site for non-neoplastic and neoplastic lesions, most are asymptomatic, but lesion like squamous cell carcinoma leads to cosmetic disfigurement and mental trauma to the patient. Early diagnosis of premalignant and malignant lesion improves the accuracy of diagnosis and early management.

Aim: To study Histopathological Spectrum of Oral cavity Lesions on the basis of type, age, sex and site distribution.

Material and methods: A retrospective study was carried out in a pathology department of Chhattisgarh Institute of Medical Sciences (CIMS), Bilaspur, (C.G.) for oral lesion during the time period of Jan 2016 to Dec 2020. Study includes total 275 cases, 650 blocks and 720 stained histopathology slides (H and E stained). Data like age, sex, site of lesion was collected from histopathological register.

Result: Total 275 cases of oral cavity lesions were studied in which were 188 (68.36%) male and 87 (31.64%) were female. Included age group from 6 years to 85 years, out of 275 cases 162 (58.91%) Malignant lesions, 64 (23.27%) non-neoplastic lesions, 31 (11.27%) Benign lesions, 18 (06.55%) premalignant lesions. Buccal mucosa was most common site for oral lesion followed by tongue and lips. Most common lesion was squamous cell carcinoma followed by pyogenic granuloma and inflammatory lesions.

Conclusion: In our study squamous cell carcinoma is most common malignant lesion of oral cavity. Clinical diagnosis is not enough for determination of the nature of lesion. Histopathological evaluation is important tool for diagnosis of the lesion in premalignant and early stages so we can prevent mental and psychological trauma to the patient.

KEYWORDS

squamous cell ca, neoplastic, histopathology.

INTRODUCTION

Oral cavity is a common site for non-neoplastic and neoplastic lesions, most are asymptomatic, but lesion like squamous cell carcinoma leads to cosmetic disfigurement and mental trauma to the patient. Early diagnosis of premalignant and malignant lesion improves the accuracy of diagnosis and early management. Till date Histopathology is gold standard. Predisposing factors like chewing tobacco, smoking and consumption of alcohol have become common social habits in India.¹ Other factors which can develop oral malignancy such as ill-fitting dentures, sharp broken teeth which results in constant irritation of oral mucosa.^{2,3}

MATERIAL AND METHODS

A retrospective study was carried out in a pathology department of Chhattisgarh Institute of Medical Sciences (CIMS), Bilaspur, (C.G.) for oral lesion during the time period of Jan 2016 to Dec 2020. Study includes total 275 cases, 650 blocks and 720 stained histopathology slides (H and E stained). Data like age, sex, site of lesion was collected from histopathological register. The study protocol was approved by the Institutional Ethical Committee (IEC) and Scientific Research Review Committee (SRRC).

RESULT

Total 275 cases of oral cavity lesions were studied in which were 188 (68.36%) male and 87 (31.64%) were female. Included age group from 6 years to 85 years, out of 275 cases 162 (58.91%) Malignant lesions, 64 (23.27%) non-neoplastic lesions, 31 (11.27%) Benign lesions, 18 (06.55%) premalignant lesions. Buccal mucosa was most common site for oral lesion followed by tongue and lips. Most common lesion was squamous cell carcinoma followed by pyogenic granuloma and inflammatory lesions.

DISCUSSION

Table I- Gender Wise Distribution Of Both Non-neoplastic And Neoplastic Lesions Of Oral Cavity (n=275)

Gender	Non-neoplastic lesions	Neoplastic lesions			Total cases (%)
		Benign lesions	Premalignant lesions	Malignant lesions	

MALE	34 (12.36%)	20 (07.27%)	12 (04.36%)	122 (44.36%)	188 (68.36%)
FEMALE	30 (10.91%)	11 (04.00%)	06 (02.18%)	40 (14.55%)	87 (31.64%)
TOTAL	64 (23.27%)	31 (11.27%)	18 (06.55%)	162 (58.91%)	275 (100%)

Table I- In our study age range varies between 8 to 90 years. Similar to Agrawal et al, Beena et al and Kosam et al^(4,5,6), neoplastic lesions are more common than non-neoplastic lesions. It is may be due to late attendance of the people in the OPD. In present study male to female ratio was 2.1:1 which shows male predominance similar to Kosam⁶ (3:1), Agrawal (3.3:1)⁴ and Bhagat (4:1)⁷. In our study females were affected due to habits of tobacco chewing and alcohol intake in our area.

Table II- Age Wise Distribution Of Both Non-neoplastic And Neoplastic Lesions Of Oral Cavity (n=275)

Age (in years)	Non-neoplastic lesions	Neoplastic lesions			Total cases (%)
		Benign lesions	Premalignant lesions	Malignant lesions	
0-10	03 (01.09%)	03 (01.09%)	00 (00.00%)	00 (00.00%)	06 (02.18%)
11-20	10 (03.64%)	09 (03.27%)	01 (00.36%)	01 (00.36%)	21 (07.64%)
21-30	24 (08.73%)	05 (01.82%)	02 (00.73%)	15 (05.45%)	46 (16.73%)
31-40	09 (03.27%)	05 (01.82%)	04 (01.45%)	43 (15.64%)	61 (22.18%)
41-50	06 (02.18%)	03 (01.09%)	05 (01.82%)	45 (16.36%)	59 (21.45%)
51-60	09 (03.27%)	03 (01.09%)	02 (00.73%)	32 (11.64%)	46 (16.73%)
61-70	02 (02.73%)	02 (00.73%)	04 (01.45%)	22 (08.00%)	30 (10.91%)

71-80	00 (00.00%)	01 (00.36%)	00 (00.00%)	03 (01.09%)	04 (01.45%)
81-90	01 (00.36%)	00 (00.00%)	00 (00.00%)	01 (00.36%)	02 (00.73%)
Total	64 (23.27%)	31 (11.27%)	18 (06.55%)	162(58.91%)	275 (100%)

Table II- Non-neoplastic lesions most commonly involved third decade of life (21 to 30 years of age), similar to R Laishram et al², Khan et al⁸ and Manjeet et al⁹. Benign lesions most commonly involved 10 to 20 years of age groups similar to Khateeb et al¹⁰ and Kadeh et al¹¹

Table III- Site Wise Distribution Of Non-neoplastic And Neoplastic Lesions Of Oral Cavity (n=275)

Site of the oral lesions		Non-neoplastic lesions	Neoplastic lesions			Total cases (%)
			Benign Lesions	Premalignant lesions	Malignant Lesions	
Buccal mucosa		16 (05.82%)	09 (03.27%)	11 (04.00%)	67 (24.36%)	103 (37.45%)
Gingiva		03 (01.09%)	04 (01.45%)	01 (00.36%)	09 (03.27%)	17 (06.18%)
Alveolus		01 (00.36%)	00 (00.00%)	00 (00.00%)	01 (00.36%)	02 (00.73%)
Gingivobuccal sulcus (GBS)		02 (00.73%)	00 (00.00%)	02 (00.73%)	10 (03.64%)	14 (05.09%)
Floor of mouth		00 (00.00%)	02 (00.73%)	01 (00.36%)	03 (01.09%)	06 (02.18%)
Tongue	Lt. Border	06 (02.18%)	02 (00.73%)	01 (00.36%)	36 (13.09%)	45 (16.36%)
	Rt. Border	00 (00.00%)	00 (00.00%)	00 (00.00%)	02 (00.73%)	02 (00.73%)
	Tip	00 (00.00%)	01 (00.36%)	00 (00.00%)	02 (00.73%)	03 (01.09%)
	Dorsum	01 (00.36%)	00 (00.00%)	00 (00.00%)	01 (00.36%)	02 (00.73%)
Lip	Lt. lower Lip	22 (08.00%)	10 (03.64%)	02 (00.73%)	23 (08.36%)	57 (20.73%)
	Rt. Lower lip	00 (00.00%)	01 (00.36%)	00 (00.00%)	00 (00.00%)	01 (00.36%)
Palate		00 (00.00%)	01 (00.36%)	00 (00.00%)	03 (01.09%)	04 (01.45%)
Retro-molar space		00 (00.00%)	00 (00.00%)	00 (00.00%)	01 (00.36%)	01 (00.36%)
Salivary gland		01 (00.36%)	01 (00.36%)	00 (00.00%)	02 (00.73%)	04 (01.45%)
Tonsil		12 (04.36%)	00 (00.00%)	00 (00.00%)	01 (00.36%)	13 (04.73%)
Vestibule		00 (00.00%)	00 (00.00%)	00 (00.00%)	01 (00.36%)	01 (00.36%)
Total		64(23.27%)	31(11.27%)	18(06.55%)	162(58.9%)	275 (100%)

Table III- In present study buccal mucosa is most common site for lesion in oral cavity 103 (37.45%) similar to Beena et al⁵ (56%), Kosam et al⁶ (54%), Laishram et al² (26.8%) Mehta et al¹⁶ (32%) and Mahrotra et al.¹⁷ followed by lips 58 (21.09 %) and tongue 52 (18.09%) which differs from these studies. In our study may be the possibility that people taking khaini (a tobacco product most frequently used) keep it under the lips frequently.

TABLE IV- Histopathological diagnosis of oral cavity lesions (N=275)

Type of lesions	Oral lesions	No. of patients (N=275)	Percentage (%)
Non-neoplastic lesions	Inflammatory lesion	13	04.73%
	Chronic tonsillitis	13	04.73%
	Mucocele	12	04.36%
	Squamous papilloma	07	02.55%
	Renula	05	01.82%
	Epidermal inclusion cyst	03	01.09%
	Pseudo-epitheliomatous hyperplasia	03	01.09%
	Chronic sialadinitis	02	00.73%
	Obstructive sialadinitis	02	00.73%
	Giant cell granuloma	01	00.36%
	Ectinomyces abscess	01	00.36%
	Epulis	01	00.36%
	Follicular tonsillitis	01	00.36%
Benign lesions	Pyogenic granuloma	15	05.45%
	Fibrous hyperplasia	04	01.45%
	Mild dysplasia	04	01.45%
	Pleomorphic adenoma	01	00.36%
	Keratotic angioblastoma	01	00.36%
	Kutner's tumor	01	00.36%
	Ex pleomorphic adenoma	01	00.36%
	Cavernous hemangioma	01	00.36%
	Capillary hemangioma	01	00.36%
	Fibroma	01	00.36%
	Follicular hyperplasia	01	00.36%

but differ with Prabhakar et al¹² more in 5th and 6th decade. Premalignant lesions were seen in 41 to 50 followed by 31 to 40 years of age comparable with Gupta M et al¹³, Bhalekar et al¹⁴ and Prabhakar et al¹² respectively. Malignant lesions observed in age group 41 to 50 resemble with Bhalekar S et al¹⁴ and Agrawal et al⁴. Followed by 31 to 40 age groups, which showed early incidence due to early exposure of risk factor in area of present study. In our study youngest patient with squamous cell carcinoma was 21 years of male which is similar to Lund et al¹⁵ and Agrawal et al⁴ (19 yrs of age). It is mainly due to easy accessibility and very early exposure of risk factors like tobacco and pan.

Premalignant lesions	Severe dysplasia	11	04.00%
	Lichen planus	04	01.45%
	Schwannoma	01	00.36%
	Perineural GCT	01	00.36%
	Neurofibroma	01	00.36%
Malignant lesions	WDSCC	119	43.27%
	MDSCC	16	05.82%
	Verrucous carcinoma	15	05.45%
	PDSCC	08	02.91%
	Invasive carcinoma	01	00.36%
	Acinic cell carcinoma	01	00.36%
	Basosquamous carcinoma	01	00.36%
	Keratinizing squamous cell carcinoma	01	00.36%
Total		275	100%

Table IV- In present study neoplastic lesions are also more common in males than in females with M:F ratio of 3.1:1 similar to Agrawal et al (3.3:1) which is higher than the findings of Pudasaini et al¹⁸ who observed a ratio of 2:1, most common lesion in oral cavity is squamous cell of carcinoma (58.18%) which is similar to Mishra et al¹⁹ (58.9%) and Hassawi et al²⁰ (60.12%). In our study 16 cases of SCC were below 30 years of age which also strongly shows easy accessibility and early age of risk exposure. Premalignant lesion severe dysplasia was (04.0%) similar to Isaac et al¹ study.

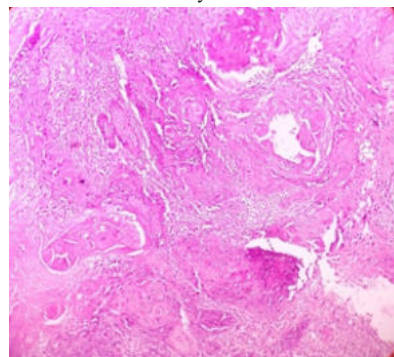


Fig 1. Squamous carcinoma(10x veiw)

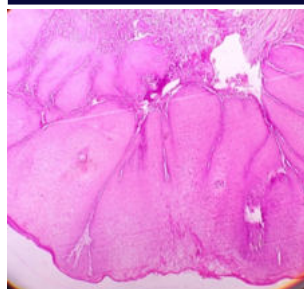


Fig 2. Verrucous carcinoma (4x veiw)

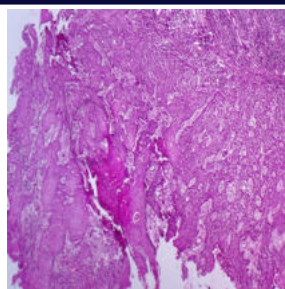


Fig 3. Basosquamous carcinoma (10x view)

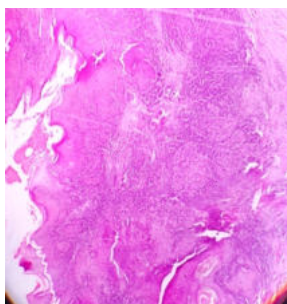


Fig 4. Lichenoid dysplasia (10x view)

Pyogenic granuloma or Lobular capillary hemangioma is common benign vascular tumor of skin and mucous membrane. Females are more affected because of estrogen dependency. It is also commonest benign lesion in our study (5.45%) similar to Senguven et al²². In non-neoplastic, inflammatory lesions are common in our study. All oral lesions and there frequency mentioned in tabulated form in table IV.

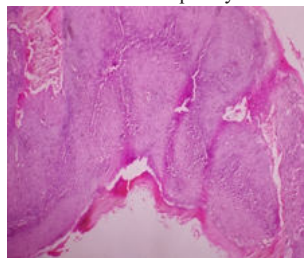


Fig 5. Pseudoepitheliomatous hyperplasia (4x view)

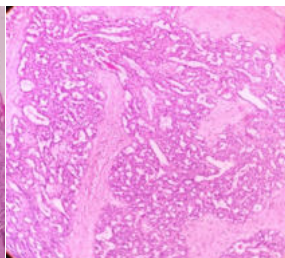


Fig 6. Pyogenic granuloma (10x view)

CONCLUSION

In our study squamous cell carcinoma is most common malignant lesion of oral cavity. Clinical diagnosis is not enough for determination of the nature of lesion. Histopathological evaluation is important tool for diagnosis of the lesion in premalignant and early stages so we can prevent mental and psychological trauma to the patient.

REFERENCES

1. Saraswathi TR, Ranganathan K, Shanmugam S, Sowmya R, Narasimhan PD, Gunaseelan R. Prevalence of oral lesions in relation to habits: Cross-sectional study in South India. *Indian J Dent Res*. 2006;17(3):121–5.
2. Laishram R, Modi D, Sharma LC, Debnath K. Pattern of oral cavity lesions in a tertiary care hospital in Manipur, India. *J Med Soc*. 2013;27(3):199–202.
3. Memon IM, Iqbal SM, Hussain SI, Baig MN. Pattern of Oral malignancies at tertiary care hospitals Abstract Introduction: 2012;268–71.
4. Agrawal R. Spectrum of Oral Lesions in A Tertiary Care Hospital. *J Clin Diagnostic Res*. 2015;9(May 2014):2014–6.
5. Beena Mary Thomas and Indu Rajagopal* Histopathological Spectrum of Oral Cavity Lesions at A Tertiary Care Hospital in South India DOI: 10.21276/APALM.2359.
6. Kosam S, Kujur P. Pattern of Oral Cavity Lesion: A Retrospective Study of 350 Cases. *Int J Sci Stud* 2016;4(3):65–69.
7. Ritu Bhagat1, Mandeep Randhawa2, Subhash Bhardwaj HISTOPATHOLOGICAL SPECTRUM OF ORAL CAVITY LESIONS.
8. Khan Y, Birare SD. Study of Histopathology of the Tumour like Lesions and Tumours of the Oral Cavity. 2016; 5(4):915–20.
9. M.S. B. A. J. V.K. B. J. K. B.S. S. A.K. S, et al. A clinico-pathological study of 200 cases of oral cavity lesions. *Res J Pharm Biol Chem Sci [Internet]*. 2014;5(6):1035–40.
10. Al-Khateeb TH. Benign Oral Masses in a Northern Jordanian Population-a Retrospective Study. *Open Dent J*. 2009;3(1):147–53.
11. Kadeh H, Saravani S, Tajik M. Reactive hyperplastic lesions of the oral cavity. *Iran J Otorhinolaryngol*. 2015;27(79):137–44.
12. Prabhakar Patro et.al. A histopathological study of oral cavity lesions International

Journal of Health Sciences and Research (www.ijshr.org) 19 Vol.10; Issue: 3; March 2020.

13. Gupta M, Choudhary H, Gupta N, Gupta A. Histopathological study of neoplastic lesions of oral cavity and oropharynx. 2016;4(5):1506–10.
14. Surekha Hemant Bhalekar Sonia Kundu. Clinico-pathological study of oral cavity lesions-a retrospective analysis of 70 cases. *GJRA*. 2018;5(5):46–8.
15. Lund VJ. Malignancy of the nose and sinuses: Epidemiological and aetiological considerations. *Rhinology*. 1991;29:57–68. [PubMed] [Google Scholar].
16. Mehta NV, Dave KK, Gonsai RN, Goswami HM, Patel PS, Kadam TB. Histopathological study of oral cavity lesions: A study on 100 cases. *Int J Res Rev* 2013; 05:110–6.
17. Mehrotra R, Singh M, Kumar D, Pandey AN, Gupta RK, Sinha US. Age specific incidence rate and pathological spectrum of oral cancer in Allahabad. *Indian J Med Sci* 2003;57:400–4[6].
18. Pudasaini S, Barar R. Oral cavity lesions: A study of 21 cases. *Journal of Pathology of Nepal*. 2011;1:49–5115.
19. Misra V, Singh PA, Lal N, Agrawal P, Singh M. Changing pattern of oral cavity lesions and personal habits over a decade: Hospital Based record analysis from Allahabad. *Indian J Community Med* 2009;34:321–5.
20. Hassawi BA, Ali E, Subhe N. Tumors and tumor like lesions of the oral cavity a study of 303 cases. *Tikril Med J* 2010;16:177–83.
21. Isaac U, Issac JS, Ahmed Khoso N. Histopathologic features of oral submucous fibrosis: A study of 35 biopsy specimens. *Oral Surg Oral Med Oral Pathol Oral Radiol Endod* 2008;106:556–60.
22. Sengüven B, Baris E, Yildirim B, Shuibat A, Özer Yücel Ö, Museyibov F, et al. Oral mucosal lesions: A retrospective review of one institution's 13-year experience. *Turk J Med Sci* 2015;45:241–5.