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Histopathological evaluation of premalignant and malignant lesions of oral cavity

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Abstract

Aim: To evaluate the scale of pre malignant and malignant oral lesions. **Material and Methods**: This prospective study was carried out in the Department of Pathology, Jawaharlal Nehru Medical College and Hospital Bhagalpur, Bihar, India from January 2018 to February 2019. In all these patients with abnormal mucosal change histopathological examination was done. **Results:** Out of 200 patients, 140 (70%) patients were reported to be pre-malignant, 60 (30%) were malignant. Of the total cases, 120 were males and 80 were females table 2. Of the malignant cases, 15 were males and 45 were females. Of the pre malignant cases, 140 were males and 35 were females. In the group of 60 patients with malignancy, 27(45%) had well-differentiated squamous cell carcinoma, 13(21.67%) had moderately-differentiated carcinoma, 8(13.33%) had poorly-differentiated carcinoma, 6(10%) had verrucous carcinoma, 4(6.67%) had basaloid squamous cell carcinoma and 2(3.33%) had ameloblastic carcinoma (P.I.O.C). In the potentially malignant group, 79 were reported as lichen planus (56.42%), 40 were reported as OSMF (28.57%), 13 were reported as leukoplakia (9.28%), and 8(5.71%) cases were erythroplakia. **Conclusion:** This study revealed that pre-malignant and malignant oral lesions were widespread in the patients visiting the hospital in Bihar region.

Keywords: Malignant, Premalignant, Histopathological Features, Tobacco, Prevalence.

Introduction

Oral cavity is significantly more prone to an enormous number of environmental insults because of its exposure to the external environment and making it common site for many tumour and tumour like lesions.[1] Oral cancer is a major public health problem in many parts of the world, more so in developing countries.[2]

Oral cancer in India, which still is a developing nation, is a major health problem in world. Worldwide studies have shown the annual incidence of 3,000,000 oral cancer cases.[3] In India Incidence rates per 100,000 population were 12.8 in men and 7.5 in women.[4]

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Rarely it is seen in young people and mostly occurs in the elderly people during the fifth to eighth decade of life.[5] Generally predisposing factors for oral carcinoma are alcohol, tobacco use and smokeless tobacco, betel nut chewing and human papilloma virus(HPV). Poor dental care and poor diet may also contribute to Oral cancer.[6] Oral cancer incidence is highest in India and 90 to 95% of the oral cancers is oral squamous cell carcinoma.[7] Cases of oral cancer amplified from 1 million in 2012 to 1.7 million in 2035 according to different research agencies on cancer thus indicating that the death rate due to oral cancer will also increase in the same period.[6] Pre malignant lesions and conditions like oral submucousfibrosis, leukoplakia, erythroplakia, and lichen planus are commonly seen in India, and carry an increased risk for malignant transformation.[8] The scale of oral cancer varies from place to place within the country.[9] This

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study was thus planned to evaluate the scale of pre malignant and malignant oral lesions.

Material and methods

This prospective study was carried out in the Department of Pathology, Jawaharlal Nehru Medical College and Hospital Bhagalpur, Bihar, India from January 2018 to February 2019. after taking the approval of the protocol review committee and institutional ethics committee.

Methodology

For all the 200 patients careful and thorough clinical examination of the oral cavity was carried out for any abnormal mucosal change. The patients with specific mucosal changes were studied in detail. In all these patients with abnormal mucosal change histopathological examination was done.

Statistical analysis

The recorded data was compiled entered in a spreadsheet computer program (Microsoft Excel 2010) and then exported to data editor page of SPSS version 20 (SPSS Inc., Chicago, Illinois, USA). Descriptive statistics included computation of percentages, means and standard deviations.

Results

Table 1: Prevalence of premalignant and malignant lesions

Parameter	N=200	Percentage
Premalignant	140	70
Malignant	60	30

Table 2: Age distribution

Age	premalignant	Percentage	malignant	Percentage
Below 30	12	6	1	0.5
30-40	24	12	9	4.5
40-50	48	24	29	14.5
50-60	36	18	15	7.5
Above 60	20	10	6	3

Table 3: gender distribution of premalignant and malignant lesion

Gender	Premalignant	Percentage	Malignant	Percentage	Total
Male	105	52.5	15	7.5	120
Female	35	17.5	45	22.5	80
Total	140	70	60	30	200

Table 4 distribution of malignant lesions

Malignant lesions	N=60	Percentage
Well-differentiated squamous cell carcinoma	27	45
Moderately-differentiated carcinoma	13	21.67
Poorly-differentiated carcinoma	8	13.33
Verrucous carcinoma	6	10
Basaloid squamous cell carcinoma	4	6.67
Amleoblastic carcinoma	2	3.33

Table 5: distribution of premalignant lesions

Premalignant lesions	N=140	Percentage
OLP	79	56.42
OMSF	40	28.57
Leukoplakia	13	9.28
Eryoplakia	8	5.71

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Discussion

Prevalence studies in oral pathology can be done on visiting outpatients or examining on whole population, however examining outpatients is easier to perform then whole population examination due to its method but it gives information about the whole population.[10]

Malignant neoplasm incidence varies from one region to another, because of different factors and the potential predisposing etiologies.[11] The mortality rate has remained largely unchanged for decades despite advances in surgery and radiotherapy, which remain the standard treatment options, with a 5-year survival rate of around 50%. In OSCC Surgery along with radiotherapy are the treatment of choice in primary stages however in the later stages combination therapy such as surgery, radiotherapy or chemotherapy have responded well.[12] In our study 60 (30%) were malignant lesions while as in other research studies 23.3% of were histopathologically diagnosed as oral cancers (OSCC).[13] while as in other studies done in Thiruvananthapuram have shown that OSCC constituted 14% of all cancers.[14]

Most frequently encountered whitelesions in clinics is leukoplakia which is generally seen at ages between 5th-7th decade with a male predominance.[10] The prevalence of oralleukoplakia done by Dambi et al.[15] in 2001 varies from 1% to 13% and mostly effecting buccal mucosa, floor of the mouth, tongue and soft palate.[16] However, in our study 13(9.28%) prevelance was seen. 8(5.71%) was prevelance of erythroplakia In our study which is seen less frequently than leukoplakia but it is more life threatening. In other studies the prevalence was quite high.[10]

Oral lichen planus, which is located bilaterally and its cause not fully understood .Axell and Rundquist found a prevalence of 1.9% among Swedish people and Axell et al., 1990 reportedrates of 3.8% and 2.1% in Thai and Malaysian outpatientsrespectively.[10,17] In our study, 56.42% prevalence rate was observed. Oral submucous fibrosis which is commonly seen in India with betel nut as a main culprit 28.57% cases were observed in our study.

Oral cavity could be used in early detection of precancerous and cancerous lesions as it is more accessible to complete examination, but usually it gets detected in later stages. Use of recent advances in oral screening and detection aids such as Vizylite and VELscope help in detection in early stage, or even in the pre-malignant stage.[18]

Conclusion

In terms of prevalence, frequency and presentation awareness of the precancerous and malignant lesions of oral cavity is beneficial for oral pathologists and general dental practitioners in making early and better diagnosis and treatment. Based on knowledge early detection of pre malignant and malignant lesions minimize potential complications and enhance life expectancy of the patient

Reference

1. Author C. Histopathological study of oral cavity lesions: a study on 100 cases ijcrr. 2013;05(May):110–6.
2. Mehrotra R, Pandya S, Chaudhary AK, Kumar M, Singh M. Prevalence of oral premalignant and malignant lesions at a tertiary level hospital in Allahabad, India. Asian Pacific J Cancer Prev. 2008;9(2):263–6.
3. Ken Russell Coelho.Challenges of the Oral Cancer Burden in India. Journal of Cancer Epidemiology. 2012;2012:1-17.
4. G Kiran et al. Demographics And Histopathological Patterns Of Oral Squamous Cell Carcinoma At A tertiary Level Referral Hospital In Hydrabad, India: A 5 Year Retrospective Study. Journal Of Orofacial Research. 2012;2:198-201.
5. Iype E M, Pandey M, Mathew A, Thomas G, Sebastian P, Nair M K. Oral Cancer Among Patients Under The Age Of 35 Years. J Post Grad Med. 2001;5:171.
6. Varshitha. A. Prevalence of Oral Cancer In India. J. Pharm. Sci. and Res. 2015;7: 845-848.
7. Liviu Feller, Johan Lemmer. Oral Squamous Cell Carcinoma: Epidemiology, Clinical Presentation and Treatment. Journal of Cancer Therapy. 2012;3:263-268.
8. Pankaj Chaturvedi, Deepa R Nair, Uday Pawar, RiteshPruthy. Oral cancer: Premalignant conditions and screening - an update. Journal of Cancer Research and Therapeutics. 2012;8:57-66.
9. Ajit Mishra et al. Prevalence of Oral Cancer in ChhattisgarhAn Epidemiological study. Chhattisgarh Journal of Health Sciences.2013;1:1-4.
10. Suhail latoo, PushparajaShetty,OwaisGowhar. Prevalence Of Oral Precancerous Lesions Among Population Of Sasihitlu Village, Mukka, Dakshin Kannada District, Karnataka, India.

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International Journal of Current Research. 2016;08:26421-26423.

11. Raeefa Anis, Kamis Gaballah. Oral cancer in the UAE: a multicenter, retrospective study. Libyan J Med. 2013;8:1-6.

12. Anastasios K. Markopoulos. Current Aspects on Oral Squamous Cell Carcinoma. The Open Dentistry Journal. 2012;6:126-130.

13. Shyam, et al. Prevalence of oral potentially malignant and malignant lesions at a tertiary level hospitalin Hyderabad, India. Journal of Dr. NTR University of Health Sciences. 2014;3:S13-16.

14. Padmakumary G, Varghese C. Annual Report. 1997. Hospital Cancer Registry. Thiruvananthapuram, India: Regional Cancer Centre. 2000;3-7.

15. Dambi, C., Voros-Bolog, T., Czegledy, A., Hermann, P., Vincze, N., Banoczy, J. Risk group assessment of oral precancer attached to X-ray lung-screening examinations. Community Dent Oral Epidemiol. 2001;29:9-13.

16. Van der Wall, I., Schepman, K. P., van der Meij, E. H., Smeele, L. E. Oral leukoplakia: a clinicopathological review. Oral Oncol. 1997;33:291-01.

17. Axell, T., Rundquist, L. 1987. Oral lichen planus:a demographic study. Community Dent Oral Epidemiol. 1987;15:52-6.

18. Diana V Messadi. Diagnostic aids for detection of oral precancerous conditions. Int J Oral Sci. 2013;5:59–65

Conflict of Interest: Nil
Source of support:Nil