



EPIDEMIOLOGICAL TRENDS AND HISTOPATHOLOGICAL SPECTRUM OF OTORHINOLARYNGEAL MALIGNANCIES IN TAMIL NADU-A FIVE YEARS STUDY

Vajravelu Jayanthi

Associate Professor, Department of Pathology, Government Dharmapuri Medical College, Dharmapuri, TN.

ABSTRACT

Introduction: Otorhinolaryngeal cancers (ORLC) constitute 6th commonest malignancy in the world accounting for 23% of men and 6% of women in India.

Materials and Methods: A 5 year retrospective study was conducted in Govt Dharmapuri Medical College Hospital, Tamilnadu. A total of 797 biopsies from the ENT Department were received in the Department of Pathology and were analysed based on the age and sex of the patient, site of the lesion and histopathological diagnosis.

Results: Out of 797 biopsies, 177 were reported as malignant lesions of which 120 were men and 57 were women. Oral cavity cancer was the most common site of malignancy involved with anterior 2/3rd tongue as the commonest subsite. Larynx was the second commonest site involved with supraglottis being the commonest subsite. Most common histopathological diagnosis was squamous cell carcinoma (SCC) Grade II. **Conclusion:** Adequate cancer awareness and health education programmes should be conducted to tackle head and neck cancers which will help to achieve a better survival rate by identifying ORLC at an early stage.

KEYWORDS : Otorhinolaryngeal cancers, oral cavity, SCC Grade II

INTRODUCTION:

Neoplasms of Head and Neck are commonly encountered in India constituting 20% of cancer burden¹. Otorhinolaryngeal malignancy (ORLC) is the 6th common malignancy in the world and increasing incidence is noted recently in developing countries like India. It affects 23% of men and 6% of women in our country². Malignancies of oral cavity including lips, nasal cavity, paranasal sinuses (PNS), pharynx, larynx and salivary glands constitute the malignancies of Head and Neck region. Consumption of tobacco in various forms like smoking, betel quid chewing together with alcohol are considered to be synergistic risk factors¹. Apart from this, Human Papilloma Virus (HPV) is also implicated in the etiology of ORLC³. Oropharynx is the commonest site of lesion in Northeast India and Larynx is the commonest site in North India. This variation in the incidence of subsites in Head and Neck Cancers (HNC) is due to the relative distribution of risk factors like alcohol and tobacco in various forms¹. Our study was conducted in Government Dharmapuri Medical College Hospital located in central part of Tamilnadu, South India which attracts many patients from the surrounding rural areas.

MATERIALS & METHODS: Ours is a retrospective study based on the data obtained from the histopathological biopsy records in the Department of Pathology, Government Dharmapuri Medical College Hospital, Dharmapuri, Tamilnadu for a period of five years from January 2012 to December 2016. The number of biopsy specimens received from the ENT Department were sorted out from the total number of biopsies and analysed based on age, sex, site of biopsy and histopathological diagnosis.

Statistical analysis was done using IBM SPSS Version 20 for the prevalence of HNC in males and females, most common site of involvement and the spectrum of histopathological diagnosis.

RESULTS:

In the study period of 5 years from 2012 to 2016, a total of 10125 biopsies were received in the Pathology Department, out of which 797 specimens of Head and Neck region were received, including the Oral cavity. Biopsies from salivary glands and thyroid were not included in our study. Among the 797 biopsies, 620 cases were reported as benign (335 males and 285 females) and 177 cases were reported as malignant, which included 120 males and 57 females. The male:female ratio was 2:1 for the malignant cases. The difference in the prevalence among males and females was statistically significant. Majority of malignancies were observed in the age group of 51-60 years in both sexes. Oral cavity (n=85, 48%) was the commonest site involved with the most common subsite being anterior 2/3rd of tongue (n=39) followed by buccal

mucosa (n=19). The second commonest site involved was larynx (n=38, 21.5%) with most common subsite as supraglottis. Regarding the histopathological diagnosis, Squamous cell carcinoma Grade II was the most common diagnosis followed by Squamous cell carcinoma Grade I.

DISCUSSION: Head and Neck Cancers are commonly encountered in several parts of the world where tobacco use and alcohol consumption are high with the age standardized incidence exceeding 30/1,00,000 population in countries like France, Hongkong, India, Brazil, Italy and Spain². Higher rates more than 10/1,00,000 are encountered among females in countries like India, Hongkong and Philippines. A declining trend in the overall incidence rate is observed in both sexes in our country along with Hongkong, Brazil and US Whites⁴. In our study, male:female ratio is 2:1 similar to the study conducted by Manjari et al⁵. The difference in the prevalence among males and females was statistically significant (p=.001). The peak age incidence in our study is between 51-60 years similar to the studies conducted in North India and North Eastern India^{1,2}.

Figure 1 – Male:Female ratio

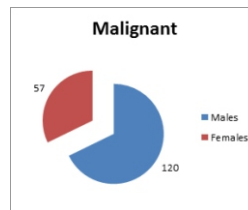


Figure 2 – HPE appearance

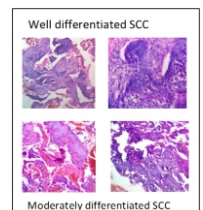


Table 1-Site of Biopsy

Site	Male (n)	Male (%)	Female (n)	Female (%)	Total (n)
Oral cavity	44	37%	41	23.16%	85
Larynx	34	28%	4	2.2%	38
Oropharynx	31	26%	4	2.2%	35
Hypopharynx	1	0.83%	2	1.1%	3
Nasopharynx	5	4.2%	0	0%	5
Ear	1	0.83%	2	1.1%	3
Nose&PNS	4	3.33%	4	2.2%	8
Total	120	67.7%	57	32.2%	177

In the present study, Oral cavity malignancies (48%) are the commonest among Head and neck malignancies followed by Laryngeal malignancies (21.5%). This is similar to the study of Manjari et al and Manisha Sharma et al where oral cavity was involved in 36% and 68% of cases respectively^{5,6}. Among the oral

cavity cancers, anterior 2/3rd tongue was the most commonly involved subsite (n=39) followed by Buccal mucosa (n=19). Oral cavity malignancies are the leading cause of mortality accounting for 22.9% in cancer related deaths, recently reported in a study⁷. Carcinoma involving oral cavity is the 11th commonest tumour in the world⁸. The second commonest site involved in our study is larynx (n=38) with supraglottis being the commonest subsite (n=30). But in the study conducted by Ravi malhrota et al, Larynx was the commonest site of malignancy with commonest subsite being supra glottis². Nasopharynx (n=3) and hypopharynx had minimum number of carcinomas (n=1) similar to the study done by Salahuddin Siddiqui et al¹.

Regarding the sex ratio, high male preponderance in our study may be due to the combined use of tobacco and alcohol by the males living in our region. The high incidence of buccal mucosa malignancy in females (18) could be attributed to the use of chewable tobacco⁶. In our study Squamous cell carcinoma of varying Grades were encountered but Squamous cell carcinoma (SCC) Grade II (n=112) was the commonest observed histopathological diagnosis similar to the studies done by Manisha Sharma et al and Jerjes W et al.^{6,9} But SCC Grade I was most commonly observed by Salahuddin Siddiqui et al¹. Several predisposing factors have been postulated including the race, diet, occupation, socio economic status, H/O previous radiation, etc.^{5,10,11}. Similarly prognosis of head and neck malignancies depends upon the age of the patient, site and size of the tumour, degree of differentiation and regional lymphnode metastasis.¹²

CONCLUSION:

The present study expresses the Histopathological spectrum and epidemiological features of Head and Neck malignancies in Dharmapuri district of Tamilnadu. Smoking and Alcohol are important synergistic risk factors. Early detection and treatment has only limited potential to improve the mortality in the short term. Hence awareness, health education programmes and counseling are very important for the patients particularly in developing nations like India and they should be conducted in regular intervals especially in rural areas. Curative treatment is not possible for Head and Neck cancers since they are identified in late stages only. So, cancer screening camps and cancer awareness activities should be conducted periodically so that tumours could be identified at an early stage for a better survival rate^{13,14,15}.

REFERENCE:

1. Md.Salahuddin Siddiqui, Rajeev Chandra, Abdul Aziz, Sourav Suman. Epidemiology and histopathological spectrum of Head and Neck cancers in Bihar, a state of Eastern India, Asian Pacific J of Cancer prevention, vol13, 2012
2. Mehrotra, R, Singh, M (2005) Trends of prevalence and pathological spectrum of Head and Neck Cancers in North India, Indian Journal of Cancer, 42, 89-93.
3. Rautava J, Syrjanen S (2012) Biology of HPV infections in Head and Neck Carcinogenesis. Head and Neck Pathol, 6, 3-15
4. Franceschi S, Bidoli E, Herrero R, Munuz N. Comparison of cancers of Oral cavity and Pharynx Worldwide: Etiological clues, Oral Oncol, 2000; 36: 106-15
5. Manjari M, Popli R, Paul S, Gupta VP, Kaholin S.K. Prevalence of oral cavity, pharynx, larynx and nasal cavity malignancies in Amritsar, Punjab, Indian J Otolaryngol Head Neck Surg 1999; 48: 191-5
6. Manisha Sharma, Manas Madan, Mridu Manjari, Tejender Singh Blasin, Spriha Jain, Saumil Gary Prevalence of Head and Neck Squamous cell carcinoma in our population: The clinic-pathological and morphological description of 198 cases, International J of Advanced Research (2015), vol3, Issue1, 827-833
7. More, Y and D'Cruz, A.K (2013) Oral Cancer: Review of Current Management Strategies. The National Medical Journal of India, 26, 152-158
8. Ganesh Kumar Balasubramanian, Ramesh Babu Kaiyana Sundaram, Ramanathan Thirunavukkarasu, Githanjali Narendran, Jagadeesh Natarajan. Prevalence of Otorhinolaryngeal malignancies in Thanjavur Delta Region-A Prospective Study. International Journal of Otorhinolaryngology and Head and Neck Surgery, 2016, 5, 39-43
9. Jerjes W, Upile T, Petrie A, Riskalla A, Hamdoon Z, Vourvachin M, Karavidan K, Jay A, Sandison A, Thomas GJ, Kalavrezos N, Hopper C. Clinicopathological parameters, recurrence, locoregional and distant metastasis in squamous cell carcinoma patients. head and neck oncol. 2010; 2: 9
10. Thomas G, Hashibe M, Jacob BJ, Ramadas K, Mathew B, Sankaranarayanan R et al. Risk factors for Multiple Oral Malignant Lesions. Int J Cancer 2003; 107: 285-91
11. Warnakulasuriya S. Lack of molecular markers to predict malignant potential of Oral Precancer. J Pathol 2000; 190: 407-9
12. Dragomir CP, Simi Onesu C, Margaritescu CL, Stephen A, Dragomir IM, Popescu MR. P53, P16, Ki67 immunexpression in oral squamous carcinomas. Rom J Morphol. Embryol. 2012; 53(10): 89-93
13. Shantha, V and Swaminathan, R (2010) Madras Metropolitan Tumour Registry. National Cancer Registry Programme, ICMR, Cancer institute. (W.I.A), Chennai.
14. Gangly, I and Patel, S.G (2012) Epidemiology and prevention of Head and Neck Cancers. In: Watkinson J and Gilbert R.W, Eds. Stell and Maran's textbook of Head and Neck Surgery and Oncology, 5th edition: CRC press, Boca Raton, 9-14.
15. Poonam Joshi, Sourav Dutta, Chattervedi, Sudhi Naimsnch, Head and neck cancers in developing countries. Rambam Maimonides Med J: 2014 Apr; 5(2): e2009