

Study of head and neck malignancies with clinicopathological correlation

Sarita D Dakhure^{1*}, Raviraj R Naik², Fatima Tooba³

{¹Assistant Professor, ²Professor, Department of Pathology}²Assistant Professor, Department of Biochemistry, IIMSR, Warudi, Jalna, Maharashtra.

Email: drsarita14june@gmail.com

Abstract

Head and neck cancer are amongst the commonest malignancy in India, accounting for around 20% cancer burden in India. Mouth and tongue cancers are more common in the Indian subcontinent. More than 90% of all Upper aerodigestive tract cancers are squamous cell carcinoma. **Objective:** The objective of this work is to study the patterns of head and neck malignancies in 78 cases. **Methods:** This is a retrospective and prospective study conducted at the MIMSR Medical College Latur. The data were collected through reviewing of patients records over 5 years. [July 2008 to June 2013] Parameters analyzed were age, sex, topography and tumor histology. Results: The total number of patients records reviewed was 78. Age distribution ranged from 12 to 90 years with mean age of 48.79 and median age of 50 years. The male to female ratio was 2.7:1. The most common affected sites in order of frequency were oral cavity (61.5%), skin (19.2%), salivary gland (10.2%), hypopharynx and larynx (7.7%), soft tissue (1.3%). The most common histological types were squamous cell carcinoma (90.77%) followed by salivary gland tumors. **Conclusion:** To conclude majority of head and neck malignancies are common in elderly with preponderance in males than females. The most common malignant tumour is squamous cell carcinoma of oral cavity followed by skin. Association of tobacco and alcohol intake is significant in cases of squamous cell carcinoma of oral cavity.


Keywords: Head and neck malignancies, squamous cell carcinoma.

*Address for Correspondence:

Dr. Sarita D Dakhure, Assistant Professor, Department of Pathology, IIMSR, Warudi, Jalna, Maharashtra, INDIA.

Email: drsarita14june@gmail.com

Received Date: 14/01/2016 Revised Date: 18/02/2016 Accepted Date: 22/03/2016

Access this article online	
Quick Response Code:	Website: www.medpulse.in
	DOI: 24 March 2016

INTRODUCTION

Pathology of head and neck is an easy sounding title for complex subject matter. From an anatomic and pathologic perspective the region of the head and neck is one of the most complex areas of the body with a variety of different organ system and tissue type within it's domain. Generally, cancer of the head and neck are considered to include all lesions of the mucosal surface from the internal nose and nasopharynx to thoracic inlet level of the trachea and esophagus. The salivary glands are routinely added, and less regularly the thyroid and parathyroid glands. Cancer of central nervous system and the eye are typically excluded.¹ It is evident that head and neck cancer which carries an overall death risk of 54%

represents a major health problem. Globally, head and neck cancer ranks as the sixth most common cancer. Among developing countries, head and neck cancer ranks third and it is fourth most common cancer in males worldwide.² Head and neck cancer are amongst the commonest malignancy in India, accounting for around 20% cancer burden in India. Mouth and tongue cancers are more common in the Indian subcontinent.³ More than 90% of all Upper aerodigestive tract cancers are squamous cell carcinoma occurring in 5th - 6th decades of life, rates increasing with age.² The outlook for an incidence, morbidity and mortality of Upper aerodigestive tract, lung and other tobacco associated malignancies are tightly linked to the trends of marketing and consumption of tobacco and smoking. Alcohol is another recognized risk factor for development of invasive Squamous cell carcinoma of Upper aerodigestive tract with evidenced to document a synergistic effect when two risk factors are combined.¹ Both tobacco and alcohol are dose-dependent.

MATERIAL AND METHODS

The present study is undertaken to study clinicopathological aspects, to classify malignant lesions of head and neck in patients coming to this Hospital in a period from July 2008 to June 2013 i.e. three year retrospective from July 2008 to June 2011 and two year

prospective from July 2011 to June 2013. The tumours of head and neck region were selected on basis of clinical history, examination findings and clinical diagnosis; which were then subjected to biopsy, curative surgery and detail gross and histopathological examination. Head and neck tumours divided under following eight groups were

included in the study, Oral cavity and oropharynx; Nose, paranasal sinuses and nasopharynx; Hypopharynx and larynx; Salivary glands; Odontogenic apparatus; Ear; Skin and Soft tissue. Thyroid, CNS and Eye tumours were excluded from this study.

RESULTS

Table 1: Distribution of head and neck malignancies according to site

SN	Site of tumour	Frequency (No. of cases)	Percentage (%)
1.	Oral cavity and oropharynx	48	61.5
2.	Nose, paranasal sinuses and nasopharynx	-	-
3.	Hypopharynx and larynx	06	7.7
4.	Salivary glands	08	10.2
5.	Odontogenic apparatus	-	-
6.	Skin	15	19.2
7.	Soft tissue	1	1.3
	Total	78	100

Table 2: Histopathological distribution of malignant tumours

SN	Site	Name of tumours	No.	(%)
1	Oral cavity and oropharynx	• Squamous cell carcinoma. (tongue, buccal mucosa, soft palate)	48	61.5
2.	Nose, paranasal sinuses and nasopharynx	-	-	-
3.	Hypopharynx and larynx	• Squamous cell carcinoma.	6	7.7
4.	Salivary glands	• Mucoepidermoid carcinoma.	5	6.4
		• Epithelial myoepithelial carcinoma	1	1.3
		• Salivary duct carcinoma.	1	1.3
		• Adenoid cystic carcinoma	1	1.3
5.	Odontogenic apparatus	-	-	-
6.	Skin	• Basal cell carcinoma.	5	6.4
		• Squamous cell carcinoma.	9	11.5
		• Proliferating trichilemmal tumour.	1	1.3
7.	Soft tissue	• Dermatofibrosarcoma protuberance.	1	1.3
	Total		78	100

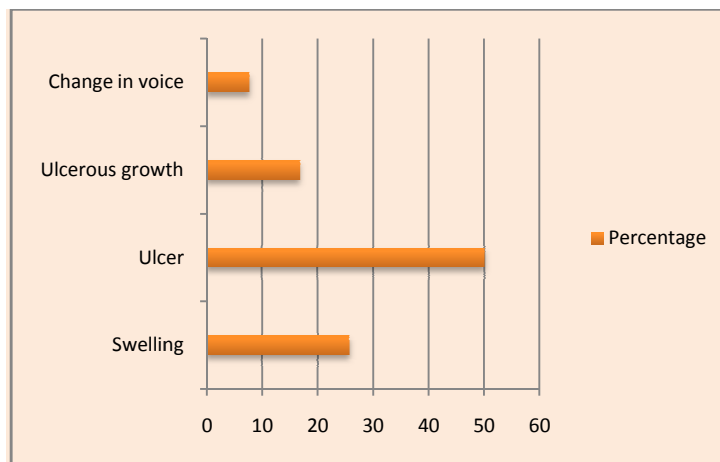


Figure 1: Distribution of head and neck malignancies according to clinical presentation

The present study includes a total of 78 head and neck malignancies out of 648 tumours of all type over period of five years. A total of 78 cases were analyzed and their clinico-histological correlation was done. Head and neck malignant tumours constitute 12% of all tumours. Maximum numbers of cases were in the age group of 41-60 years [37 cases (47.4%)]. Minimum numbers of cases were in age group of 0-20 years [2 cases (2.6%)]. Out of 78 cases, males (57 cases) outnumbered females (21 cases) contributing 73% and 27% respectively. The M:F ratio was 2.7:1. Frequency of head and neck malignancies were maximum in oral cavity [48 cases (61.5%)]. In hypopharynx and larynx 6 cases (7.7%), salivary gland 8 cases (10.2%), skin 15 cases (19.2%) and in soft tissue 1 case (1.3%) was found. [Table 1] In the present study the commonest complaint was ulcer, which was present in 39 cases (50%), followed by swelling in 20 cases (25.6%). [Figure 1] Duration of complaints was between 1 months-1 year in 54 cases (69.2%), 1-3 years in 14 cases (17.9%), >3 years in 06 cases (7.7%) and 4 cases (5.1%) had very short duration of <1 month. Squamous cell carcinoma of oral cavity was the most common malignancy observed, [48 cases (61.5%)] followed by Squamous cell carcinoma of skin [9 cases (11.5%)]. [Table 2]

DISCUSSION

Head and neck cancer are amongst the commonest malignancy in India. The incidence and pattern of occurrence of head and neck cancers vary greatly by race and geographic location. While head and neck cancers are relatively uncommon in the west where they constitute about 4% of all malignancies, in Asia and the Indian subcontinent, they are the most common forms of cancer contributing up to 50% of all malignancies. In addition, specific tumour types also show an uneven geographic and racial distribution. For example, nasopharyngeal cancer is seen more commonly in China, Hong Kong and the Far East, oral squamous cell carcinoma is seen more commonly in the Indian subcontinent; and laryngeal squamous cell carcinoma is the most predominant head and neck cancer in the West.⁴ In the period under study, 162 head and neck tumors were histologically confirmed in the departments of pathology, out of which 78 (47%) were malignant lesions and 84 (53%) were Benign. Our findings are consistent with the study of Popat VC *et al* (2010)⁵ and Siddiqui MS *et al* (2012).³ Males outnumbered females with M:F ratio of 2.7:1 which is similar to Siddiqui MS *et al* (2012)³ with M:F ratio 2.1:1. There is male preponderance in most studies of HNC worldwide.⁶ We observed that maximum number of patients suffering from malignancies of head and neck ranged from 41-60 years [37 cases (47.4%)].

Baskota *et al.* (2005)⁷ reported that 32% of patients were in the age range 51-60 years. In the present study the commonest complaint was ulcer, which was present in 39 cases (50%), followed by swelling in 20 cases (25.6%) with maximum complaints observed between duration of 1 month-1 year in 54 cases (69.2%). In our study, the oral cavity was the most common site of head and neck malignant tumour. The second most common site was skin followed by salivary gland. Our findings are consistent with the study by Popat VC *et al* (2010)⁵ and Amusa *et al* (2004).⁸ In contrast to Savita L *et al* (2012)⁹ study, in which the larynx was the most common site of primary lesion. According to our study incidence of Squamous cell carcinoma of oral cavity was 61.5%. Thapa *et al.* (2003)¹⁰ and Baskota *et al.* (2005)⁷ in their respective studies found that 75% and 78% of head and neck carcinomas were squamous cell carcinomas. Cancer of the head and neck, includes all cancers arising from the upper aerodigestive tract, and typically refers to squamous cell carcinomas of the head and neck, which are the predominant group. The incidence of head and neck squamous cell carcinoma (HNSCC) has been gradually increasing over the last 3 decades. It is the 5th leading cause of cancer by incidence and the 6th leading cause of cancer mortality in the world. The outlook for an incidence, morbidity and mortality of Upper aerodigestive tract, lung and other tobacco associated malignancies are tightly linked to the trends of marketing and consumption of tobacco and smoking. Alcohol is another recognized risk factor for development of invasive Squamous cell carcinoma of Upper aerodigestive tract with evidenced to document a synergistic effect when two risk factors are combined.¹ Both tobacco and alcohol are dose-dependent. In our study, 48 cases of SCC of oral cavity were noted from that, history of tobacco chewing was noted in 36 cases i.e. 75% and alcohol intake was noted in 30 cases i.e. 62%. In Gupta *et al* (1986)¹¹ study, history of tobacco chewing was present in 50% cases of squamous cell carcinoma of oral cavity. Recent studies have shown an inverse relationship of fruits and vegetables intake with head and neck cancer while a diet rich in red meat and fats pose increased risk. The people belonging to lower socioeconomic group tend to have higher risk of head and neck cancer.³ The most common malignant salivary gland tumour in our study was Mucoepidermoid carcinoma (6.4%) which is consistent with Vuhahula EA *et al* (2004)¹² study (9.3%) and in Morais ML *et al* (2011)¹³ study (13.9%), Mohammad SI *et al* (2013)¹⁴ study (11.3%). The most common malignant skin tumour was squamous cell carcinoma [9 cases (11.5%)]. The malignant tumour of the head and neck region was observed in this study to be a disease of male preponderance, low socioeconomic and educational status

and peculiarly common among the middle age group (40-60 years) in our environment. The elderly mostly had advanced upper aerodigestive tract malignancies. More than 80% of the head and neck malignancy present in locally advanced stages and carry a poor prognosis and this has remained unchanged over the past 30 years. Surgery followed with post operative radiotherapy is the standard treatment of such patients.

CONCLUSION

To conclude majority of head and neck tumours are common in males than females. The most common malignant tumour is squamous cell carcinoma at oral cavity followed by skin. Association of tobacco and alcohol intake is significant in cases of squamous cell carcinoma of oral cavity. Malignant tumours are common in middle age group. Hematoxylin and Eosin staining remain the best for primary diagnosis. The present study was undertaken to review the recent literature in recognising the clinicopathological criteria for the head and neck tumours and to correlate the histomorphological type of head and neck tumours with clinical parameters of patient in this area.

REFERENCES

1. Davies L. and Welch HG. "Epidemiology of head and neck cancer in the United States." *Journal of Otolaryngology-Head and Neck Surgery*. 2006; 135(3):451-457.
2. Douglas RG. *Diagnostic surgical pathology of the head and neck*. 2nd ed. Saunders Elsevier; 2009.
3. Siddiqui MS, Chandra R, Aziz A, Suman S. Epidemiology and Histopathological Spectrum of Head and Neck Cancer in Bihar, a State of Easter India. *Asian pacific journal of cancer prevention*. 2012; 3(8):3949-3953.
4. Parkins D.M., Pisani P. and Ferlay J. Estimates of the worldwide frequency of eighteen major Cancers in 1985. *Int. J. Cancer*. 1993; 54: 594 -606.
5. Popat VC, Vora D, Shah H. Clinico – Pathological Correlation of Neck Lesions – A Study of 103 Cases. *The Internet Journal of Head and Neck Surgery*. 2010; 4 (2).
6. Onyango JF, Awange DO, Njiru A, Macharia IM: Pattern of occurrence of head and neck cancer presenting at Kenyatta National Hospital Nairobi. *East Afr Med J* 2006, 83:288-91.
7. Baskota DK, Agrawal R, Prasad R, Sinha BK (2005). Distribution of malignancies in head and neck regions and their management. *J Nep Med Assoc*, 44, 68-72.
8. Amusa YB, Olabanji JK, Akinpelu VO, Olateju SO, Agbakwuru EA, Ndukwe N, Fatusi OA, Ojo OS: Pattern of head and neck malignant tumours in a Nigerian teaching hospital—a ten year review. *West Afr J Med* 2004, 23(4):280-285.
9. Savita Lasrado, Prashanth Prabhu, Anjali Kakria, Tanuj Kanchan, Sadip Pant, Brijesh Sathian *et al*. Clinicopathological Profile of Head and Neck Cancers in the Western Development Region, Nepal: A 4-Year Snapshot. *Asian Pacific J Cancer Prev* 2012, 13 (12); 6059-6062.
10. Thapa N, Jha AK, Rijal JP, Shah A (2003). Study on head and neck tumours presented in ENT OPD of Nepal Medical College teaching Hospital. *Nepal Med Coll J*, 5, 79-81.
11. Gupta KK, Grewal BS, Gupta A, Tuli BS. Head and neck cancer in Punjab region- A clinicopathological study. *Indian journal of otolaryngology*.1986 June; 38(2):77-78.
12. Vuhahula EA. Salivary gland tumours in Uganda: clinical pathological study. *Afr Health Sci*. 2004 Apr; 4(1):15-23.
13. Morais Mde L, Azevedo PR, Carvalho CH, Medeiros L, Lajus T, Costa Ade L. Clinicopathological study of salivary gland tumours: an assessment of 303 patients. *Cad Saude Publica*. 2011 May; 27(5):1035-1040.
14. Mohamad SI, Tabassum A, Chatura KR, Malkappa SK, Basavaraja PK. "Histomorphological study of salivary gland neoplasms: A 2 Year Study" *Journal of evolution of medical and dental sciences*. 2013 Jan; 2(4):315-324.

Source of Support: None Declared
Conflict of Interest: None Declared