Pattern of Head and Neck Malignancies in North Eastern India - A Hospital Based Prospective Study

Bonapart Chowdhury[1]

[1]Assistant Professor and HOD, Department of ENT, Shri Ramkrishna Institute of Medical Sciences and Sanaka Hospitals, Durgapur, West Bengal.

ABSTRACT

BACKGROUND

Head and neck malignancy is one of the common cancers worldwide with an increasing number in the subcontinent. Oral cavity is by far the most predominant location in the head and neck region for primary malignant tumours. Metastases to head and neck area can occur either from local structures or from distant organs. In most cases, the head and neck region is the primary site for metastasis**.** In North Eastern part of India, the prevalence was found to be as high as 54.48%. Such high prevalence in this region is indicative of several factors that predispose to HNCA.

METHODS

100 patients with suspected head and neck neoplasm where malignancy was proved by biopsy were included in this study. A detailed history of their socio-cultural background like community, religion, food habit, substance abuse, age, sex, occupation etc. was taken and analysed.

RESULTS

The overall frequency of malignancy was higher in males (70.6%) with male: female ratio 2.4: 1 with highest incidence in 5th to 6th decade. Metastatic neck node was found in 74.13% of patients with occult primary in 1.72% of them. Histologically 74.86% were squamous cell carcinomas. Primary site was predominantly hypopharynx with 39.02% incidence.

CONCLUSIONS

Head and neck malignancies are more common in elderly males in their 5th and 6th decade and majority of these are squamous cell carcinomas which presented as metastatic neck nodes.

KEYWORDS

Head and Neck, Tumour, Squamous, Carcinoma, Node, Metastatic

Corresponding Author:
Dr. Bonapart Chowdhury,
Assistant Professor and HOD,
Department of ENT,
Shri Ramkrishna Institute of Medical Sciences and Sanaka Hospitals, Malandighi, Durgapur- 713212, West Bengal, India.
E-mail: maildrbonapart@gmail.com
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BACKGROUND

The Ramayana, a manuscript of ancient India (Circa 2000 BC), is the first instance in recorded history in which malignant tumours are mentioned. Reference is made in it for the first time to tumour treatment, either with the knife (surgery) or with an arsenical compound (chemotherapy). Hippocrates of Cos (460-375 BC), the father of medicine, was the first to divide tumours into two large groups, one as innocuous and the other as dangerous tumours. Hippocrates mentioned the term "Karkinoma" for solid malignant tumours. This term was derived from Greek; Karkinos meaning "Crab". The term cancer appeared much later, deriving from the Latin word "Cancrum" also denoting "Crab". Malignancy or cancer is a pathologic disturbance of growth in which cells tend to proliferate rapidly and to spread throughout the body so relentlessly that unless successfully treated, they eventually cause death of the host.

Head and neck malignancy one of the common cancer worldwide with an increasing number in the subcontinent. It comprises nearly 30% of all cancers in the subcontinent.[1] The prevalence of HNCA with respect to all other malignancies varies from 9.8% to 42.7%.[2] Oral cavity is by far the most predominant location in the head and neck region for primary malignant tumours.[1] The tongue and floor of the mouth are most common sites of origin for primary squamous cell carcinoma in the oral cavity. Retromolar trigone and buccal mucosa are however, the most frequently encountered primary sites in those parts of the world where tobacco chewing and chewing of betel nuts are prevalent. Other major sites are oropharynx like lip, buccal mucosa, retromolar trigone, tonsils etc; cervical neck node in the form of metastatic disease with primary from hypo pharynx, larynx or other parts of upper aero digestive tract majority of which are squamous cell carcinoma (sq. cell ca) or lymphoma- Hodgkin's & Non-Hodgkin's type. They are also in the form of thyroid malignancies like papillary carcinoma, follicular carcinoma, and anaplastic carcinoma. Salivary gland malignancies where submandibular, parotid and minor salivary glands contribute to the bulk. Malignancies of the nose and paranasal sinuses like carcinoma maxilla, ca nasopharynx etc. is also in the spectrum of head and neck malignancy. Majority of HNCA are histologically squamous cell carcinoma affecting the age group 40-69 years with males outnumbering females (2.9: 1).[2]

One of the most striking qualities of cancer is its spread throughout the body. Metastasis has been defined as the transfer of disease from one organ or part of an organ to another not directly connected to it. Tumoural cells penetrate into vascular or lymphatic channels, providing the opportunity for spread. Metastatic cervical lymph node is the single most important factor affecting prognosis for patients with squamous cell carcinoma. Patients who present with localized disease show excellent prognosis. More than 50% patients have regional spread at presentation. Metastases to head and neck area can occur either from local structures or from distant organs. In most cases, the head and neck region is the primary site for metastasis.[3]

In North Eastern part of India, the prevalence was found to be as high as 54.48%.[1] Such high prevalence in this region is indicative of several factors that predispose to HNCA. The use of tobacco, lime, betel and smoking is a very common oral habit prevalent in this region which may be one of the prominent causes. The exact aetiology of most of the cancers still eludes mankind, many factors like geographical situation, racial and genetic factors, nutritional status, customs, food habits and substance abuse etc. has all been implicated in the causation of cancer. Considering the magnitude of this problem of cancer and its implication to our society, an early diagnosis and treatment plays a vital role in the overall management and to achieve desired survival rate and prognostic prediction.

METHODS

This is a hospital based prospective study conducted over two years. The sample size was calculated as per prevalence data available with an allowance of error of 20% of prevalence and level significance (Type I error) at 5%. Considering 82 as the minimum sample size by this calculation, 100 cases had been included in the study. Patients with suspected head and neck neoplasm where malignancy were proved by biopsy were taken up for this study. A detail history of their socio cultural background like community, religion, food habit, substance abuse, age, sex, occupation etc. was taken and analysed.

RESULTS

The overall frequency of malignancy was higher in males (70.6%) with male: female ratio 2.4: 1 in this study. In the present study, 31% of malignancy were seen in patients aged between 51-60 years, followed by 17.2% in the age group of 31-40 years and 41-50 years both, 15.5% from 61-70 years, 1.72% were >80 years and 3.44% were <20 years.

Metastatic neck node was found in 74.13% of patients with occult primary in 1.72% of them. Papillary and follicular carcinoma thyroid were 12.06% and 5.17% respectively. Histologically 74.86% were squamous cell carcinoma followed by papillary carcinoma in 12.06% of patients. Primary site was predominantly hypo pharynx with 39.02% followed by oropharynx with 31.7%, larynx 19.5%, oral cavity and nasopharynx 4.8% each.

Figure 1

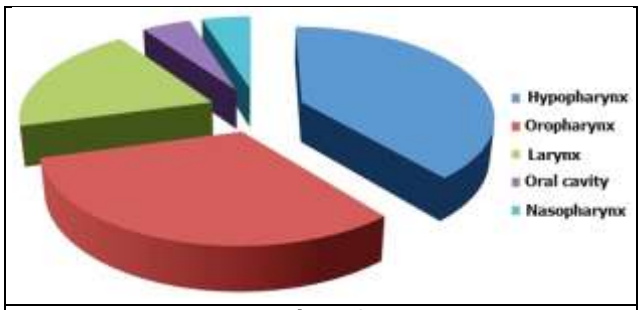

Figure 2

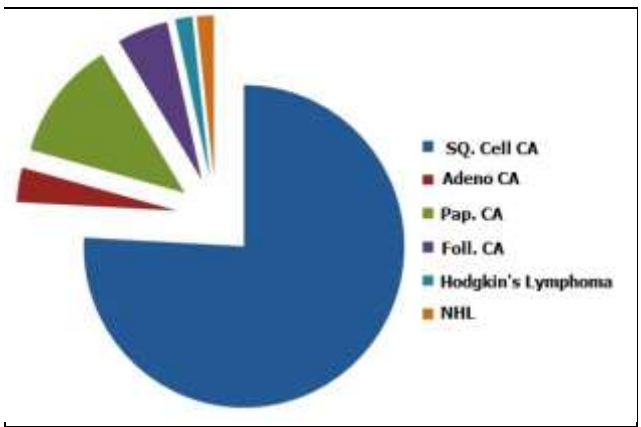

Figure 3

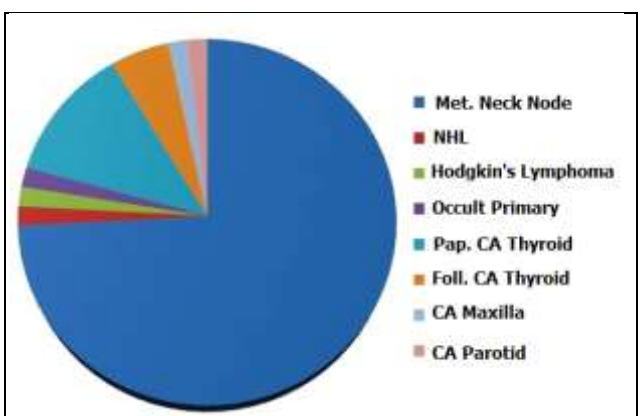

Figure 4

DISCUSSION

The overall frequency of malignancy was higher in males (70.6%) with male:female ratio 2.4:1 in this study. This is in agreement with similar findings of Haque MA, Talukder SI and Steel BJ, Schwartz MR, Ramzy I.[4,5] Bhattacharjee A, Chakraborty A, Purkaystha P have also found that to be 2.9:1 which is of quite similar observation.[1] This study agrees to the fact that the chance of malignancy increases after the age of 55 years as observed by Datta A, Guha T.[6] In the present study, 31% of malignancy were seen in patients aged between 51-60 years, followed by 17.2% in the age group of 31-40 years and 41-50 years both, 15.5% from 61-70 years, 1.72% were >80 years and 3.44% were <20 years. Bhattacharjee A, Chakraborty A, Purkaystha P had observed that commonest age of head and neck malignancy was 6th decade (31.13%) followed by 22.8% in 40-49 years, 18% in 60-69 years and <1% in less than 20 years.[1]

Squamous cell carcinoma is the commonest type (93.29%) in head and neck malignancies[1] which is similar to the findings of the present study where it was 74.86%. As reviewed by Sanderson & Montague, in the cases of malignant cervical lymphadenopathy more than 90% are squamous cell carcinoma. This present study has got similar result where 89.13% of all malignant cervical lymphadenopathy were squamous cell carcinoma followed by adenocarcinoma. These findings are similar to studies conducted by Chhotray and Acharya, Frable WJ, Pilloti et al.[7,8,9] Kline et al found that specific primary site identification was accurate with proper clinical history, examination and investigation. But they also mentioned that with occult primary tumour, errors in specific primary site designation were more frequent.[10] The present study has observed that in case of metastatic cervical lymphadenopathy, primary was most frequent from hypo pharynx (39%), followed by oropharynx (31%), larynx (19.5%), oral cavity and nasopharynx (4.8% each) In this study, primary was found in 97.8% of metastatic cervical neck nodes which is much higher than the finding of Facundo et al where it was 59%.[11]

In case of carcinoma nose and nasopharynx, the mean age of presentation was 35.3 years in one study,[12] where as it was 6th decade in another study.[13] Males are more affected.[12,13] Palpable cervical lymphadenopathy in case of carcinoma nose & nasopharynx were 1%,[13] 5.88%.[14] In the present study, relative prevalence of carcinoma nose & nasopharynx was 3.44% of all Head & Neck malignancies as there were 2 cases of carcinoma nasopharynx and 1 case of carcinoma maxilla. In the present study, relative prevalence of ca nose & nasopharynx was 3.44% of all Head & Neck malignancies. The present study has got a very low incidence of nasopharyngeal carcinoma (NPC) as compared to a similar study in North Eastern India where it is a common entity.[15] Another study from the same region found that NPC accounts for approximately 6.5% of all malignancies over the 5 years.[16] Possible reason for this difference in observation could be racial dissimilarity, ethnicity and genetic factors as the Mongoloid race in this region has shown an increase in NPC incidence (Kumar et al., 2003),[17] which was not the predominant population in the present study. NPC is associated with consumption of smoked meat & fish as these contain volatile nitrosamine which is already known as strong carcinogen and regular intake of smoked meat & fish could be a risk factor in majority of the patients.[16] This could be another reason as this is not much practiced food habit in the study population.

In case of thyroid nodules, 5-10% were malignant in a study by Morris LF, Ragavendra N, Yeh MW[18] whereas it was 34.48% in the present study. This may be due to the fact that it was not a 'thyroid only' study and specific opinion regarding thyroid nodules is not possible from such small number of thyroid swelling samples. The rate of malignant lesions out of all salivary gland tumours were found to be 15-32%.[19,20] As in the present study there was only 1 case of salivary gland malignancy in the form of squamous cell

carcinoma of parotid, any opinion in this regard is not possible. So, due to low relative prevalence of thyroid and salivary gland malignancies, no specific opinion is possible from this study.

CONCLUSIONS

Head and Neck malignancies are more common in elderly males in their 5th and 6th decade and majority of these are squamous cell carcinomas which presented as metastatic neck nodes.

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