



SPECTRUM OF MALIGNANT LESIONS IN HEAD AND NECK REGION: A TERTIARY CARE HOSPITAL BASED STUDY FROM NORTH EAST INDIA

Pathology

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ABSTRACT

Introduction: Most head and neck region malignancies arise in the epithelium of oral cavity, larynx, pharynx, nasal cavity and paranasal sinuses. Most of head and neck carcinomas are squamous cell carcinoma. It is the 6th most common carcinoma in the world according to Union for International Cancer control. AIM: To evaluate the spectrum of malignant lesions in head and neck region and to look for the associated risk factors.

Methodology: A one year retrospective study was carried out in the Department of Pathology in collaboration with the Department of ENT, from Feb 2022 to Jan 2023, where 140 paraffin embedded tissue blocks of head and neck biopsies were collected from the archives of the department.

Results: A total 140 cases were included of which 104 (74.3%) were males and 36 (25.7%) were females. Male to female ratio = 2.8:1. The most affected age group is 51-60 years. The most important risk factor is betel nut consumption followed by tobacco chewing. The most common site involved is the oropharynx followed by tongue. Most of the carcinomas are moderately differentiated squamous cell carcinomas. **Conclusion:** Head and neck malignancies are quite common in Northeastern region of India, so we have performed this study to evaluate the spectrum of malignant lesions in head and neck region. Its association with risk factors are also studied for the prevention, early detection, early treatment intervention and withdrawal from risk habits for improving the wellbeing of the people in the society.

KEYWORDS

Squamous cell carcinoma, oropharynx, pyriform sinus, larynx, pharynx.

INTRODUCTION:

Carcinoma of Head and neck region is the 6th most common carcinoma in the world and a leading cause of morbidity and mortality according to Union for International Cancer control. (1) The worldwide incidence of head and neck malignancy cases is 53,000 and 10,860 deaths each year as per 2019.(1,2) In a statistical data from India, its incidence is found to be 30 per 100,000 population, male to female ratio ranging from 2:1 to 4:1.(1) More than 90% head and neck carcinomas are squamous cell carcinoma. (3) Development of Head and Neck Squamous Cell Carcinoma is a multifactorial and multistep process. Head and neck squamous cell carcinoma specially oral carcinoma, has a significant association with tobacco and alcohol consumption as well as with several strains of HPV.(4,5) Consumption of tobacco and areca nut (pan/gutka) are quite extensive in South-East Asia including India, hence oral squamous cell carcinoma is most prevalent in this part of world. Hence, we have carried out this study to see the spectrum of malignant lesions in Head and Neck region.(6,7)

MATERIALS AND METHODOLOGY:

A one year retrospective study was conducted in the Department of Pathology in collaboration with the Department of ENT from Feb 2022 to Jan 2023, where a total of 140 paraffin embedded tissue blocks of Head and Neck biopsies were collected and studied from the archives of the department.

Inclusion Criteria:

All the biopsies from head and neck region, of both the genders and all the age groups were included.

Exclusion Criteria:

Biopsies with no viable tissue or with no representative areas were excluded. Thyroid lesions were also being excluded from the study.

Following the inclusion and exclusion criteria, a total of 140 cases were included in the study.

RESULTS:

Table 1: Distribution Of Age And Gender:

AGE GROUP	MALE	FEMALE	TOTAL (n=140)
21-30	2	0	2(1.5%)
31-40	17	5	22(15.7%)
41-50	18	8	26(18.6%)
51-60	38	14	52(37.1%)
61-70	21	9	30(21.4%)
71-80	8	0	8(5.7%)
Total	104(74.3%)	36(25.7%)	140 (100%)

In the present study, it was found that of the total 140 cases, 104 (74.3%) were males and 36 (25.7%) were females. Male to female ratio = 2.8:1. The most affected age group is 51-60 years, consisting of 37.1% of the total cases, followed by 21.4% cases in the age group of 61-70 years.

Table 2: Distribution Of Risk Factors (Habits):

HABIT	MALE (n=104)	FEMALE(n=36)	TOTAL(n=140)
Betel nut	27(26%)	16(44.4%)	43(30.8%)
Tobacco chewing	29(27.8%)	7(19.4%)	36(25.7%)
Smoking	28(27%)	3(8.4%)	31(22.1%)
Alcohol	16(15.4%)	7(19.4%)	23(16.4%)
None	4(3.8%)	3(8.4%)	7(5%)

Out of total 140 patients having head and neck squamous cell carcinoma, most of the patients consume Betel Nut (30.8%), followed by Tobacco chewing (25.7%). Out of 104 male patients, most of them(27.8%) are Tobacco chewers followed by Smokers (27%). However, Betel Nut consumption was the main risk factor for women (44.4%), followed by tobacco chewing and alcohol (19.4% each) considering all 36 females under study.

Table 3: Distribution Of Location Of Carcinoma:

LOCATION	MALE	FEMALE	TOTAL
Oropharynx	21	7	28(20%)
Tongue	17	6	23(16.4%)
Larynx	18	4	22(15.7%)
Hypopharynx	12	4	16(11.4%)
Buccal mucosa	11	3	14(10%)
Palate	9	5	14(10%)
Gingivo-buccal sulcus	7	3	10(7.2%)
Lip	6	2	8(5.8%)
Nose and Nasopharynx	3	2	5(3.5%)

N.B. 1. Oropharynx included carcinomas of Tonsil, Vallecula, Uvula, Retromolar trigone and Anterior pillar. 2. Larynx included carcinomas of Epiglottis, Aryepiglottic fold, vocal cord and any other structures of Larynx. 3. Hypopharynx included carcinomas of Pyriform sinus and Posterior Pharyngeal wall. Out of 140 cases, most of the carcinomas occur in Oropharynx (20%), followed by carcinoma of Tongue (16.4%) and Larynx (15.7%). Carcinoma of Oropharynx is most common carcinoma in both males and females.

Table 4: Distribution Of Grading:

GRADING	MALE	FEMALE	TOTAL
WD SCC	36	8	44(31.4%)

MD SCC	52	24	76(54.3%)
PD SCC	16	4	20(14.3%)

[N.B: WD SCC: well differentiated squamous cell carcinoma, MD SCC: moderately differentiated squamous cell carcinoma, PD SCC: poorly differentiated squamous cell carcinoma.]

Of the 140 cases, moderately differentiated squamous cell carcinoma (54.3%) is the most common cancer type followed by well differentiated squamous cell carcinoma(31.4%) in both the sexes.

PHOTOGRAPHS:

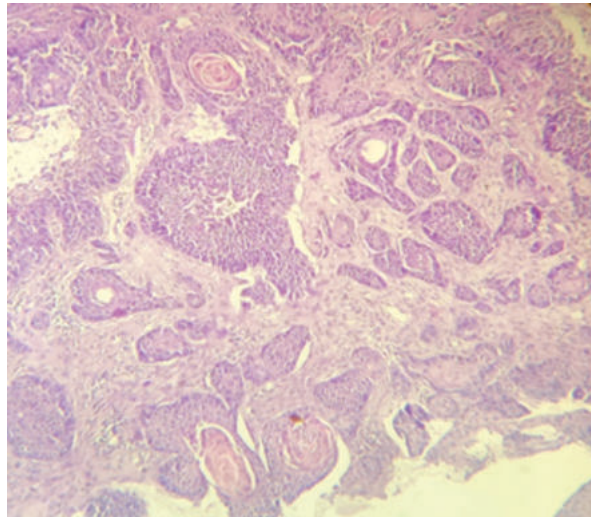


Fig 1: Pictomicrograph Showing Well Differentiated Squamous Cell Carcinoma (10X)

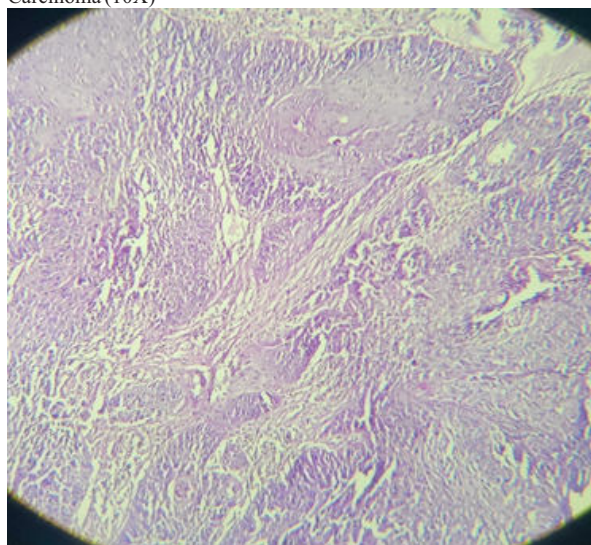


Fig 2: Pictomicrograph showing moderately differentiated squamous cell carcinoma (10X)

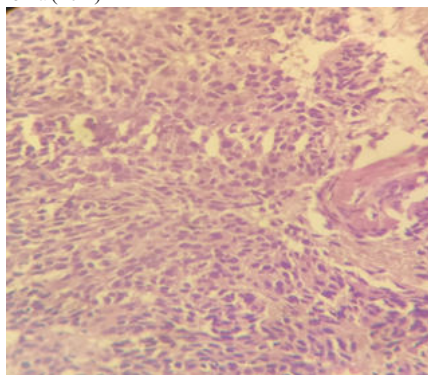


Fig 3: Pictomicrograph showing poorly differentiated squamous cell carcinoma (10X)

DISCUSSION:

The present study is carried out to study the spectrum of head and neck malignant lesions in this region and to look for the associated risk factors. The study was conducted on 140 paraffin embedded tissue blocks collected from the archives of the department of pathology.

Comparative Analysis Of Age Distribution:

In our present study, most of the patients having head and neck squamous cell carcinoma are in the age group of 51-60 years, followed by the age group of 61-70 years. **Naz S et al**(2015)(8) found the mean age to be 56 years (range=42-86). **Gatoo MA et al**(2018) (9) found that maximum incidences of head and neck squamous cell carcinoma occur in the age group of 50-75 years. **Sharma JD et al**(2019)(10) in their study found that the median age for younger patient was 34- 35 years while in older patients it was 41- 42 years. So our study is in concordance with the study conducted by **Naz S et al** (2015) (8) and **Gatoo MA et al** (2018) (9). However the study carried by **Sharma JD et al**(2019) (10) show the prevalence of cancer in age groups younger than our study.

COMPARATIVE ANALYSIS OF GENDER ANALYSIS:

In our study; out of 140 cases, 104 are male and 36 are females, showing a male predominance. Male to female ratio is 2.8 :1. **Chidzonga MM et al** (2006) (11) found male to female ratio to be 2:1. **Gatoo MA et al** (2018) (9) found the male to female ratio 3:1 in his study. All the study shows a male preponderance which correlates with our present study.

COMPARATIVE ANALYSIS OF DISTRIBUTION OF PERSONAL HABITS:

In our study, out of total 140 patients having head and neck squamous cell carcinoma, most of the patients consumed Betel Nut (30.8%), followed by Tobacco chewing (25.7%). Amongst male patients, most are (27.8%) Tobacco chewers followed by Smokers (27%). However, Betel Nut consumption was the main risk factor for women (44.4%), followed by tobacco chewing and alcohol (19.4% each). **Balaram Pet al** (2002)(7) showed that 59% man and 90% women practice the habit of pan chewing in India. 53% patients were smokers and 32% drink alcoholic beverages. **Gatoo MA et al** (2018) (9) found a significant relationship pan and tobacco chewing habit and oral squamous cell carcinoma in Indian Population.

COMPARATIVE ANALYSIS OF DISTRIBUTION OF LOCATIONS:

Out of 140 cases, most of the carcinomas occur in Oropharynx (20%), followed by carcinoma of Tongue (16.4%) and Larynx (15.7%). Carcinoma of Oropharynx is most common carcinoma in both males and females. **O'Regan EM et al** (2006)(12) showed that carcinoma of oropharynx is most common in people >40 years of age and carcinoma of tongue is most common in people. So, our study shows that oropharynx is the most common site of head and neck squamous cell carcinoma, which correlates with the study carried by **O'Regan EM et al**. Many other studies like **Falaki F et al**(2011)(13) and **Fan Y et al** (2014) (14) found that tongue is the most common site, which occupies second most position in our study. This difference may be due to difference in environmental and habitual characters.

COMPARATIVE ANALYSIS OF GRADING OF TUMOUR:

Of the 140 cases, moderately differentiated squamous cell carcinoma (54.3%) is the most common cancer type followed by well differentiated squamous cell carcinoma(31.4%) in both the sexes. **Iamaroon A et al**(2004)(15) and **Kaur J et al**(2017) (16) also found that most carcinomas were moderately differentiated squamous cell carcinoma, which correlated with our study. However, **Chidzonga MM et al**(2006)(11) and **Dragomir LP et al** (2012)(17) found that most carcinomas are well differentiated carcinomas and were discordant with our findings.

CONCLUSION:

Squamous cell carcinoma of the head and neck region is one of the most prevalent carcinomas in elderly age group (51-60 years) with male preponderance, being mostly prevalent in people consuming Pan or in Tobacco chewers. Oropharynx is the most common site for occurrence of head and neck SCCs and these tumours have increased rates of recurrence. However, early detection followed by appropriate management can aid in lowering the disease progression to advanced stages.

CONFLICTS OF INTEREST: NONE

FUNDS: NONE

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