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Original article

An epidemiological study of 270 cases of carcinomas of the head and neck region in a Nigerian tertiary health care facility

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ABSTRACT

Introduction: Oral cancer is the sixth most frequently occurring malignant tumor and is the major cause of morbidity and mortality with high metastatic and invasive tendency. The incidence of oral cancer differs widely in various parts of the world with a range of 2–10 per 100,000 populations per year, approximately 300,000 new cases. Incidence and mortality as a result of oral cancer are higher in developing countries when compared to developed countries. This is the reason for the occurrence of the peak age in later decades of life.

Patients and methods: All consecutive cases of histologically diagnosed cases of orofacial carcinomas seen at the Maxillofacial Unit, Ahmadu Bello University Teaching Hospital, Shika, Zaria, Nigeria over a 10 year period were retrospectively analyzed.

Results: Over the study period, a total of 1116 cases of maxillofacial conditions were seen in the unit out of which 270 represented orofacial cancers, giving a prevalence of 24.19%. Of the 270 cases, male accounted for 159(58.9%) while females were 111(41.1%) giving a male to female ratio of 1.43:1. The age ranged from 5 to 90 years, mean (SD), 48.4(16.12) years and patients in the 4th to 6th decades (47.7%) were mostly affected. There was no gender difference in terms of distribution of the tumors according to age.

Conclusion: Squamous cell carcinoma of the orofacial region has continued to pose great challenges to care givers and practitioners involved in their management.

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1. Introduction

Head and neck tumours constitute a wide spectrum of heterogeneous tumours affecting different anatomical sites in the head and neck region, with varying histology and biological behaviors. The different sites include sinonasal, nasopharyngeal, parapharyngeal, oral and oropharyngeal, hypopharyngeal, laryngeal, otologic, orbital, thyroid and parathyroid, and salivary gland tumours.[1] Malignancies in the head and neck region though relatively rare, compared to other regions of the body, contribute significantly to morbidity and mortality in affected patients.[1]

Oral cancer is the sixth most frequently occurring malignant tumor and is the major cause of morbidity and mortality with high metastatic and invasive tendency. The incidence of oral cancer differs widely in various parts of the world with a range of 2–10 per 100,000 population per year, approximately 300,000 new cases.[2–4] Incidence and mortality as a result of oral cancer are higher in developing countries when compared to developed countries.[3] his is the reason for the occurrence of the peak age in later decades of life.[2] However, recent reports from Europe and America have reported an increase in incidence and mortality in young men.[5,6] According to the latest World Health Organization (WHO) data recorded in 2010, the death rate due to oral cancer in the Middle East is reported to be approximately 2 in 100,000, which is much lower than that in India and in the United States.[3]

Squamous cell carcinomas (SCCs) of the lip and oral cavity comprise 90–95% of all oral malignancies. Hidden regional metastasis in oral squamous cell carcinoma (OSCC) is prevalent in at least

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30% of patients.[3] Clinical examination alone is proven to be unreliable in detecting such regional metastasis. Identification of regional metastasis and early intervention could decrease mortality rates. Improved diagnostic modalities are required not only to detect regional disease but also to decrease post-operative morbidity and mortality.[3] The overall 5-year survival rate for all stages of oral cancer is 60%. These rates are better for localized tumours (82.8%) as compared to tumours with regional (51.8%) or distant metastases (27.8%).[7]

Oral cancer is said to be rare among African and poorly documented with reports of 1.2% and 2.7% in Southwest and Northwest Nigerian but it has been suggested that rates may be under reported.[8,9]

This paper is aimed at studying the pattern of presentation of 270 cases of cancers of the head and neck region in a Nigerian population, and to compare our findings with previously published reports from other parts of the world.

2. Patients and methods

All consecutive cases of histologically diagnosed cases of carcinomas involving the head and neck region seen at the Maxillofacial Unit, Ahmadu Bello University Teaching Hospital, Shika, Zaria, Nigeria over a 10 year period (2004–2014) were retrospectively analyzed. Information obtained included demographics, sites, and histopathological diagnosis .The data were analyzed using the statistical package for social sciences (SPSS, version 13, Illinois, USA). Continuous variables were analyzed using mean and standard deviations while discrete variables were presented as frequencies and percentages and cross tabulations where appropriate. Statistical significance was set at a P value of <.05.

3. Results

Over the study period, a total of 1116 cases of maxillofacial conditions were seen in the unit out of which 270 represented head and neck cancers, giving a prevalence of 24.19%. Of the 270 cases, male accounted for 159(58.9%) while females were 111(41.1%) giving a male to female ratio of 1.43:1. The age ranged from 5 to 90 years, mean (SD), 48.4 (16.12) years and patients in the 4th to 6th decades (47.7%) were mostly affected. Table 1 shows the distribution of patients with malignant tumours according to age and gender. There was no gender difference in terms of distribution of the tumors according to age (X^2 = 10.858, df = 8, P = .210) in Table 1.

Squamous cell carcinoma (SCCa) was the most predominant cancer (n = 173/270; 64.1%) followed by adenoid cystic carcinoma (n = 44/270; 16.3%), mucoepidermoid carcinoma (n = 17/270; 6.3%) and metastatic carcinoma (n = 10/270; 2.7%) in that order. Overall, there was a significant gender (P = .001) distribution with higher frequencies of occurrence observed among males for squamous cell carcinoma, mucoepidermoid and metastatic carcinoma; while adenoid cystic carcinoma, adenocarcinoma, and nasopharyngeal carcinoma were more frequently seen in females than in males (Table 2). About 152(87.8%) cases of the SCCa had histologic subtypes with 60.5% being well differentiated, 29.6% moderately differentiated and 9.8% poorly differentiated. The maxillary antrum (n = 43/270; 15%) was the most frequently involved anatomical site and this was closely followed by the palate (n = 38/270; 14.1%) and the mandible (n = 36/270; 13.3%). The other anatomic distribution of the lesions is as presented in Table 2. The distribution of the tumours according to gender was not significant (P = .321).

There was a wide age distribution of the tumors with the 4 th to 6 th decades accounting for majority of the cases, but this distribution was not significant (Table 3). All the patients had based line investigations of hematological, chemical pathology, and histopathology. They also did plain radiographs of the jaws and chest for metastasis; but for financial reasons none of our patients did CT Scan or MRI.

Table 1
Age and sex distribution of 270 patients with malignant tumors in Kaduna, Nigeria (2004–2014).

Age group (Years)	Female	Male	Total (%)
1–10	2	0	2 (0.74)
11–20	4	8	12 (4.4)
21–30	14	16	30 (11.1)
31–40	24	28	52 (19.3)
41–50	17	39	56 (20.7)
51–60	33	40	73 (27.0)
61–70	9	16	25 (9.3)
71–80	6	12	18 (6.7)
81–90	2	0	2 (0.74)
Total	111	159	270 (99.9)
X^2 = 10.858, df = 8, P = 0.210			

4. Discussion

The most prevalent carcinoma involving the head and neck in this series was SCCa with 64.1%, which was higher than the 38%, 42.86% and 57.7% in previous Nigerian studies[2,10,11] a much lower result compare to 77–92% seen in other countries.[3,12] The M:F ratio was 2.03:1 which was lower than 2.04:1 in same centre by Adekeye et al.[10] but lower than the 4.13 in UAE and 3:1 refer to from Brazil and Sri Lanka but similar to that quoted from Iraq but higher than 1.77:1 cited from Jordan, 1.66:1 in Libya, and 1.2:1 in Pakistan.[3,12,13] Gender is not a risk factor.

The age ranged from 5 to 90 years, mean (SD), 48.4 (16.12) years. The mean was higher than 45 years from Adekeye et al.[10] same centre but lower than 50.36 years in Pakistan, 54.9 years in UAE, 55 years in India[3,13,14] and 54 and 57 years in Nigeria.[12,15] The width of the age range was similar to those of other authors.[3]

In recent years, increasing trends of oral cancer in younger people have generated interest in several regions of the world. The etiology could be early indulgence in tobacco or alcohol consumption. Highest odds ratios for oral cancer were associated with commencement of smoking before the age of 16 years.[3] Interestingly, young never-smokers and never-drinkers were diagnosed with SCCa, herein a link with human papillomavirus was suggested by Raeefe and Kamis.[3] However, variations exist in the cutoff point defined for young people. In our series 35.5% were 40 years and below which was comparable to previous results from Southwest Nigeria.[16] Lower results were presented elsewhere 13% to 17%.[3]

Numerous studies defined young people as 40 years and below. About 35% of patients in this study were below 40 years. This was higher than the 26% in UAE by Raeefa and Kamis.[3] The diagnosis of cancer at a younger age indicates the need to biopsy suspicious oral lesions to rule out malignancy in patients as young as in their second or third decade of life.[3]

The maxillary antrum (n = 43/270; 15%) was the most frequently involved anatomical site and this was closely followed by the palate (n = 38/270; 14.1%) and the mandible (n = 36/270; 13.3%). While gingivae were the predominant site in Southwest Nigeria, the tongue was the most common site in UAE, Libya, India and Pakistan.[3,12–14] Lasisi et al.[11] also found the maxillary region to be most involved with 25% even though higher than the 15% we got. Adekeye et al.[10] same centre found the lip and gingivae to be the most common sites.

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