

PATTERN OF HEAD AND NECK CANCER PRESENTATION AND MANAGEMENT IN A TERTIARY HOSPITAL IN OWERRI, SOUTH-EAST NIGERIA. A 5 YEAR REVIEW.

By

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ABSTRACT

Background: Head and neck cancers are increasingly becoming a prominent part of oncological practice in Nigeria owing partly to the advances made in this area of practice. Tumours of the head and neck region make up about 5-30% of all tumours in the body and often carry a burden that impacts humans physically, socially, financially and psychologically with a lot of challenges in their management. This study aimed at evaluating the pattern of presentation and treatment of head and neck cancers seen in Federal Medical Centre, Owerri between January 2015 to December 2019.

Materials and methods: The study is a retrospective analysis of all head and neck cancer cases that presented to the ENT Department of Federal Medical Centre Owerri over 5 years. Data was extracted from patients' case files and analyzed with SPSS version 25.0.

Results: Fifty three (53) patients were analyzed with a M:F ratio of 1.3:1. Mean age of patients was 53.5 ± 14.0 years with mean duration of presenting complaints being 12.2 ± 9.2 months. The commonest site of cancers was the larynx (26.4%) while the commonest histological diagnosis was Squamous cell carcinoma (54.7%). Majority of patients (94.4%) presented with advanced disease (stages 3 and 4). CT Scan was done in 92.5% of patients and the commonest modality of treatment was surgery (35.8%). About 24.5% of patients did not attend follow up clinics after treatment, 45.3% defaulted from follow up before 6 weeks, 5.7% died within 6 weeks of treatment and 15.1% had satisfactory outcome at 6 weeks post treatment.

Conclusion: Federal Medical Centre, Owerri in recent times has treated a significant number of head and neck cancer patients and the case profiles mirror those of similar tertiary institutions. The challenges facing the management of these cases include late presentation, financial paucity, poor social support system and poor follow up culture.

INTRODUCTION

Head and neck cancers are increasingly becoming prominent in oncological practice in Nigeria owing partly to the advances made in this area of practice. Tumours of the head and neck make up 5-8% of tumours of the entire body in Europe and America. In India, this figure is as high as 30%. In Nigeria, the prevalence varies relatively widely from 6.2% in southern Nigeria to 30% in Northern Nigeria. Worthy of note is that these figures were essentially derived from hospital based studies and as such may represent only a tip of the iceberg of the real burden of disease. This observation notwithstanding, up to half a million cases of head and neck tumours are diagnosed yearly worldwide and a significant proportion of these are in developing countries. Management of head and neck tumours in Africa and Nigeria in particular is still faced with many challenges due to paucity of treatment facility and widespread ignorance of the nature of the diseases leading to late hospital presentation. The aim of this study was to evaluate the pattern of presentation of head and neck cancers that presented to Federal Medical Centre, Owerri between January 2015 to December 2019 as well as treatment given.

MATERIALS AND METHODS

The study was a retrospective analysis of all head and neck tumour cases that presented to the Ear, Nose and Throat/Head and Neck (ENT/HNS) Department of Federal Medical Centre, Owerri in South-Eastern Nigeria between January 2015 and December 2019. The case files of all the patients were retrieved from the records department then data extracted and analyzed with SPSS software version 25.0. The data analyzed include the socio-demographic characteristics of the patients, presenting complaints and their duration, tumour site, histological diagnosis, treatment given and general outcome. The results were represented in tables. Statistical significance was set at $p < 0.05$.

RESULTS

A total of 53 patients were diagnosed with malignant tumours of the head and neck region (excluding ophthalmological, neurosurgical and oral tumours) over the period. This comprised 30 males and 23 females with a male to female ratio of 1.3:1. The ages of the patients studied ranged from 22 to 85 years with a mean age of 53.5 ± 14.0 years. Majority of the patients (94.3%) were Igbos while 100% of them were Christians. The largest proportion of the patients (39.6%) had tertiary level of education while 34.0% and 18.9% had secondary and primary levels of education respectively.

Table 1: Level of education and gender of the patients.

		Sex		Total (%)
		Male	Female	
Level of Education	Tertiary	10	11	21(39.6)
	Secondary	12	6	18(34.0)
	Primary	6	4	10(18.9)
	None	2	2	4(7.5)
Total		30	23	53(100.0)

$$X^2=1.550. \quad p=0.671.$$

The mean duration of presenting complaints prior to presentation was 12.2±9.2months. Majority of the patients (41.5%) presented after 2-6 months of symptoms.

Table 3: Duration of complaints of patients prior to presentation.

		Sex		Total(%)
		Male	Female	
Duration of presenting complaints	<2months	3	1	4(7.5)
	2-6months	9	13	22(41.5)
	7-12months	12	6	18(34.0)
	13-24months	4	0	4(7.5)
	25-48months	1	2	3(5.7)
	>48months	1	1	2(3.8)
Total		30	23	53(100.0)

$$X^2=7.263. \quad p=0.202.$$

The commonest presenting complaint was hoarseness (26.4%) while the least common was unilateral nasal obstruction (5.7%).

Before presentation, 54.7% of patients had presented to a peripheral centre before being seen at our facility. A smaller proportion of the patients (41.5%) presented on referral from a peripheral centre.

Table 4: Presenting complaints and referral status of patients.

		Referral status		
		Referred	Not referred	Total (%)
Presenting complaints	Unilateral nasal obstruction	1	7	8(15.1)
	Bilateral nasal obstruction	2	1	3(5.7)
	Epistaxis	3	2	5(9.4)
	Hoarseness	7	7	14(26.5)
	Dysphagia	3	3	6(11.3)
	Neck swelling	2	3	5(9.4)
	Cheek swelling	3	3	6(11.3)
	Others	1	5	6(11.3)
Total		22	31	53(100.0)

$\chi^2=6.561, p=0.476$

Co-morbidities were found in 75.5% of the patients with hypertension being the commonest co-morbidity (39.6%). The predominant tumour site was the larynx(26.4%) while the least common sites were the parapharynx and thyroid gland (3.8% each).

Table 5: Tumour sites of the patients.

		Sex		Total (%)
		Male	Female	
Tumour site	Larynx	12	2	14(26.4)
	Sinonasal space	6	5	11(20.8)
	Nasopharynx	7	1	8(15.2)
	Parotid	1	4	5(9.4)
	Hypopharynx	0	4	4(7.5)
	Esophagus	2	1	3(5.6)
	Submandibular gland	2	2	4(7.5)
	Thyroid	0	2	2(3.8)
	Parapharynx	0	2	2(3.8)
Total		30	23	53(100.0)

$\chi^2=25.385, p=0.001$

Computerized tomography scan (CT Scan) was done in 49 (92.5%) of the patients with 7.5% doing other forms of radiological investigations.

Table 6: Radiological investigations done on the patients.

		Sex		Total(%)
		Male	Female	
Radiological investigation	CT Scan	29	20	49(92.5)
	Plain X-ray	0	1	1(1.9)
	Ultrasound scan	0	1	1(1.9)
	Barium studies	1	1	2(3.7)
Total		30	23	53(100.0)

$\chi^2=2.933$. $p=0.569$.

The commonest histological diagnoses made were squamous cell carcinoma (54.7%), adenocarcinoma (9.4%) and lymphoma (7.5%).

Table 7: Histological diagnosis of the patients' tumours

		Sex		Total(%)
		Male	Female	
Histological diagnosis	Squamous cell carcinoma	24	5	29(54.7)
	Adenocarcinoma	0	5	5(9.4)
	Lymphoma	1	3	4(7.5)
	Sarcoma	1	1	2(3.8)
	Mucoepidermoid carcinoma	2	1	3(5.7)
	Adenoid cystic carcinoma	0	3	3(5.7)
	Acinic cell carcinoma	1	0	1(1.8)
	Verrucous carcinoma	0	3	3(5.7)
	Others	1	2	3(5.7)
Total		30	23	53(100.0)

$\chi^2=27.258$. $p=0.001$.

Majority of patients (94.4%) presented with advanced disease (stages 3 and 4).

Table 8: Stages of tumours of the patients.

		Sex		Total(%)
		Male	Female	
Tumour stage	Stage I	0	0	0(0)
	Stage II	1	2	3(5.6)
	Stage III	11	7	18(34.0)
	Stage IV	14	18	32(60.4)
Total		26	27	53(100.0)

The commonest treatment modality was surgery in 19 patients (35.8%) while 18 (34.0%) were treated with combined chemotherapy and radiotherapy.

Table 9: Treatment modalities offered to the patients.

		Sex		Total(%)
		Male	Female	
Treatment modality	Surgery	12	7	19(35.8)
	Combined Surgery/Radiotherapy	2	6	8(15.1)
	Combined Chemoradiation	11	7	18(34.0)
	Surgery + Chemoradiation	5	3	8(15.1)
	Total	30	23	53(100.0)

$$\chi^2 = 7.146, p = 0.210.$$

Below is a table of the outcome of patients 6 weeks after treatment.

Table 10: Profile of outcome of the patients 6 weeks after treatment.

		Sex		Total
		Male	Female	
Patient's outcome	No follow up	8	5	13(24.5)
	Satisfactory/cure	3	5	8(15.1)
	Persistent disease	3	2	5(9.4)
	Death	2	1	3(5.7)
	Lost to follow up	14	10	24(45.3)
Total		30	23	53

$$\chi^2 = 3.699, p = 0.594.$$

DISCUSSION

Socio-demographic Characteristics

This study analyzed a total of 53 patients who had head and neck cancers over a 5-year period and found slight male predominance with a male to female ratio of 1.3:1. The difference was not statistically significant ($p = 0.095$). This figure is in agreement with similar studies notably by Forae et al, Akinshipo et al and Kanu et al. A systematic review by da Lilly-Tariah et al also found M:F ratio ranging from 1.1:1 to 2.3:1 after reviewing 27 publications on the subject. The reason for this pattern is not known however, it may partly be due to the overwhelming preponderance of the male gender in laryngeal cancers which have widely been reported to be among the commonest head and neck cancers in this part of the world." The mean age of patients in this study (53.5±14.0 years) was slightly higher than those found by other workers; Erinoso et al found 39.6±21.1 years, Adeyemi et al found 43.8±19.6 years, Fomete et al found 48.4±16.2 years and Kodiya et al found 35.5±20.1 years. These slight discrepancies may have been accounted for by the fact that some of these studies recorded patients as young as 3 months, 2 years and 5 years whereas the youngest patient in this study was 22 years old. In the study by Adeyemi et al, cancers in children accounted for 2.4% of all head and neck cancers and this could have played a role in the relatively lower mean age of their patients. Notably, some other similar studies recorded peak prevalence amongst patients between the 4th and 5th decades of life. An overwhelming majority of the patients in this study (94.3%) were Igbos. This is not by any means surprising as the study was carried out in an Igbo dominated location. Whereas there is scientific evidence of ethnicity playing a role in the development of certain cancers, it remains to be known if the same was the case in this study. The role of genetics or ethnic origin on cancers of the head and neck is beyond the scope of this study.

Presenting features

The patients studied in this research presented in most cases with common symptoms of head and neck cancers. Because these patients presented to the specialist's clinics either directly or by referral, they got focused clinical assessment by trained and competent specialists who promptly identified the clinical features necessary to diagnose head and neck tumours. The commonest presenting symptoms include hoarseness (26.4%), nasal obstruction (20.8%), dysphagia, cheek swelling (11.3% each), neck swelling and epistaxis (9.4% each). This pattern is in keeping with patterns found by similar work where sinonasal and laryngeal malignancies were found to be predominant. The mean duration between onset of symptoms and presentation in this study was 12.2 ± 9.2 months with majority of the patients (34.0%) presenting after 7-12 months of suffering the symptoms. In addition, only 41.5% had prior medical consultations and referrals before being seen at the ENT clinic. This suggests that the diseases had lingered long enough to be considered advanced at presentation. This late pattern of presentation was also reported in studies by Okwor et al and in a systematic review by da Lilly-Tariah et al.

Tumour sites/Clinical diagnosis

Majority of the cancers were located in the larynx (26.4%), sinonasal region (20.8%) and the nasopharynx (15.1%) while the thyroid and the parapharynx had the lowest proportion with 3.8% each. A systematic review of 27 publications on head and neck cancers found the nasopharynx to be the commonest site followed by the sinonasal region and the larynx. Similar pattern was identified by Nwawolo et al, however Ologe et al in Ilorin found a low prevalence for the larynx (ranking 4th with 4.5%). The reasons for these differences are not clearly known, however variation in social behaviours such as smoking and alcohol intake between geographical regions are thought to play a role. This study found significant male predominance when laryngeal cancer alone was considered with M:F ratio of 6:1. This pattern has been widely reported in this part of the world and has been attributed largely to social practices such as smoking and alcohol intake which are commoner among men. Similar trend applies for nasopharyngeal carcinoma with a M:F of 7:1 seen in this study.

Computerized tomography (CT) scan was done for 49 (92.5%) of the patients for the purpose of diagnosis and staging of the tumours. The other 4 (7.5%) patients had other forms of radiological investigations.

Two of these were indigent and could not afford CT scans therefore had X-ray and ultrasound scan in lieu. This underscores some of the challenges faced by clinicians in resource-poor setting while managing head and neck cancers.

Tumour type/Histological diagnosis

By far, the predominant cancer found in this study was squamous cell carcinoma accounting for 54.7% of all cases. This was followed by adenocarcinoma (9.4%), lymphomas (7.5%) and adenoid cystic carcinoma (5.7%). The rarer tumours include sarcomas (3.8%) and Acinic cell carcinoma (1.9%). This pattern reveals that an overwhelming majority (83.0%) of head and neck cancers in this study are of epithelial origin which largely mirrors many of similar studies in Nigeria such as those reported by Nwawolo et al (carcinomas 91.0% and sarcomas 6.6%), Forae et al (carcinomas 83.4%, lymphomas 7.7% and sarcomas 3.5%), Akinshipo et al (carcinomas 70.0%, sarcomas 15.0% and sarcomas 15.0%) and Ologe et al (carcinomas 70.8%, lymphomas 20.2% and blastomas 9.0%). The predominance of epithelial cancers is understandable considering that majority of the surfaces of the upper aerodigestive tract where tumourigenesis generally occurs are lined by squamous cell epithelium. Furthermore, a Nigerian meta-analysis of head and neck cancers found majority of the tumour to be of epithelial origin.

Tumour stage

The cases were graded using the TNM group staging (UICC/AJCC) models and 34.0% were found to be stage 3 while 60.4% were stage 4. Combined, stages 3 and 4 (advanced disease) made up 94.4% of all cases. Similar results were obtained by workers such as Okwor et al in Ibadan, Nigeria (combined stages 3 and 4 accounting for 87.5% of all head and neck cancers) and da Lilly-Tariah and colleagues in a systematic review of 27 Nigerian studies on the pattern of head and neck cancers. These findings underscore the delayed presentation often experienced in sub-Saharan/tropical African setting and brings to fore the challenges faced by clinicians managing head and neck cancers in this part of the world. Poor health knowledge and lack of well-equipped primary health care centres may be factors responsible for late presentation of head and neck cancers in Nigeria. More elaborate studies aimed at ascertaining these factors are desirable.

Treatment/Management

The modality of treatment adopted for each case was decided based on the nature/stage of the tumour and the available resources for treatment. Because of the lack of radiotherapy facility at the centre of study, patients who required radiation therapy were referred to centres where such facility were available, however they were seen on follow up schedules at our centre, when feasible. Majority of the patients (35.8%) had surgery alone as treatment modality while 34.0% had combined chemo-radiation without surgery. This is attributed largely to the late presentation in many cases where surgical intervention would have been of little or no benefit. This patterns of intervention have been recorded by authors of similar works. A systemic review by da Lilly-Tariah et al revealed that majority of all head and neck cancers in Nigeria presented late and only had palliative chemoradiative treatment. The challenges precipitating this has been highlighted above.

Outcome

The outcome of head and neck cancers depend on a number of factors which include nature and stage of disease as well as quality of intervention given. Beyond these factors are the peculiar considerations of financial paucity and poor social support systems among many patients such that even when appropriate treatment modalities are available, they are often unaffordable to most patients in our setting. In this study, 13 patients (24.5%) did not attend any follow up visit to the clinic, 24 patients (45.3%) were lost to follow up as they could not be seen up to 6 weeks following treatment as such outcome of management could not be assessed, 5 patients (9.4%) had persistent disease after treatment, 8 patients (15.1%) had satisfactory outcome at 6 weeks post treatment while 3 patients (5.7%) died within 6 weeks after treatment. Accurate reports on outcome of head and neck cancers in Nigeria are few and far between as underscored by the finding by da Lilly-Tariah et al in their systemic review. A study by Okwor et al assessing the survivorship of head and neck cancer patients in University College Hospital, Ibadan, Nigeria found that median survival duration after treatment was 7.8 years for stage 1 cancers and 1.9 years for stage 4 diseases. In the same study, combined treatment modalities were found to increase survival rates significantly compared with single treatment modalities.

Follow up of head and neck cancers still pose a big challenge to clinicians partly because of patient behaviour in this part of the world as many

patients apparently do not understand the impact of being seen at scheduled intervals following definitive treatment. Following the initial relief from symptoms some patients are known to default from check-ups thereby denying researchers the golden opportunity of measuring treatment outcome. Further researches, preferably prospective and multi-centre based ones are desirable to assess the survival and outcome of patients treated for head and neck cancers in Nigeria.

CONCLUSION

Head and neck cancer patients have presented in significant numbers to Federal Medical Centre, Owerri in recent times and the case profiles mirror those from similar tertiary health institutions in Nigeria. Although many of the patients presented with late diseases, concerted efforts were made at diagnosing, staging and treating the diseases. The challenges facing the management of these cases include late presentation, financial paucity, poor social support system and poor follow up culture.

RECOMMENDATIONS

The authors make the following recommendations:

1. That more cancer registries be established in Nigeria especially in Southeastern Nigeria to help gather records on cancer patients for easier documentation.
2. That government should assist cancer patients by subsidizing their investigations and treatment costs to help reduce the burden of disease.
3. That better follow up modules be set up by institutions managing head and neck cancers and this could involve home visits.
4. That further researches, preferably prospective and multi-centre oriented, are desired especially to assess the outcomes of treated head and neck cancers in Nigeria.

Conflict of interest

The authors declare that they do not have any conflicts of interests.

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