

SJMLS - 10(1) - 006

Histopathologic Pattern of Oropharyngeal Tumours Among Patients Seen in National Ear Care Centre, Kaduna: A 10 Year Retrospective Study From 2014-2023

Maryam Ibrahim Rimi^{1*}, Mustapha Abubakar Yaro², Umar Salis³, Benjamin Turman Joseph³, Muhammad Kabir⁴
Medical Laboratory Science Department, Faculty of Allied Health Science, Kaduna State University, Kaduna ¹, Department of Clinical Services, National Ear Care Centre, Kaduna ², Histopathology Unit Medical Laboratory Service Department, National Ear Care Centre, Kaduna ³, Medical Laboratory Service Department, National Ear Care Centre, Kaduna ⁴.

Author for Correspondence*: bindawa.maryam@kasu.edu.ng. <https://dx.doi.org/10.4314/sokjmls.v10i1.6>

Abstract

Oropharyngeal tumours including squamous cell carcinoma, tonsil cancer, benign and inflammatory lesions are a group of diseases with abnormal cells that have potential to grow locally and spread to other parts of the body mainly found in the oral cavity. Oral and pharyngeal cancer, grouped together, is the sixth most common cancer in the world. This research aims to investigate the histopathologic pattern of oropharyngeal tumours retrospectively for 10 years among patients seen in National Ear Care Centre. Records were taken retrospectively from the Histopathology unit register (2014-2023) for all patients that have undergone oropharyngeal surgeries and local excisions to obtain tissues biopsies for histopathological analyses following standard operating procedures. A total of 1543 cases were diagnosed, 10 of which were malignant including different grades of carcinomas, 1532 were benign out of which adeno-tonsillar hyperplasia, Lobular Capillary Haemangioma, Pleomorphic Adenoma and Squamous Papilloma were diagnosed, Lastly, a case of chronic inflammation was also recorded. Sites of excision included 1518 from the adeno-tonsillar regions, 2 from the Pharynx, subglottic and uvula, 4 from the Parotid and supra-glottic, 6 from the Vocal cord, 3 from the Aural metastasis, 1 each of Tongue mass and Vallecular cyst. Eight hundred and thirty-two (832) were males while Seven hundred and eleven (711) were females. The year 2023 recorded the highest number of cases in the age ranges of 0-9 years. It can therefore be concluded that histopathological analyses are very paramount in the diagnoses,

research, collation and classification of oropharyngeal tumours.

Introduction

Oral cancer involves cancerous tissues inside the mouth, including the anterior two-thirds of the tongue, the floor of the mouth, buccal mucosa, gingiva, lips, retromolar trigone, and hard palate, whereas oropharyngeal cancer affects the base of the tongue, soft palate, tonsils, and posterior pharyngeal wall. Oral cancer is a serious global health problem with minimal change in statistical data over time, with 177,757 deaths out of 377,713 new cases recorded in 2020 and a 5-year survival rate of only 50% (Iseh and Malami, 2006; Cleaveland Clinic, 2007; Bradley, 2008). Despite advances in surgical procedures and adjuvant therapy, patients with oral and pharyngeal cancer continue to have a poor prognosis, with global 5-year survival rates of 40-50% that have not improved appreciably in the recent three decades (Abiose *et al.*, 1991).

Oropharyngeal cancer or oropharyngeal squamous cell carcinoma, also known as tonsil cancer is a disease in which abnormal cells with the potential to grow locally and spread to other parts of the body are found in the oropharynx, which includes the base of the tongue, tonsils, soft palate, and walls of the pharynx (Kreimer, 2014; Takes *et al.*, 2015; Anjum and Zohaib, 2020). Oral and pharyngeal cancer are the world's sixth most prevalent cancers. The study focusses largely on various high-risk countries to obtain insight into the regional variations in the incidence of this cancer around the world and to link the high

incidence in specific populations to their lifestyle (Kashyap *et al.*, 2022).

With an estimated half a million cases worldwide and rising trends in some populations, particularly among the young, immediate public health interventions are required to prevent the incidence and mortality from oral and oropharyngeal cancer. Since the mid-2000s, annual incidence rates have risen by roughly 1%, owing primarily to an increase in malignancies associated with HPV infection. From 2009 to 2021, the annual death rate for mouth and throat cancers climbed by 0.6%, following decades of reduction. This is mostly due to an increase in mortality of around 2% each year over that period (Kashyap *et al.*, 2022). Oropharyngeal cancer is classified into two types: HPV-positive oropharyngeal cancer, caused by an oral human papillomavirus infection, and HPV-negative oropharyngeal cancer. The two types of oropharyngeal cancers are HPV-positive oropharyngeal cancer, which is caused by an oral human papillomavirus infection linked to use of alcohol, tobacco, or both (Parkin, 2006; Nordqvist, 2011).

Oropharyngeal cancer is identified through a biopsy of abnormal tissue in the throat. Oropharyngeal cancer is staged based on the appearance of abnormal cells on the biopsy, as well as the size and extent of the abnormal cells discovered. Surgery, chemotherapy, or radiation therapy, or a combination of these, are used to treat the condition. Signs and Symptoms Oropharyngeal carcinoma symptoms may include; a sore throat that lasts more than two weeks, throat pain or trouble swallowing, unexplained, fast weight loss, voice changes (hoarser), ear discomfort, a lump in the mouth or back of the throat, a bump on the neck, a dull discomfort behind the sternum, persistent cough, breathing problems and voice changes including hoarseness (Cleveland Clinic, 2007; Bradley, 2008; *Anderson Cancer Center*, 2019).

Tumours of the oropharynx disrupt a single pathway for deglutition, breathing, and speech, posing a challenge for both the patient and the doctor when these activities are impaired (Gassner and Sabri, 2005). Because the oropharynx is

buried, cancers in this region appear to develop gradually, with patients presenting at an advanced stage (Dhooge and Albers, 1996; Gassner and Sabri, 2005). The oropharynx is a musculofascial tube that connects the hard palate to the hyoid bone. For therapeutic and diagnostic purposes, it is separated into four sub-sites: the soft palate, tonsillar fossa (lateral wall), the base of the tongue, and the posterior pharyngeal wall (Gassner and Sabri, 2005; Homer and Rees, 2012).

The oropharynx is histologically composed of squamous epithelium, lymphoid organs, and small salivary glands. Tumours of the oropharynx can develop from any of these tissues and can be benign or malignant; however, the majority of epithelial tumours are squamous cell carcinomas (Lilly-Tariah *et al.*, 2000; Homer and Rees, 2012). The oropharynx has a large quantity of lymphoid tissue, which may explain why oropharyngeal lymphoma is more common than other places in the body (Gassner and Sabri, 2005; Bradley, 2008).

Benign lesions are typically slow growing until obstructive symptoms appear and are more commonly found on the soft palate; for malignant lesions, the lateral oropharyngeal wall is the most commonly afflicted subsite (Gassner and Sabri, 2005; Ologe *et al.*, 2005; Bradley, 2008; Homer and Rees, 2012). Because of their position and lack of pain fibres, cancers of the base of the tongue are difficult to diagnose; thus, patients with base of the tongue tumours come at an advanced stage (Gassner and Sabri, 2005; Bradley, 2008). Common clinical signs include dysphagia, trouble breathing, throat pain, the sensation of a throat mass, voice changes, oral haemorrhage, ear pain, and a neck mass (Pitchers and Marthin, 2006; Bradley, 2008). As a result, the oropharynx should be examined in cases of respiratory distress, stridor, voice alterations, or dysphagia (Iseh and Malami, 2006; Abiose *et al.*, 1991).

Tumour types include squamous cell carcinoma, which is the most common in the literature, lymphoma, adenoid cystic carcinoma, pleomorphic adenoma (Gillison *et al.*, 2000; Parkin *et al.*, 2005), mucoepidermoid carcinoma, and alveolar rhabdomyosarcoma, among others (D'Souza *et al.*, 2007; Gillison, 2007; Kufre *et*

al.,2015). This report seeks to highlight clinical and histologic characteristics, as well as therapeutic obstacles, for oropharyngeal tumours from the National Ear Care Centre in northwestern Nigeria.

Statement of the Problem

The centre has not undertaken retrospective investigations on patients' tissue samples for oropharyngeal malignancies. The percentage of each sort of malignant diagnostic established needs to be determined, as they are constantly increasing in the current world. Global health is a popular term in today's headlines, but it is rarely comprehended by ear, nose, and throat (ENT) specialists and patients. Communicable diseases like HIV, tuberculosis, and malaria have been in the news for decades, and despite recent public health concerns about noncommunicable diseases like oropharyngeal cancers and other ENT disorders, they continue to receive little attention on the global health stage. Non-communicable disease account for 60% of international mortality in 2008 even though most of the ENT cases are of benign nature and a large of number of patients are affected at a given time (D'Souza *et al.*,2007).

Aim

This research aims to fill the gap of knowledge about types of oropharyngeal tumours in the centre imploring cases in the histopathological aspects.

Objectives

1. To establish the demographic data of patients
2. To determine the prevalence of oropharyngeal cancers retrospectively (2014-2023)
3. To present the diagnoses based on World Health Organization's classification

Study Design and Location

Description of the Study Area

This study was conducted in National Ear Care Centre, Kaduna State. Kaduna State is located at Northwest of Nigeria; it covers a total area of 46,053km² (17,781 sq mi) and an area rank of 4th of 36. It has a population of 6,066,562 people going by 2006 census leaving it the 3rd of 36 in rank and a density of 130km² (340/sq miles). Its coordinates are 10°20'N and 7°45'E; these coordinates clearly indicate that the location is centralised and connects the major routes reaching most of the states of the Nation. Kaduna State, north central Nigeria, is politically classified as belonging to the now 'North - West' zone of the current six (6) Geo - political zones. It is populated by about 59 to 63 different ethnic groups if not more (Hayab, 2014); where Hausa and Fulani are the dominant ethnic groups. Its water supply is sourced through damping of rivers and digging of wells and boreholes. Kaduna State consists of twenty-three (23) Local Government Areas.



Plate 1: Map of Nigeria showing location of Kaduna State

Ethics Statement

The request for the ethical clearance was made in the training, ethical and research committee, National Ear Care Centre, Kaduna.

Standard Operating Procedures (SOP), patients' biodata without their identity was obtained from the departmental register and photomicrographs obtained from the internet.

Sample Population

The population included all patients' records referred for histopathological analysis of oropharyngeal cancers after either biopsy or endoscopy conducted in the hospital

Data analysis

Descriptive statistics such as numbers, proportions and medians were calculated to summarize the sociodemographic data. The data was presented in tables and figures using descriptive statistics.

Sample Collection and Processing

Conducted according to the Departmental

Results

Table 1: Showing yearly distribution, Demographic studies and Lesion sites

S/No	Year	Number of cases	Age/Gender	Distribution	Lesion Site	Number of cases
1	2014	104	0-9	1080	Adenotonsillar	1518
2	2015	192	10-19	192	Pharynx	2
3	2016	127	20-29	85	Parotid	4
4	2017	143	30-39	81	Uvula	2
5	2018	109	40-49	44	Vocal cord	6
6	2019	137	50-59	25	Aural metastasis	3
7	2020	128	60-69	23	Supraglottic	4
8	2021	184	70& Above	10	Subglottic	2
9	2022	197	Male	832	Tongue mass	1
10	2023	222	Female	711	Vallecular cyst	1
Total	10 Years	1543		1543		1543

Table 2: Showing Diagnosis according to Sites

Diagnoses	Adenotonsillar	Pharynx	Parotid	Uvula	Vocal Cord	Aural	Supra glottic	Sub glottic	Tongue mass	Vallecular	Total
SP	-	1	-	2	5	2	-	-	2	-	48
WDSCC	1	1	-	-	1	-	4	-	-	-	7
MDSCC	-	-	-	-	-	-	-	1	-	-	1
ADC	-	-	1	-	-	-	-	-	-	-	1
PA	-	-	2	-	-	-	-	-	-	-	2
ASC	-	-	1	-	-	-	-	-	-	-	1
LCH	-	-	-	-	-	-	-	-	-	1	1
PLGA	-	-	-	-	-	-	-	1	-	-	1
CI	-	-	-	-	-	1	-	-	-	-	1
RH	1517	-	-	-	-	-	-	-	-	-	1517
Male	712	1	3	1	5	2	3	2	1	1	-
Female	806	1	1	1	1	1	1	-	1	-	-
Total	1518	2	4	2	6	3	4	2	2	1	1543

Key: SP-Squamous Papilloma, IP-Inverted Papilloma, WDSCC-Well Differentiated Squamous Cell Carcinoma, MDSCC-Moderately Differentiated Squamous Cell Carcinoma, ADC-Adenocarcinoma, PA-Pleomorphic Adenoma, ASC-Acinic Cell Carcinoma, LCH- Lobular Capillary Haemangioma, PLGA-Pleomorphic Low-Grade Adenocarcinoma, CI-Chronic inflammation, RH- Reactive Hyperplasia

Over the ten (10) year-period; a total of one thousand five hundred and forty-three (1543) cases of oropharyngeal lesions were sent for histopathological analyses. One hundred and four (104) cases in the 2014, one hundred and ninety two (192) in 2015, one hundred and seven (127) in 2016, one hundred and forty-three (143) in 2017 and one hundred and nine (109) in 2018, one hundred and thirty seven (137) in 2019, one hundred and twenty eight (128) in 2020, one hundred and eighty four (184) in 2021, one hundred and ninety seven (197) in 2022 and two hundred and twenty two (222) in 2023. Of the one thousand five hundred and forty-three (1543) cases, eight hundred and thirty-two (832) were males while seven hundred and eleven (711) were females. One thousand and eighty (1080) of the referred patients were in the age range of 0-9, one hundred and ninety-two (192) in the range 10-19, eighty-five (85) in the ages of 20-29, eighty-one

(81) from 30-39, forty-four (44) from 40-49, twenty-five (25) from 50-59, twenty-three (23) from 60-69, and finally ten (10) from 70 and above. One thousand five hundred and eighteen (1518) lesions were excised from the adenotonsillar region and two (2) from the pharynx, uvula and subglottic lesions, four (4) each from the parotid and supraglottic swellings, six (6) from the vocal cord, three (3) were metastasised to the aural sites and one each from the tongue and vallecular cyst. Forty-eight (48) out of the hundred were squamous papilloma part of which one (1) from the pharynx, two (2) each from the uvula, tongue and aural mass and five (5) from the vocal cord. Two (2) each of inverted papilloma and pleomorphic adenoma mainly from the larynx. Thirty-four (34) cases were well differentiated squamous cell carcinoma part of which one (1) each from the pharynx and vocal cord and four (4) from the supraglottic masses.

Nine (9) were moderately differentiated squamous cell carcinoma out of which one (1) from the subglottic mass with only a case of laryngeal polyp. An adenocarcinoma case from the parotid swelling as well acinic squamous carcinoma and two (2) cases of pleomorphic adenoma in the same site. A case of lobular capillary haemangioma from Vallecular, pleomorphic low-grade adenocarcinoma from the subglottic lesion and

chronic inflammation from the aural mass. One (1) male and female each from patients with pharyngeal, uvula and tongue tumours, three (3) females and a male from patients with parotid and supraglottic lesions, five (5) males and a female from patients with vocal cord growths, two (2) males and a female from the aural masses, then two (2) and one (1) males from the subglottic and vallecular respectively.

Photomicrographs Demonstrating some of the Lesions Diagnosed.

Plate 1: Photomicrographs showing the 4 types of salivary carcinomas

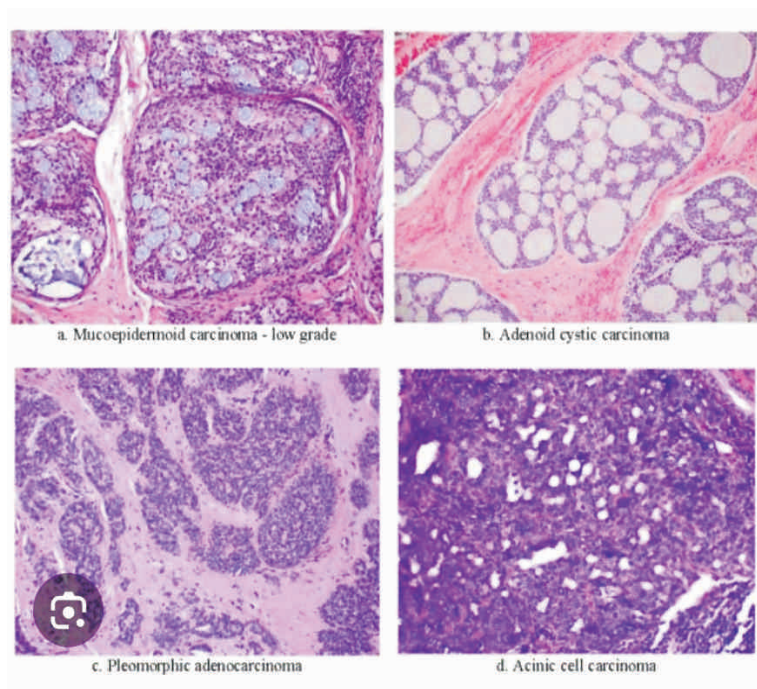


Image adopted from Research Gate

Plate 2: Photomicrograph showing chronic granulomatous inflammation

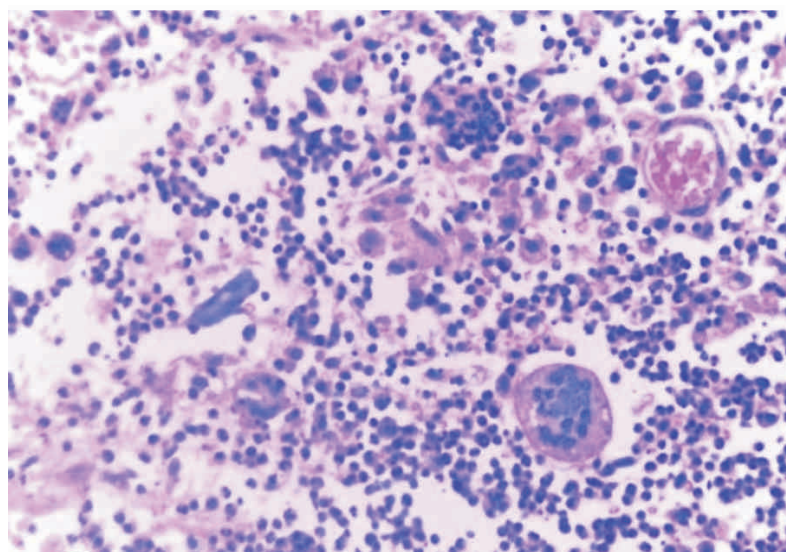


Image adopted from Research Gate

Plate 3: Photomicrograph showing squamous papilloma

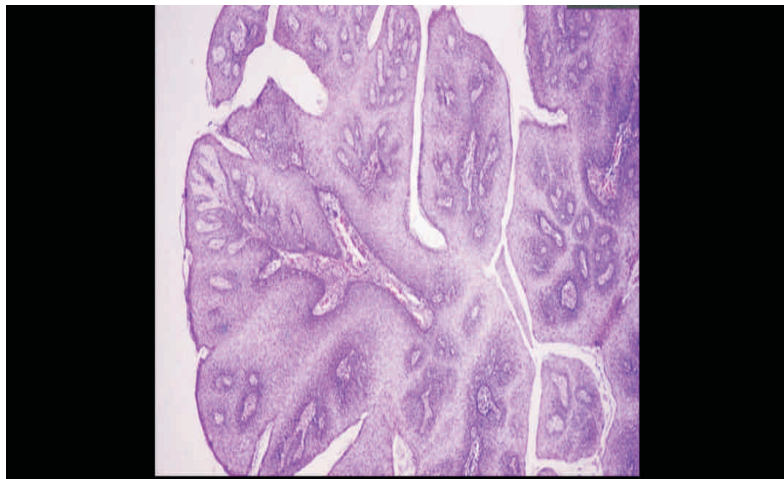


Image adopted from www.brown.edu

Plate 4: Photomicrograph showing well differentiated squamous cell carcinoma

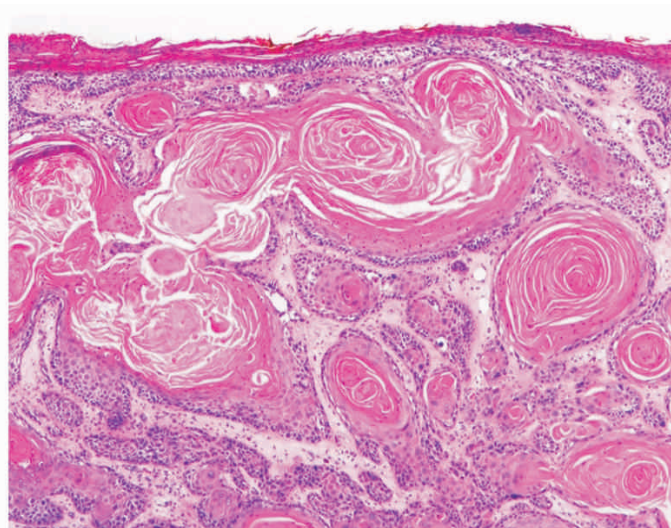
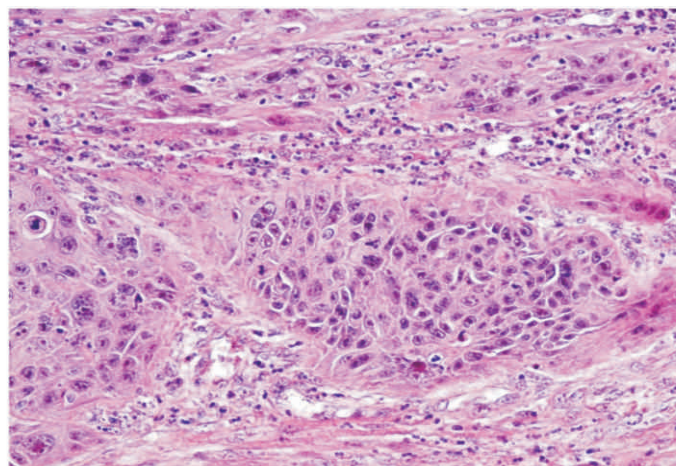


Image adopted from Wikimedia commons

Plate 5: Photomicrograph showing moderately differentiated squamous cell carcinoma



Credit to Daniel Cristian

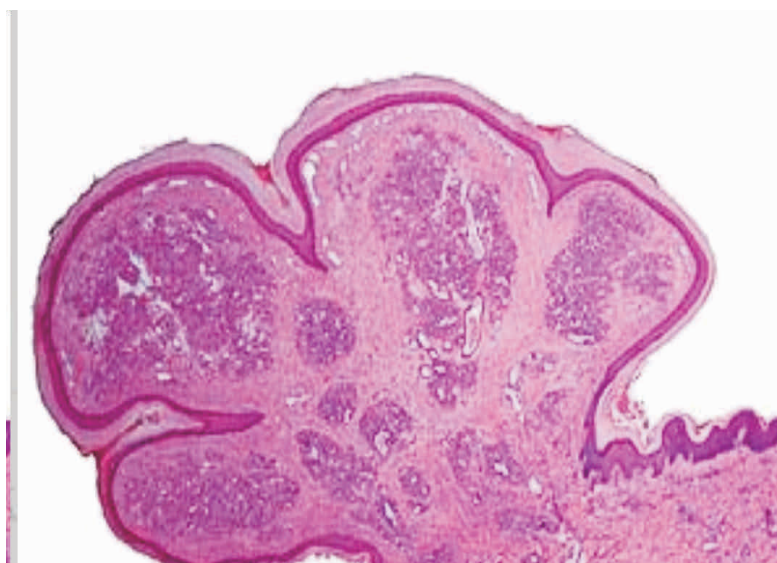
Plate 6: Photomicrograph showing Lobular Capillary haemangioma

Image adopted from Libre Pathology

Discussion of Results

Over the ten (10) year-period; a total of one thousand five hundred and forty-three (1543) cases of oropharyngeal lesions were sent for histopathological analyses while Oropharyngeal tumours account for 10% - 12% of all malignancies of the upper aero digestive tract worldwide (Bradley, 2008). It accounted for 3.8% of all head and neck cancers seen in Sokoto, Nigeria (Iseh and Malami,2006), and 0.4% of all neoplasms seen in Ibadan, Nigeria (Abiose *et al.*,1991).

One hundred and four (104) cases in the 2014, one hundred and ninety-two (192) in 2015, one hundred and seven (127) in 2016, one hundred and forty-three (143) in 2017 and one hundred and nine (109) in 2018, one hundred and thirty-seven (137) in 2019, one hundred and twenty-eight (128) in 2020, one hundred and eighty-four (184) in 2021, one hundred and ninety-seven (197) in 2022 and two hundred and twenty-two (222) in 2023. Of the one thousand five hundred and forty three (1543) cases, eight hundred and thirty two (832) were males while seven hundred and eleven (711) were females and a similar study recorded head and neck cancers showed that the median age of diagnosis is in a patient's early 60s, with a male predominance (Dhooge and Albers,1996), Males were more commonly affected with a male: female ratio of 1.3:1 while our study depicts the same. This agrees with other studies (Psyrrri *et al.*,

2008; D'Souza *et al.*,2007). This difference between males and females was however not statistically significant ($p=0.004$).

One thousand and eighty (1080) of the referred patients were in the age range of 0-9, one hundred and ninety-two (192) in the range 10-19, eighty-five (85) in the ages of 20-29, eighty-one (81) from 30-39, forty-four (44) from 40-49, twenty-five (25) from 50-59, twenty-three (23) from 60-69, and finally ten (10) from 70 and above, however, for oropharyngeal malignancies especially for squamous cell carcinoma, it is diagnosed predominantly in patients over the age of 45 years. Over the past two decades, diagnosis had been made in patient less than 45 years especially with implication of HPV type 16 (Gillison *et al.*, 2000; Gillison, 2007). In a proponent study, majority of the patients were between the ages of 40 - 49 years which agrees with the similar study done in Maiduguri, North eastern part of Nigeria (Psyrrri *et al.*, 2008). One thousand five hundred and eighteen (1518) Lesions were excised from the adenotonsillar region and two (2) from the pharynx, uvula and subglottic lesions, four (4) each from the parotid and supraglottic swellings, six (6) from the vocal cord, three (3) were metastasised to the aural sites and one each from the tongue and vallecular cyst. Forty-eight (48) out of the hundred were squamous papilloma. Generally, in Sub-Saharan Africa, cancer presentation is usually in advanced stage (Psyrrri *et al.*, 2008). Seventy-two percent of

our patients had advanced tumour with various clinical presentations: dysphagia (53%), mass in the mouth (soft palate) (31%), cervical mass (19%) and difficulty in breathing (8%) which necessitated tracheostomy. The late presentation can be attributed to ignorance and the use of traditional medications taken before seeking medical help (Blot *et al.*, 1988). Our finding in this study is like the studies carried out in Jos and Maiduguri, both in Nigeria (Blot *et al.*, 1988).

Surgery was carried out on 86.1% of patients, with only 5.5% of them having chemo radiation, meanwhile one (1) from the pharynx, two (2) each from the uvula, tongue and aural mass and five (5) from the vocal cord. Two (2) each of inverted papilloma and pleomorphic adenoma. Thirty-four (34) cases were well differentiated squamous cell carcinoma part of which one (1) each from the pharynx and vocal cord and four (4) from the supraglottic masses. Nine (9) were moderately differentiated squamous cell carcinoma out of which one (1) from the subglottic mass. An adenocarcinoma case from the parotid swelling as well as acinic squamous carcinoma and two (2) cases of pleomorphic adenoma in the same site. A case of lobular capillary haemangioma from Vallecular, pleomorphic low-grade adenocarcinoma from the subglottic lesion and chronic inflammation from the aural mass. There are well documented etiologies of the oropharyngeal cancers in literatures (Brugere *et al.*, 1986; Gassner and Sabri, 2005; Psyrri *et al.*, 2008; Homer and Rees, 2012). However, smoking could only be implicated in only 5 (13.9%) in a study carried out in Maiduguri. This finding may be due to the limitations of a retrospective study where the surgeon(s) who first met the patient(s) may not have taken the appropriate histories such as the predisposing factors and others. Therefore, a prospective study which may involve the role of human papillomavirus in the pathogenesis of head and neck cancer in our local environment is much desired as this may help in the prevention protocols of oropharyngeal squamous cell carcinoma.

Benign tumors occur more frequently in the oral cavity than the oropharynx (Bradley, 2008). For malignant tumors of the oropharynx, our present study showed that squamous cell carcinoma was the commonest which agrees with studies in both local and the western countries (Silas and Adoga, 2012; D'Souza *et al.*, 2007).

With most of our patients presenting at an advanced stage, it is expected that most of them will have undergone post-operative chemo

radiation as is the practice worldwide (Bradley, 2008), but it wasn't so in this study. This is due to poverty, ignorance, reluctance to travel over 400 km to get radiotherapy. Other factors that may be responsible for this poor health seeking behaviour in our environment may be; cultural beliefs, scepticism about orthodox medicine, exploitation by quacks, large family size and conflict of interest, so it's not surprising that 9 patients did not consent for any form of treatment but signed and left against medical advice. This may also be the reason for poor follow up among our patients as most of them did not come for follow up after surgery, resulting in low rate of post-operative chemo-radiation. Public enlightenment for the community and continuous medical education for Health workers is needed, to enable persons with features of early lesion to be referred to an otolaryngologist for further evaluation and care, and to discourage harmful traditional practices and beliefs. Appropriate legislation through advocacy should also be put in place to enable indigent patients access to medical care at affordable cost.

One (1) male and female each from patients with pharyngeal, uvula and tongue tumours, three (3) females and a male from patients with parotid and supraglottic lesions, five (5) males and a female from patients with vocal cord growths, two (2) males and a female from the aural masses, then two (2) females and one (1) male from the subglottic and vallecular respectively.

Precise reasons for Involvement of younger age group with Oropharyngeal cancer are not well defined as in studies from the western countries (McKaig *et al.*, 1998; Iseh *et al.*, 2013). Proposed mechanism may be related to poor nutritional status involving the deficiency of vitamin A, chronic irritant and poor dental hygiene may be more relevant in our environment coupled with low socioeconomic status, ignorance and bad culture like chewing herbal medicine, kola nuts, tobacco and drinking highly concentrated gin. In a recent study by Iseh *et al.* (2013) in the same region the analysis of frequency of food intake amongst head and neck cancer patients demonstrated low consumption of vegetables, selenium, lycopene and phytochemical rich food which are consistent with increased risk of cancer (Iseh *et al.*, 2013). In that study low

income, large family size, ignorance and low literacy rate were identified as poor prognostic factors affecting their financial capabilities in accessing a balanced diet thereby predisposing to poor health status and head and neck cancer (Iseh *et al.*, 2013).

The main reason for delayed diagnosis of oral cancer is a lack of awareness and knowledge of potential risk factors, as well as the recognition of its signs and symptoms (Petersen, 2009). WHO Global Oral Health programs' approach to controlling oral cancer includes two approaches. The first approach is prevention through reduction of the exposure to risk factors. The second approach is detecting patients with suspicious oral lesions early through screening programs (Messadi, 2013). The early detection of patients with oral cancer depends on the patient's awareness and perception of their health and on the ability of healthcare providers to examine and screen their patients. Public health practitioners have recently focused on increasing public awareness of cancer symptoms and risk factors and evaluating intentions for lifestyle changes. Cancer patients would benefit from early diagnosis and detection of lesions, with immediate referral to specialist care centers. Early diagnosis and referral will improve survival rates, reduce morbidity, and improve treatment outcomes (Paudyal *et al.*, 2014; Huber and Tantiwongkosi, 2014).

However, early detection is not often realistic for most individuals; only one-third of patients present with early-stage oral cancer disease. Compared to the cost of managing oral cancer, community oral cancer screenings and educational measures are far more cost-effective. Patients with high awareness and knowledge of the risk factors, signs, and symptoms of oral cancer were more likely to present for opportunistic screenings, thereby promoting early detection (Oyapero *et al.*, 2024). Thus, cancer awareness is critical for behaviour change and motivation opportunistic screening for oral cancer.

This study provides an updated and comprehensive overview of lip, oral, and other pharyngeal cancer burden in the past 10 years, by region, including for areas where observed data

are scarce. It is also, to our knowledge, the first report of the burden of OPC attributable to risk factors in Kaduna state, providing important information for addressing these cancers even in remote areas. Disparities in Age Standardised Incidence Rate (ASIRs) and Autonomous Sensory Meridian Responses (ASMRs) and trends across the Spectrum for Diagnostic Industries (SDI) spectrum suggested that populations from regions with a lower level of sociodemographic development have a higher chance of death when affected by OPC, with South Asia and Africa carrying substantial OPC burden. Smoking, chewing tobacco, and alcohol were substantial contributors to OPC deaths and Disability Adjusted Life Year (DALYs) and are crucial targets to decreasing future burden of OPC globally.

There are some limitations associated with this study. Firstly, all estimates in our study were based on retrospective report, which might be affected by reporting bias. However, this study provides essential baseline data for further analytical studies.

Conclusion

Oropharyngeal tumours in this study had only about 6.5% that were malignant while majority of the lesions were either benign or inflammatory. Squamous cell carcinoma was the commonest histologic types of the cancers seen, with majority of patients presenting at an advanced stage of the disease with multiple symptoms, some life-threatening requiring urgent airway surgical intervention, Reactive lymphoid hyperplasia was the commonest benign lesion seen. However, some patients were not too keen on continuing with other modalities of treatment because of poverty and ignorance, accounting for a low number of patients having post-operative radiotherapy and chemotherapy. More is needed on advocacy and public enlightenment in this regard and thus, cancer awareness is critical for behaviour change and motivation opportunistic screening for oral cancer. Lastly, it is recommended to carry out genomic and epigenetic research on this topic to find out which genes the viruses affect and mutational studies on the genes that have been linked to oropharyngeal cancers for diagnostic and therapeutic purposes.

Conflict of Interest

Authors declare no conflict of interest

Acknowledgement

We want to acknowledge the help of the whole staff of the Medical Laboratory Service Department as well as the management of National Ear Care Centre for their collective unwavering support towards the success of this research.

References

- Abiose, B.O., Ogunniyi, J. and Oyejide, O. (1991) Oral Soft Tissue Malignancies in Ibadan, Nigeria. *African Journal of Medicine and Medical Sciences*; **20**: 107-113.
- Adoga, A.A., Nimkur, T.L. and Silas, O.A. (2011). Clinicopathological Profile of Malignant Tumors of the Oropharynx at the Jos University Teaching Hospital, Jos, Nigeria. *Journal of Medicine in the Tropics*; **13**:36-40.
- Anjum, F., Zohaib, J. (2020). 'Oropharyngeal Squamous Cell Carcinoma'. Definitions. Treasure Island (FL): *Stat Pearls Publishing*.
- Bradley, J.P. (2008) Oropharyngeal Tumours. In Gleeson, M., Browning, G.C. and Burton, M.J., *Scott-Brown's Otorhinolaryngology, Head and Neck Surgery, 7th Edition*, Hodder Arnold, London: **2577-2593**.
- Blot, W.J., McLaughlin, J.K., Winn, D.M., Austin, D.F., Greenberg, R.S., Preston-Martin, S., et al. (1988) Smoking and Drinking in Relation to Oral and Pharyngeal Cancer. *Cancer Research*; **48**: 3282-3287.
- Brugere, J., Guenel, P., Leclerc, A. and Rodriguez, J. (1986) Differential Effect of Tobacco and Alcohol in Cancer of the Larynx, Pharynx and Mouth. *Cancer*; **57**: 391-395.
- Cleveland Clinic (2007). "Oropharyngeal Cancer Overview". *Cleveland Clinic*.
- Dhooge, I.J. and Albers, F.W. (1996) Clinical Characteristics and Diagnostic Delay of Head and Neck Cancer: Results from a Prospective Study in Belgium. *European Journal of Surgical Oncology*; **22**: 354-358.
- Da Cunha, A.R., Compton, K., Xu, R., Mishra, R., Drangsholt, M.T., Antunes, J.L., Kerr, A.R., Acheson, A.R., Lu, D., Wallace, L.E., Kocarnik, J.M. (2023). The global, regional, and national burden of adult lip, oral, and pharyngeal cancer in 204 countries and territories: A systematic analysis for the global burden of disease study 2019. *Journal of American Medical Association Oncology*; **9(10)**:1401-1416.
- D'Souza, G., Kreimer, A.R., Viscidi, R., Pawlita, M., Fakhry, C., Koch, W.M., et al. (2007) Case-Control Study of Human Papillomavirus and Oropharyngeal Cancer. *New England Journal of Medicine*; **356**: 1944-1956.
- Garandawa, H.I., Abdullahi, I., Haruna, A.N., Sandabe, M.B. and Samdi, M.T. (2012). Oropharyngeal Cancers in Maiduguri, Nigeria: A Ten-Year Review of Clinical Profile. *Online Journal of Medicine and Medical Science Research*; **1**: 116-121.
- Gassner, G.H. and Sabri, A.N. (2005). Oropharyngeal Malignancy. In Cummings, C.W., Flint, P.W., Lund, V.J., Eds., *Cummings Otolaryngology Head & Neck Surgery*, 4th Edition, Elsevier Mosby, Amsterdam: **1717-1754**.
- Gillison, L.M., Koch, M.W., Capone, B.R., Spafford, M., Westra, H.W. and Wu, L. (2000) Evidence of Causal Association between Human Papillomavirus and a Subset of Head and Neck Cancer. *Journal of the National Cancer Institute*; **92**: 709-720.
- Gillison, M.L. (2007) Current Topics in the Epidemiology of Oral Cavity and Oropharyngeal Cancers. *Head & Neck*; **29**: 779-792.
- Homer, J. and Rees, G. (2012). Pharynx: Oropharynx. In Watkinson, J.C. and Gilbert, R.W., Eds., *Stell & Maran's Textbook of Head and Neck Surgery and Oncology, 5th Edition*, Hodder Arnold, London: **612-617**.
- Huber, M.A., Tantiwongkosi, B. (2014). Oral and oropharyngeal cancer. *Medical Clinics of North America*; **98(6)**:1299-1321.
- Iseh, K.R., Essien, E. and Bilbis, L.S. (2013) Demographic Characteristics and Food Consumption Pattern of Head and Neck Cancer Patients in a Tertiary Health Institution North West Nigeria. *Pakistan Journal of Nutrition*; **12**: 897-902.
- Iseh, K.R. and Malami, S.A. (2006). Pattern of Head and Neck Cancer in Sokoto. *Nigerian Journal of Otorhinolaryngology*; **3**: 77-83.
- Kufre Robert Iseh, Mohammed Abdullahi, Daniel Jiya Aliyu, Stephen Semen Yikawe, Joseph Hassan Solomon (2015). Clinical and Histological Patterns of Oropharyngeal Tumors in Selected Health Institutions in

- North Western Nigeria. Department of ENT, Usmanu Danfodiyo University Teaching Hospital, Sokoto, Nigeria.
- Kashyap D, Pal D, Sharma R, Garg VK, Goel N, Koundal D, Zaguia A, Koundal S, Belay A. (2022). Global Increase in Breast Cancer Incidence: Risk Factors and Preventive Measures. *Biomed Research International*; **2022:9605439**.
- Kreimer, A.R. (2014). "Prospects for prevention of HPV-driven oropharynx cancer" (PDF). *Oral Oncology*; **50 (6):555–559**.
- Lilly-Tariah, O.B., Nwana, E.J.C. and Okeowo, P.A. (2000) Cancers of the Ear, Nose and Throat. *Nigerian Journal of Surgical Sciences*; **10: 52-56**.
- McKaig, R.G., Baric, R.S. and Olshan, A.F. (1998) Human Papillomavirus and Head and Neck Cancer: *Epidemiology and Molecular Biology. Head and Neck*; **20: 250-265**.
- Messadi, D.V. (2013). Diagnostic aids for detection of oral precancerous conditions. *International Journal of Oral Science*; **5(2):59-65**.
- MD Anderson Cancer Center (2019). "Throat Cancer". MD Anderson Cancer Center. National Cancer Institute (2011). "Oropharyngeal Cancer Treatment (PDQ®)". National Cancer Institute.
- Nordqvist, C. (2011). "HPV Linked Oropharyngeal Cancer Rates Rise Dramatically". Medical News Today.
- Ologe, F.E., Adeniji, K.A. and Segun-Busari, S. (2005) Clinicopathological Study of Head and Neck Cancers in Ilorin, Nigeria. *Tropical Doctor*; **35:2-4**.
- Otoh, E.C., Johnson, N.W. and Danfillo, I.S. (2004) Primary Head and Neck Cancers in North Eastern Nigeria. *West African Journal of Medicine*; **23: 305-313**.
- Oyapero, A., Erinoso, O., Olatosi, O.A. (2024). Community Survey on Association of Sociodemographic Characteristics with Risk Perception and Awareness about Oral Cancer in Lagos, Nigeria. *Pesquisa Brasileira em Odontopediatria e Clínica Integrada*; **24:e230065**.
- Parkin, D.M. (2006). "The global health burden of infection-associated cancers in the year 2002". *International Journal of Cancer*; **118 (12): 3030–3044**.
- Pitchers, M. and Marthin, C. (2006) Delay in Referral of Oropharyngeal Squamous Cell Carcinoma to Secondary Care Correlates with a More Advanced Stage at Presentation and Is Associated with Poor Survival. *British Journal of Cancer*; **94: 955-958**.
- Parkin, D.M., Bray, F., Ferlay, J. and Pisani, P. (2005). Global Cancer Statistic. CA: *A Cancer Journal for Clinicians*; **55: 74-108**.
- Petersen, P.E. (2009) Oral cancer prevention and control--the approach of the World Health Organization. *Oral Oncology*; **45(4-5):454-460**.
- Psyrris, A., Prezas, L. and Burtness, B. (2008) Oropharyngeal Cancer. *Clinical Advances in Hematology and Oncology*; **6: 604-612**.
- Razavi, S.M., Tahani, B., Nouri, S., Khazaei, A. (2015). Oral cancer knowledge and practice among dental patients and their attitude towards tobacco cessation in Iran. *Asian Pacific Journal of Cancer Prevention*; **16(13):5439-5444**.
- Silas, O.A. and Adoga, A.A. (2012) Histopathologic Patterns of Malignant Tumours of the Oropharynx of the Jos University Teaching Hospital. *Journal of Clinical Pathology and Forensic Medicine*; **3: 9-11**.
- Takes, R.P., Wierzbicka, M., D'Souza, G., Jackowska, J., Silver, C.E., Rodrigo, J.P., (2015). "HPV vaccination to prevent oropharyngeal carcinoma: What can be learned from anogenital vaccination programs?". *Journal of Oral Oncology*; **51 (12): 1057–1060**.

Citation: Maryam Ibrahim Rimi, Mustapha Abubakar Yaro, Umar Salis, Benjamin Turman Joseph, Muhammad Kabir. Histopathologic Pattern of Oropharyngeal Tumours Among Patients Seen in National Ear Care Centre, Kaduna: A 10 Year Retrospective Study From 2014-2023. *Sokoto Journal of Medical Laboratory Science*; **10(1): 55–66**. <https://dx.doi.org/10.4314/sokjmls.v10i1.6>

Copyright: This is an open-access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.