

Clinical Presentation and Histological Patterns of Nasopharyngeal Cancer in Federal Teaching Hospital Katsina, Nigeria: A Retrospective Study

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ABSTRACT

Background: Nasopharyngeal cancer (NPC) is a malignancy arising from the epithelial cells of the nasopharynx, with high prevalence in Southeast Asia and North Africa. It has various histologic types with bimodal presentation, with clinical features classified as nasal, cervical, neurophthalmic and otologic mimicking symptoms of other head and neck pathologies leading to delay in presentation, diagnosis and commencement of treatment. **Objectives:** This study analysed the clinical presentations, histological subtypes, and treatment outcomes of nasopharyngeal malignancy among patients in FTH Katsina, Nigeria. **Methods:** A retrospective study and data obtained analysed using IBM-SPSS 25.0. **Results:** A record of 11 patients with confirmed histological diagnosis of NPC were analysed. Male (72.7%), 54.5% were within the 5th to 8th decades of life and 45.5% of patients between the 2nd-4th decades of life. Nasal symptoms included epistaxis (72.7%), nasal blockage (63.6%), cervical lymphadenopathy (100%), and otologic symptoms (54.5%). Histologically, undifferentiated squamous cell carcinoma (SCC) accounted for 72.7% of cases and lymphoma was the least (9.1%). About 54.5% did not receive treatment, primarily due to financial constraints. The mortality rate was 27.3%, with 54.5% of patients lost to follow-up. **Conclusion:** Nasopharyngeal cancer is a rare nasopharynx tumour with varied clinical and histologic features. It is curable if diagnosed and treated early, and radiotherapy is the most important treatment modality.

Key words: Nasopharynx, Cancer, Epistaxis, Cervical lymphadenopathy, Radiotherapy

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Introduction

Nasopharyngeal cancer (NPC) is defined by the World Health Organization (WHO) as carcinoma arising in the nasopharyngeal mucosa showing light microscopy and ultrastructural evidence of squamous differentiation.¹ The nasopharynx is part of the upper respiratory system that connects the nasal cavities with the larynx and trachea, through the oropharynx, which houses important local and regional anatomic

structures like the pharyngeal orifice of the Eustachian tube, Rosenmüller fossae and Gerlach's tubal amygdala.² Based on the current WHO classification of tumours of the nasopharynx, the three histomorphologic types are namely keratinizing, non-keratinizing (differentiated and undifferentiated; formerly WHO Grade II and III respectively) and basaloid squamous cell carcinoma.¹ It is a common cancer and leading cause of morbidity and mortality in Southern China, Southeast Asia, the Arctic and the Middle East/North Africa.^{3,4} Undifferentiated carcinomas have better control rate in local tumour with treatment and a higher incidence of distant metastasis than the differentiated carcinomas; keratinizing squamous cell carcinoma was reported to account for 25% of all NPC in North America, but only 1% in endemic areas, while undifferentiated carcinoma counted for 95% of all cases in endemic areas, and 60% of cases in North America.⁵ NPC has male to female ratio 23:1 in most populations, and in low-risk populations, NPC incidence reaches a modest peak in young adulthood (ages 15–24 years), plateaus or declines slightly until ages 35–39 years, and then rises to a second, higher peak at approximately ages 65–79 years. In high-risk

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populations, however, NPC incidence exhibits a single peak at approximately ages 45–59 years, followed by a plateau.³ The primary nasopharyngeal (NP) lymphoma is a very rare tumor, and constitutes only about 35–37% of cases of Waldeyer’s ring (WR) lymphoma, and it has been reported that less than 10% of NHL cases in Western countries involve the WR.⁶ The development of nasopharyngeal malignancy is believed to be a reflection of interaction among genetic, environmental, and viral agent known as Epstein–Barr virus (EBV).⁷ It has various clinical features classified as nasal, cervical, neurophthalmic and otologic which may mimic symptoms of other head and neck pathologies leading to delay in presentation, diagnosis and commencement of treatment which adversely affect the outcome of the treatment.^{5,8} Radiation therapy is the mainstay of treatment currently being employed for the management of NPC patients. Intensity-modulated radiation therapy has yielded improved outcomes.⁸ However, these facilities are grossly inadequate in Nigeria.⁷ Data on NPC has not been presented from our centre leading to the paucity of data and the basis of this study.

Objectives

This study aims to analyse the clinical presentations, histological subtypes, and treatment outcomes of nasopharyngeal malignancy among patients in Federal Teaching Hospital Katsina, Nigeria.

Methods

This is a retrospective study of patients with histologically confirmed nasopharyngeal malignancy seen at the Department of Ear, Nose and Throat Federal Teaching Hospital, Katsina, Nigeria, spanning from January 2021 to July 2024. Data on demographics, clinical presentation, histological types, treatment modalities and outcomes were extracted from the electronic health records of the departments of ENT and Morbid and the anatomic pathology database of the hospital. Ethical approval was obtained from the research and ethics committee of the Federal Teaching Hospital Katsina. Histopathological data were categorized based on the World Health Organization (WHO) classification for nasopharyngeal cancer. Data analysis was done with IBM-SPSS 25.0. Results were presented in figures and tables

Results

A total of 11 patients with a confirmed histological diagnosis of nasopharyngeal malignancy were enrolled in this study. Of these, eight (72.7%) were males and three (27.3%) were females. Approximately 45.5% were between the 2nd and 4th decades of life, while 54.5% were in the 5th to 8th decades. The figures and tables presented histologic findings, clinical symptoms, and treatment outcomes.

Table I: Histologic Types

Histological Type	Frequency (%)
Undifferentiated SCC	72.7
Keratinizing SCC	9.1
Non-Hodgkin Lymphoma	9.1

Table II. Symptoms Distribution

Symptom	Frequency (%)
Nasal blockage	63.3
Epistaxis	72.7
Nasal discharge	54.5
Neck swelling	100.0
Otalgia	27.3
Hearing loss	45.5
Visual disturbances	9.1



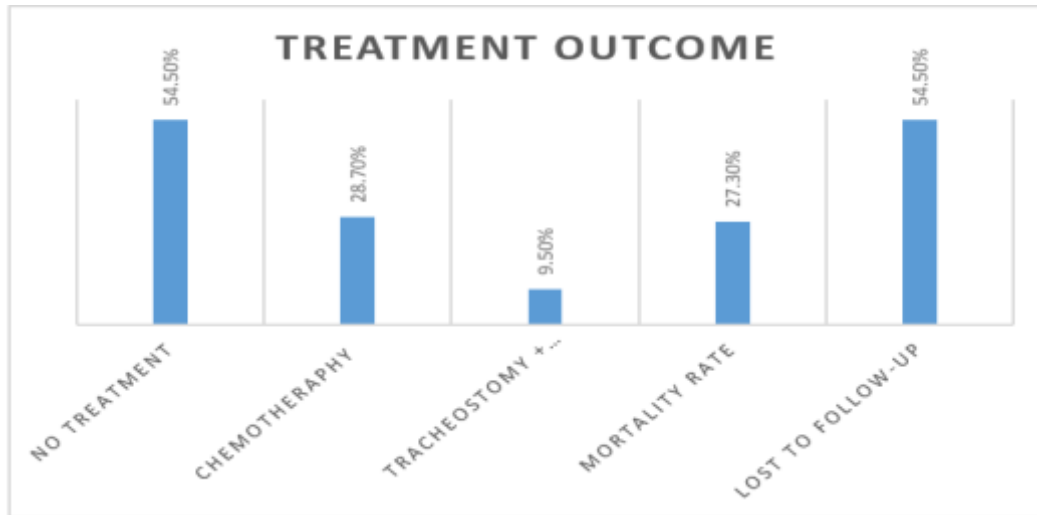


Figure1: Treatment Outcome

Discussion

The male predominance observed in this study aligns with most global studies and local Nigerian studies that suggest a gender predisposition to NPC with M:F ratio as high as 2:1 to >3.1:1.^{Rs} Similar results was found in a study in Indonesia where the proportion of males were 1.66 times more affected than females.⁵ This difference in preponderance can be attributed to differences in lifestyle observed amongst the two sexes in which social habits such as smoking and alcohol consumption, which are generally accepted as the risk factors of NPC, are mostly practiced by males.^{5,9,10} The bimodal age distribution observed, with peaks in the 2nd–4th decades and the 5th–8th decades found in our study is similar to other studies, reflecting the dual nature of NPC etiology, involving both genetic and environmental factors.^{3,7} Cervical lymphadenopathy was a universal presentation among patients in this study, with bilateral involvement in 72.7% of cases; this mirrors existing data, as NPC commonly metastasizes to regional lymph nodes, often presenting as painless cervical masses.⁷ Nasal symptoms such as epistaxis (72.7%) and nasal blockage (63.6%) were also prominent. The otologic symptoms seen in 54.5% of patients underline the propensity of NPC to invade the Eustachian tube, causing conductive hearing loss and otitis media with effusion, together with the visual disturbances found in our study, are in line with the common clinical presentations of NPC worldwide.^{1,2} Histologically, undifferentiated squamous cell carcinoma (SCC) was the predominant subtype (72.7%), a pattern consistent with WHO data and

African studies, including those from Nigeria.^{1,2} Nasopharyngeal lymphoma accounted for the least common malignant tumour of the nasopharynx as reported in other studies.⁶ At present, radiotherapy (RT) especially intensity-modulated radiotherapy (IMRT) is the only curative treatment for NPC and has become one of the most important achievements in the treatment of NPC improving prognosis of NPC treatment.⁴ In our study however, most of the patients did not receive radiotherapy due to financial constraints and unavailability of the radiotherapy machines in our region giving room for distant and locoregional metastasis thereby affecting the outcome.⁷

Conclusion

Nasopharyngeal malignancy is a rare tumour of the nasopharynx with varied clinical and histologic features. The prognosis is usually good if diagnosed early and treated promptly. The most important treatment modality is radiotherapy, which is however, not available in many centres and where it is, the cost is highly prohibitive to the majority of the patients and this adversely affects the outcome of the treatment.

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