VOLUME - 15, ISSUE - 08, AUGUST - 2026 • PRINT ISSN No. 2277 - 8160 • DOI : 10.36106/gjra

Original Research Paper

Oncopathology

CLINICOPATHOLOGICAL SPECTRUM OF NASOPHARYNGEAL CARCINOMA: A CASE SERIES OF THREE PATIENTS

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ABSTRACT Nasopharyngeal carcinoma (NPC) is an uncommon malignant epithelial tumour with variable clinical, radiological, and histopathological presentations that may delay diagnosis. This case series describes three histopathologically diagnosed patients identified between January 2025 and January 2026. The first patient, a 60-year-old man, had a long-standing right nasal mass with cheek swelling and cervical lymphadenopathy; biopsy showed non-keratinizing squamous cell carcinoma with an undifferentiated pattern. The second patient, a 52-year-old woman, presented with a short history of nasal obstruction, and imaging demonstrated a polypoidal cystic nasopharyngeal lesion involving the posterior nasal septum; histology showed keratinizing squamous cell carcinoma. The third patient, a 48-year-old man initially treated for sinusitis, had subtle asymmetric nasopharyngeal thickening and non-keratinizing squamous cell carcinoma with a differentiated pattern on biopsy. These cases demonstrate that NPC may resemble benign or inflammatory sinonasal disease. Persistent or atypical unilateral symptoms require endoscopic assessment, imaging, adequate biopsy, and careful histopathological evaluation for timely diagnosis.

KEYWORDS : Nasopharyngeal carcinoma, unusual presentation, histological types, diagnosis.

INTRODUCTION:

Nasopharyngeal carcinoma (NPC), a malignant epithelial tumour also called Lymphoepithelioma arises in the nasopharynx. It has a distinctive geographic distribution and a higher burden in East and Southeast Asia (1). Within India, the highest incidence has been reported in several Northeastern states, including Nagaland (2).

According to the fifth edition of the WHO Classification of Head and Neck Tumours, nasopharyngeal carcinoma is classified into keratinizing squamous cell carcinoma, non-keratinizing squamous cell carcinoma, and basaloid squamous cell carcinoma. Non-keratinizing squamous cell carcinoma may show differentiated or undifferentiated histological patterns; these patterns remain within the same tumour type. It is strongly associated with Epstein–Barr virus (EBV) (3). Common presentations include nasal obstruction, epistaxis, otological symptoms, cervical lymphadenopathy, and cranial nerve involvement (1).

In this case series, the initial symptoms were non-specific and did not immediately suggest NPC, contributing to delayed diagnosis in some patients. Similar atypical presentations have been reported and may delay definitive evaluation (4). These cases illustrate the value of careful clinicoradiological assessment and histopathological confirmation when NPC is suspected.

Case Selection

This case series included three histopathologically diagnosed cases of nasopharyngeal carcinoma identified between January 2025 and January 2026. Available clinical presentation, radiological findings, and histopathological features were reviewed for each patient.

Case Series Presentation

Case 1:

A 60-year-old male presented with a right-sided nasal mass and obstruction for 1 year, along with right cheek swelling and cervical lymphadenopathy for 6 months. The examination revealed a pinkish mass completely occupying the right nasal cavity almost obscuring nasal passage (Figure 1).

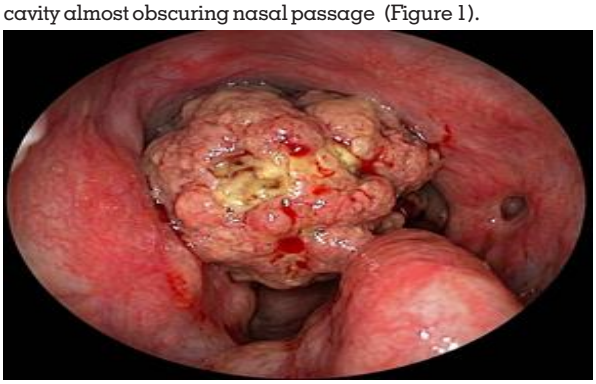

Figure 1: Mass completely occupying the right nasal cavity

CT imaging demonstrated an aggressive soft tissue mass involving the right nasal cavity with extension into the nasopharynx and right maxillary sinus, along with bony erosion and necrotic cervical lymphadenopathy, suggestive of malignancy.

Histopathological examination of the biopsy showed an ulcerated tumor composed of syncytial sheets of large cells with vesicular nuclei, prominent nucleoli, and moderate eosinophilic to amphophilic cytoplasm. The stroma exhibited plasmacytic infiltrate, hemorrhage, necrosis, and vascular congestion, with 2–3 mitoses/10 HPF.

Based on the clinicoradiological and histomorphological findings, a diagnosis of nasopharyngeal non-keratinizing

squamous cell carcinoma with an undifferentiated pattern was rendered. The advised immunohistochemistry panel included PanCK, CK5/6, AE1/AE3, p40/p63, EBER-ISH, Ki-67; results were not available.

Case 2:
A 52-year-old female presented with a left nasal mass of 2 weeks' duration, associated with mild obstruction, congestion, and a blocking sensation.

Examination revealed a friable mass in the left nasal cavity, left middle-ear effusion, and a palpable level II cervical lymph node. CT of the nose and paranasal sinuses demonstrated an elongated polypoidal cystic lesion with necrotic areas in the proximal nasopharynx, with involvement of the posterior nasal septum (Figure 2).

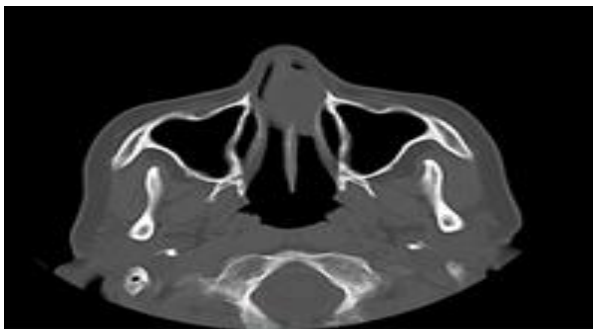

Figure 2: CT scan PNS axial view shows elongated polypoidal cystic lesion with necrotic areas in the proximal nasopharynx with involvement of posterior nasal septum.

Sample from the mass sent to the department of histopathology and it revealed tumour cells arranged in nests, trabeculae, and papillae. The cells were polygonal with abundant eosinophilic cytoplasm, enlarged hyperchromatic nuclei and prominent nucleoli. Keratin pearl formation and foci of individual cell keratinization was identified. The stroma showed lymphocytic infiltration and focal necrosis, with 4–5 mitoses/10 HPF.

Based on the histomorphological findings, a diagnosis of nasopharyngeal keratinizing squamous cell carcinoma was rendered. The advised immunohistochemistry panel included Pan CK, CK5/6, AE1/AE3, p40, p63, Ki67; results were not available.

Case 3:
A 48-year-old male presented with persistent right-sided nasal obstruction (4 months), post-nasal discharge (3 months), and progressive headache (2 months), unresponsive to medical therapy for presumed sinusitis. Symptoms later included occasional blood-streaked nasal discharge.

Examination showed congested nasal mucosa with nasopharyngeal fullness on posterior rhinoscopy, without cervical lymphadenopathy or cranial nerve deficits. CT Nose and PNS with Nasopharynx revealed subtle asymmetric soft tissue thickening in the right nasopharynx (Fossa of Rosenmuller) with mild obliteration of adjacent fat planes. Findings are suspicious for an underlying nasopharynx mass lesion. Direct nasopharyngoscopic evaluation with biopsy is advised.

Histopathology of the endoscopic biopsy showed infiltrating nests, sheets, trabeculae, and syncytial aggregates of malignant epithelial cells beneath the nasopharyngeal mucosa. Tumour cells were polygonal with moderate eosinophilic cytoplasm, indistinct cell borders, and vesicular nuclei showing mild-to-moderate pleomorphism with prominent nucleoli. Definite squamous differentiation was present; however, keratin pearl formation and individual-cell keratinization were absent. Mitotic figures numbered 3–4/10 HPF. The intervening stroma showed a dense lymphoplasmacytic infiltrate (Figure 3). Based on these histomorphological findings, a diagnosis of nasopharyngeal non-keratinizing squamous cell carcinoma with a differentiated pattern was rendered. The advised immunohistochemistry panel included PanCK, CK5/6, AE1/AE3, p40/p63, EBER-ISH, Ki-67; results were not available.

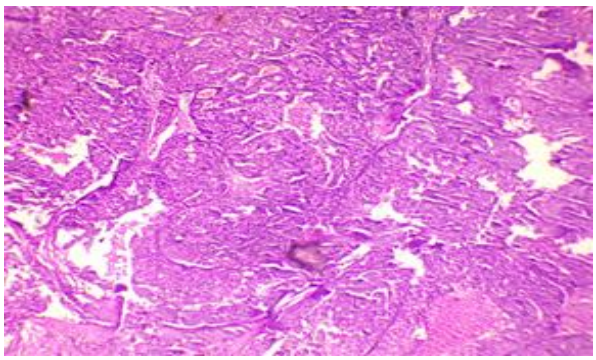

Figure 3: Histopathological (HPE)-10x. The image shows cohesive sheets of malignant cells with ovoid nuclei, prominent nucleoli and high N:C ratio accompanied with lymphocytic infiltrates and mitosis.

DISCUSSION

This case series illustrates the morphological and histological (histomorphological) diversity of NPC along with its clinical implications which can mimic other benign and malignant conditions.

The first patient presented with nasal obstruction and cervical lymphadenopathy after a prolonged symptomatic period. Advanced-stage presentation and nodal disease are common in Indian institutional series, partly because early symptoms may be non-specific (5).

The second patient had a short history of nasal symptoms. CT demonstrated an elongated polypoidal cystic lesion with necrotic areas in the proximal nasopharynx and involvement of the posterior nasal septum. Histopathological examination established the diagnosis, underscoring the need for tissue confirmation of a suspicious nasopharyngeal lesion (1).

The third patient was initially treated for sinusitis, and the CT findings were non-specific. Endoscopic biopsy subsequently confirmed non-keratinizing squamous cell carcinoma with a differentiated pattern. Persistent or atypical sinonasal symptoms therefore warrant endoscopic assessment and biopsy when clinically indicated (1,4).

The cases demonstrated varied histomorphological patterns. Non-keratinizing squamous cell carcinoma with an undifferentiated pattern is characterized by syncytial sheets or nests of large malignant epithelial cells with indistinct borders, vesicular nuclei, prominent nucleoli, and a dense lymphoplasmacytic background. This morphology, often described as lymphoepithelioma-like, was identified in one of the present cases (3).

Keratinizing squamous cell carcinoma of the nasopharynx demonstrates conventional squamous differentiation, including keratinization and intercellular bridges, and is less strongly associated with EBV than non-keratinizing NPC (1,3). This subtype has been associated with smoking, alcohol consumption, and comparatively poorer response to radiotherapy.

Non-keratinizing squamous cell carcinoma with a

differentiated pattern shows recognizable squamous maturation without overt keratinization. Tumour cells may be arranged in nests, sheets, or trabeculae with an associated lymphocytic infiltrate. Differentiated and undifferentiated patterns may differ subtly in architecture and cytological appearance (3).

The pathogenesis of NPC is multifactorial and reflects interactions among EBV infection, host genetic susceptibility, and environmental exposures. Dietary factors and susceptible HLA alleles have also been associated with increased risk in epidemiological studies (1,6).

This three-patient case series underscores the clinical and morphological variation of NPC and the importance of adequate tissue sampling and careful microscopic examination. Histopathological typing supports diagnosis and prognostic assessment, while radiotherapy with stage-appropriate systemic therapy remains central to treatment (1).

STRENGTHS

This study correctly utilizes the terminology and criteria from the 5th edition of the WHO Classification of Head and Neck Tumours. It also demonstrates clear, practical diagnostic pitfalls, reinforcing the critical importance of early endoscopic biopsy along with offering strong microscopic reporting

LIMITATIONS

This case series is limited by the small number of patients and the absence of reported confirmatory immunohistochemical/ EBV results, treatment details, and follow-up outcomes. The findings therefore illustrate morphological and clinical variation but are not intended to estimate subtype frequency or prognosis.

CONCLUSION

Nasopharyngeal carcinoma shows considerable clinical and morphological variation, from large aggressive masses to subtle sinonasal presentations. In accordance with the fifth edition of the WHO classification, accurate recognition of keratinizing squamous cell carcinoma, non-keratinizing squamous cell carcinoma (including differentiated and undifferentiated patterns), and basaloid squamous cell carcinoma supports appropriate diagnostic reporting. Persistent unilateral nasal obstruction, refractory sinusitis-like symptoms, or unexplained otological or cranial nerve symptoms should prompt endoscopic evaluation and biopsy when indicated.

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