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Case Report

# Facial Nerve Palsy as a Presenting Feature of Nasopharyngeal Carcinoma: A Rare Case Report

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## Abstract

Southern China has the greatest incidence of nasopharyngeal carcinoma (NPC) arising from nasopharyngeal epithelium. The pathogenesis of NPC, which has a distinctive bimodal pattern of age distribution, is yet unknown, but genetic susceptibility is undoubtedly a factor. Usually cranial nerve (CN) involvement due to NPC presents in either single palsies or in grouped CN syndromes. CN VII (Facial Nerve) is not commonly reported as either an isolated palsy or part of a syndrome. We describe a rare case of NPC in a 65-year-old patient who first presented with facial nerve palsy.

**Keywords:** Nasopharyngeal; Carcinoma; Facial Nerve; Palsy

## Abbreviations

NPC: Nasopharyngeal Carcinoma; CN: Cranial Nerve; FNAC: Fine Needle Aspiration Cytology; CPA: Cerebellopontine Angle

## Introduction

Nasopharyngeal carcinoma (NPC) refers to a particular type of carcinoma that develops from the nasopharyngeal epithelium and is most frequently observed in central Guangdong province and the Guangxi Autonomous area of southern China. In Caucasian groups, including Indians, NPC is a relatively uncommon neoplasm. A typical bimodal age distribution pattern is evident, with a modest peak in late childhood and a second peak in the 50-60 year range, with a male–female ratio of 2:3. The exact cause of NPC is yet unknown, it is obvious that a genetic predisposition and some environmental co-factors have a role [1]. Patients with NPC may exhibit a wide range of symptoms, including isolated neck masses, nasal congestion, nasal bleed, visual and auditory deficits, headache, or cranial nerve (CN) dysfunction, because of the nasopharynx's anatomic location and direct connections to nearby head and neck structures. CN involvement caused by NPC often manifests as either a single palsy or a set of CN syndromes. Cranial nerve VII is not commonly reported as either an isolated palsy or part of a syndrome [2]. We describe a rare case of NPC in a 65-year-old patient who first presented with facial nerve palsy**.**

## Case Report

A 65 year old male patient presented with chief complaints of difficulty in closing his left eye, deviation of angle of mouth to right side and swelling in left neck for the past 2 months. There was no history of nasal obstruction or bleeding from nose. The patient was also having decreased hearing on left side. On examination the patient had House-Brackman grade IV facial nerve palsy (Figure

1) which was of lower motor neuron type and left palatal palsy apart from which all other cranial nerve examination was normal. On anterior rhinoscopy examination there was a deviated nasal septum to left side other than which there was no mass visualized. On neck examination the patient was having multiple cervical lymphadenopathy involving left level II and V, largest of which was at level II which was measuring 2×2 cm mobile, non-tender, hard and overlying skin is normal. On diagnostic nasal endoscopy there was a mass visualized in lateral wall of nasopharynx just behind the opening of the Eustachian tube on the left side. Fine needle aspiration cytology (FNAC) from the left level V was suggestive of carcinomatous deposits with possibility of squamous cell carcinoma. Subsequently patient was subjected to contrast enhanced computed tomography base of skull to clavicle which was suggestive of a heterogeneously enhancing mass lesion with central non enhancing area involving fossa of rosenmuller torus tubarius, infilterating medial and lateral pterygoid muscle, left masticator and parapharyngeal space and deep lobe of left parotid. There was also erosion of skull base with intra cranial extension into temporal region (Figure 2). Endoscopic nasal examination was done and punch biopsy was taken from fossa of rosenmuller. Histopathological examination was suggestive of non-keratinizing squamous cell carcinoma undifferentiated type. Then patient was referred to Department of radiotherapy where he received 66Gy in 33 fractions delivered to the nasopharynx.

**Figure 1:** House-Brackmann grade IV facial nerve palsy left side.

**Figure 2:** Contrast enhanced computed tomography (coronal and axial section) showing heterogeneously enhancing mass involving fossa of rosenmuller torus tubarius, infilterating medial and lateral pterygoid muscle, left masticator and parapharyngeal space. There is also erosion of skull base with intra cranial extension.

## Discussion

Because of NPC's gradual development and vague early symptoms, early identification is frequently challenging. Depending on the disease's stage at the time of manifestation, NPC symptoms can vary. Painless cervical lymphadenopathy is the most typical presenting symptom (75%) [1]. At the time of diagnosis, one in five individuals' exhibit signs of cranial nerve involvement. Middle cerebral fossa floor and foramen lacerum proximity allow for direct tumour extension into the cranium as well as involvement of nearby nerves. The abducent nerve is involved most commonly [3].

NPC rarely causes facial nerve palsy, with an incidence of less than 1%. Tumor involvement has been observed in 5% of all cases of facial nerve paralysis. Facial palsy can be brought on by tumour involvement anywhere in the course. The involvement of the facial nerve at the Cerebellopontine angle (CPA) occurs through metastasis (through hematogenous, cerebrospinal fluid, or leptomeningeal), whereas in the middle ear, it either occurs directly (via the Eustachian tube or direct invasion from the parapharyngeal region) or through metastasis [4].

Regardless of the staging, surgical resection often does not play a significant role in the initial management of NPC, with chemoradiotherapy being the gold standard [5]. The anatomical region is a challenging target to navigate for complete tumour excision with clear margins. Additionally, these neoplasms are

historically responsive to a combination of radiation with or without chemotherapy, depending on the staging [6]. Surgery is only used in these situations when the tumour reoccurs after chemoradiotherapy, which may necessitate the use of salvage surgery with neck node dissection for curative purposes [5,7]. NPC is extremely radiosensitive tumor and the mainstay of treatment for primary local and regional disease is invariably radiotherapy, almost irrespective of the stage of the disease. Additional chemotherapy is advocated in patients with advanced disease to improve overall results [1].

## Conclusions

The peculiarity of this situation is the involvement of CN VII. Due to the patient's presentation with vague non-specific symptoms, early identification of NPC is highly challenging. Therefore, any physician or Otorhinolaryngologist must conduct a thorough clinical, endoscopic, and radiological evaluation on any patient who is going to come with isolated cranial nerve palsy or multiple cranial nerve palsy with or without cervical lymphadenopathy.

## Conflict of Interest

None.

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