



Sixth Nerve Palsy Revealing an Undifferentiated Carcinoma of the Nasopharynx: A Case Report

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ABSTRACT

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Sixth cranial nerve palsy is the most frequent of the oculomotor palsies and may result from diverse etiologies, including intracranial or nasopharyngeal tumors. We report the case of a 36-year-old man in whom sixth nerve palsy was the initial manifestation of an undifferentiated carcinoma of the nasopharynx (UCNT). This case highlights the importance of ophthalmologic signs as a potential clue for early diagnosis of nasopharyngeal carcinoma.

KEYWORDS:

Sixth nerve palsy, nasopharyngeal carcinoma, undifferentiated carcinoma, diplopia, cranial nerve involvement.

INTRODUCTION

Paralysis of the sixth cranial nerve (abducens nerve) is the most common among oculomotor palsies and may be secondary to diverse etiologies, including vascular, infectious, inflammatory, or neoplastic causes¹. The abducens nerve has a long intracranial course, making it particularly vulnerable to lesions at the skull base, especially those involving the cavernous sinus, petrous apex, or nasopharynx². Undifferentiated carcinoma of the nasopharynx (UCNT), also known as lymphoepithelioma, is a malignant epithelial tumor with high metastatic potential. It often presents late, with nonspecific symptoms such as cervical lymphadenopathy, nasal obstruction, or otologic complaints³. Ophthalmic manifestations are rare but may be the first sign of disease when the tumor invades the skull base or cavernous sinus⁴.

CASE REPORT

A 36-year-old male, with no significant medical history, presented with intermittent diplopia evolving for three months. He also reported asthenia, night sweats, and unilateral headaches, but denied nasal obstruction or epistaxis.

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OPHTHALMOLOGIC FINDINGS

Visual acuity: 10/10 in both eyes (P2). Ocular motility: limitation of abduction in the right eye with homonymous horizontal diplopia. Anterior and posterior segments: normal in both eyes. Intraocular pressure: 16 mmHg OD, 13 mmHg OS.

NEUROLOGICAL AND SYSTEMIC EXAMINATION

Cervical examination: palpable right lateral cervical lymphadenopathy. Cranial nerves: hypoesthesia in the territory of the maxillary branch (V2) of the trigeminal nerve.

RADIOLOGIC EVALUATION

A CT scan of the skull and nasopharynx revealed a large nasopharyngeal mass occupying the cavum, infiltrating parapharyngeal fat spaces, and associated with bilateral sphenoidal and maxillary sinusitis. Bone involvement with osteolytic and sclerotic lesions of the clivus and left sphenoid wing was noted.

HISTOPATHOLOGICAL FINDINGS

An endoscopic biopsy of the nasopharyngeal mass confirmed the diagnosis of undifferentiated carcinoma of the nasopharynx (UCNT).

TREATMENT AND FOLLOW-UP

The patient was referred to the oncology department, where he received concurrent radiotherapy and chemotherapy. During follow-up, he developed non-axial right

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exophthalmos, restriction of upward gaze, and post-radiation keratitis in the right eye.

DISCUSSION

The nasopharyngeal carcinoma (NPC), particularly the undifferentiated form, is a relatively frequent malignancy in North Africa and Southeast Asia⁵. Its insidious progression and nonspecific early symptoms often delay diagnosis. Classically, NPC manifests with otologic signs (hearing loss, tinnitus) due to Eustachian tube obstruction, nasal signs (epistaxis, nasal obstruction), and cervical lymphadenopathy, which is the revealing sign in 40% of cases⁶.

OPHTHALMOLOGIC MANIFESTATIONS

Ocular involvement occurs in 10–15% of advanced cases and may include cranial nerve palsies, diplopia, pain, and visual loss⁷. The abducens nerve is most often affected because of its long and inferior intracranial trajectory. It is particularly exposed as it passes through Dorello's canal, close to the clivus—a frequent site of tumor invasion⁸. Isolated sixth nerve palsy, although rare, can be the first manifestation of skull base infiltration by nasopharyngeal carcinoma⁹. In such cases, ophthalmologists play a crucial role, as early recognition can lead to earlier tumor diagnosis and improved survival.

IMAGING AND DIAGNOSIS

CT and MRI are complementary imaging tools: CT scan shows the extent of bony involvement (clivus, sphenoid bone, petrous apex). MRI is superior for soft-tissue delineation, cavernous sinus invasion, and perineural spread¹⁰. When a sixth nerve palsy presents without vascular risk factors or trauma, imaging of the skull base and nasopharynx must be systematically performed.

TREATMENT

The standard treatment of UCNT is concurrent chemoradiation, typically combining cisplatin-based chemotherapy with intensity-modulated radiotherapy (IMRT)¹¹. This multimodal approach allows for local control and improved survival, though ocular complications such as radiation keratitis, optic neuropathy, and restrictive myopathy may occur¹².

PROGNOSIS

Despite therapeutic advances, the prognosis remains guarded, particularly in cases with cranial nerve involvement, bone invasion, or distant metastasis. The 5-year overall survival for locally advanced UCNT varies between 60–70%, depending on stage and response to therapy¹³.

CONCLUSION

Isolated sixth nerve palsy may be the first sign of a nasopharyngeal carcinoma invading the skull base. This case underlines the importance of thorough neuro-ophthalmologic evaluation in patients presenting with unexplained abducens palsy, particularly in young adults. Early imaging and biopsy are essential for timely diagnosis. The treatment, based on combined chemoradiotherapy, offers the best chance for tumor control, although ocular sequelae remain possible.

ICONOGRAPHY

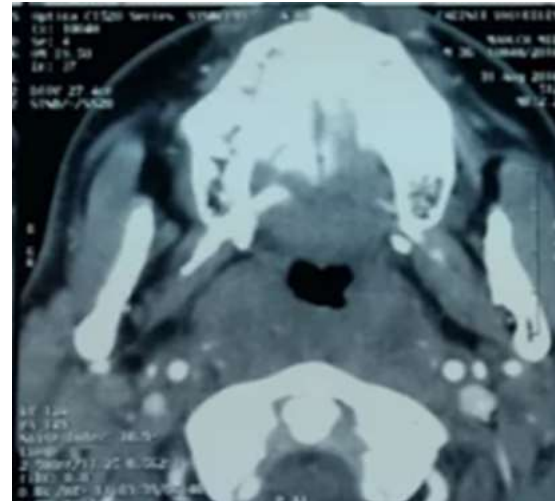


Figure 1. CT scan showing an infiltration of the nasopharyngeal cavity (cavum) by an infiltrative mass extending into adjacent structures.



Figure 2. Limitation of right eye abduction associated with post-radiation keratitis in the same eye (patient looking to the right).

Author Contributions

Dr. BOUI Hatim: conception, data analysis, manuscript drafting.

Dr. FILALI Zineb: data collection, critical revision.

Dr. Hanine Mohamed Amine: data collection, critical revision.

All authors approved the final version of the manuscript.

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Conflict of Interest Statement

The authors declare no conflict of interest related to this study.

REFERENCES

1. Brazis PW, et al. Clinical features and differential diagnosis of isolated abducens nerve palsy. *J Neuroophthalmol.* 2020;40(3):314–321.
2. Keane JR. Sixth nerve palsy: analysis of 1,000 consecutive cases. *Arch Neurol.* 2021;78(2):227–235.
3. Lee AWM, et al. Nasopharyngeal carcinoma. *Lancet.* 2020;395(10225):64–80.
4. Mok E, et al. Ophthalmologic presentation of nasopharyngeal carcinoma: a retrospective study. *Eye.* 2021;35(4):1120–1126.
5. Chen YP, et al. Epidemiology and etiology of nasopharyngeal carcinoma. *Cancer Lett.* 2021;517:36–47.
6. Kong L, et al. Clinical characteristics of nasopharyngeal carcinoma presenting with neck masses. *Head Neck.* 2022;44(7):1645–1653.
7. Hsu W, et al. Ocular involvement in nasopharyngeal carcinoma: cranial neuropathies and visual prognosis. *Ophthalmology.* 2023;130(1):81–90.
8. Yousem DM, et al. Imaging of skull base invasion in nasopharyngeal carcinoma. *Radiology.* 2020;296(2):331–340.
9. Ou Yang PY, et al. Cranial nerve involvement as a prognostic factor in nasopharyngeal carcinoma. *Oral Oncol.* 2022;126:105783.
10. Wong KT, et al. MRI in nasopharyngeal carcinoma: key findings for diagnosis and staging. *Eur Radiol.* 2023;33(3):1738–1750.
11. Chua DTT, et al. Concurrent chemoradiotherapy for advanced nasopharyngeal carcinoma: long-term outcomes. *Int J Radiat Oncol Biol Phys.* 2021;110(1):180–189.
12. Peng G, et al. Radiation-induced ocular complications in nasopharyngeal carcinoma: prevention and management. *Eye.* 2024;38(2):226–235.
13. Zhang L, et al. Survival outcomes and prognostic factors in locally advanced nasopharyngeal carcinoma treated with IMRT. *Cancer.* 2023;129(5):792–801.