



(CASE REPORT)



Nasopharyngeal Carcinoma (NPC): Strong suspicion in persistent otitis media with effusion

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Abstract

Nasopharyngeal carcinoma (NPC) is an intriguing disease with unique epidemiological features. It shows a distinct geographical distribution with well-defined, high-risk ethnic groups, age and gender. This neoplasm exhibits strong associations with the Epstein-Barr virus, dietary and genetic factors. Radiation therapy is the mainstay of treatment and imaging plays a central role in tumor mapping and radiation therapy planning. The purpose of the current manuscript is to present a case of a 65-year-old male patient that examined in the outpatient ENT Department of our hospital, reported a persistent otitis media in the left ear, for about one year. It is important always to raise the suspicion of nasopharyngeal carcinoma, in patients with persistent otologic symptoms, that do not improve despite therapy.

Keywords: Nasopharyngeal carcinoma; Otitis media; Effusion; Otalgia; Persistent symptoms; Diagnosis; Treatment

1. Introduction

NPC has several features that differ according to geographic area (1). In 2018, the global incidence rates varied from 2.1 to 0.4 per 100.000 in Asia (East and South East) and Europe, respectively (2). In endemic areas, the incidence increases after 30 years of age, peaks at 40-59 years and decreases thereafter, whereas in low incidence areas, the incidence of NPC increases with age and has a bimodal peak (3). Five-year survival rates are 72% in the youngest age group (15-45 years) and 36% in the oldest group of patients (65-74 years) (4). In general, the prognosis is better for women than men (5, 6).

Nasopharyngeal carcinoma (NPC) presents mostly with locally advanced disease and is treated with multimodal therapy. It occurs in the epithelial lining of the nasopharynx, and has a variety of subtypes, pathologically. The most common type of NPC is the nasopharyngeal squamous cell carcinoma (NPSC), while additional pathological types of NPC include adenocarcinoma, lymphoma and sarcomas, constituting less than 5% of all NPC malignancies (7, 8). The patients with a nasopharyngeal neoplasm frequently present with at least four symptoms including nasal symptoms (epistaxis, nasal obstruction), neck masses, otological symptoms (otalgia, sensation of an obstructed ear, conductive hearing loss due to serous otitis, tinnitus, deafness) and cranial nerve palsies. Despite the fact that nasopharyngeal tumors usually infiltrate the eustachian tube muscles and do not involve the eustachian tube opening, the association of nasopharyngeal carcinoma with middle ear effusion relates with poor middle ear ventilation (9). We present the case of a patient reported otologic symptoms for about one year. His symptoms did not improve despite therapy, so he decided to address our clinic, for further investigation.

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2. Case report

A 65-year-old male patient examined in the outpatient ENT Department of our hospital, during October of 2021. He reported left ear pain, hearing loss and ear fullness for about one year. He had already addressed outpatient doctor once. The doctor set the diagnosis of otitis media with effusion, because of Eustachian tube dysfunction and had prescribed a combined antibacterial medical treatment of amoxicillin / potassium clavulanate and cortisone per os, nasal washes with normal saline and nasal decongestants. The patient followed the recommended therapy, but despite the implicit improvement of symptoms, he did not improve. Unfortunately, according to the patient's medical history, he did not undergo rhinoendoscopy of the nasopharynx and he did not receive any other medication. Through clinical examination, otoscopically, the left ear drum showed up otitis media with effusion. Cervical palpation showed swollen lymph nodes in the left supraclavicular fossa and in the left posterior cervical triangle (level VB). The rhinoendoscopy of the nasopharynx revealed an ulcerated mass with an irregular surface on the left side of the nasopharynx (Figure 1).

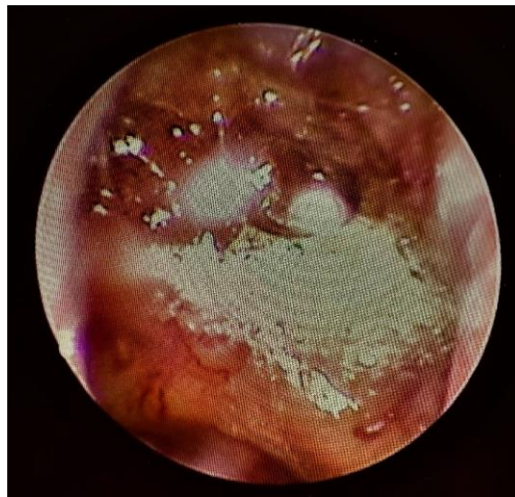


Figure 1 Mucosal projection on the left side of the nasopharynx

For the evaluation of hearing loss, the 512-Hz tuning fork was used. The Rinne test was negative, while in the Weber test, sound lateralized to the left ear, suggesting conductive loss in the left ear. The audiogram confirmed the conductive hearing loss in the left ear. The tympanogram [type B] revealed middle ear effusion. Computed tomography (CT) of temporal bone pneumatization showed a left mastoid cell occupation with a pronounced projection of the nasopharynx, but without pathological contrast enhancement in its imaged structures (Figures 2, 3).

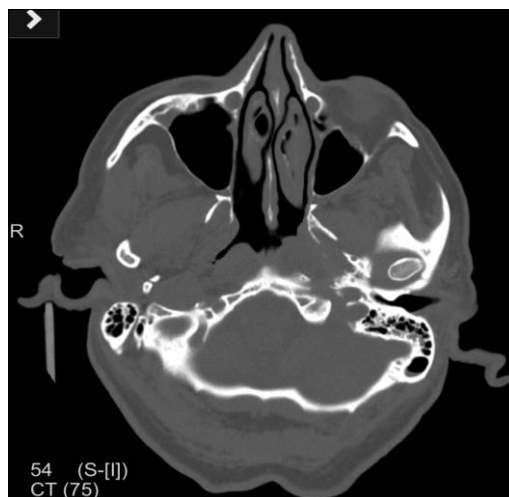


Figure 2 Computed tomography (CT) demonstrating a mucosal projection on the left side of the nasopharynx

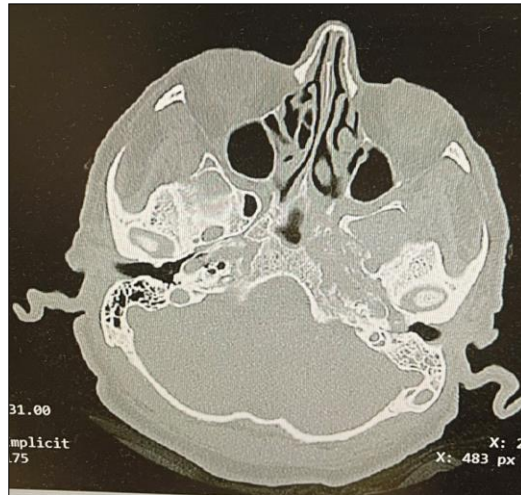


Figure 3 Computed tomography (CT) of temporal bone demonstrating left mastoid cell occupation

A biopsy of the lesion performed under local anesthesia. Biopsy of the lesion was fixed in formalin and sent to a referral laboratory for histological preparation and examination. An immunohistochemistry ended up that the carcinoma morphologically looks like non-keratinising carcinoma. The insertion of ventilation tube in the left ear was held, in order to cure the middle ear effusion. No pathological findings were found in computed tomography (CT) chest. The findings through a positron emission tomography/computed tomography (PET/CT) scan were compatible with the previous findings through CT. The patient combined modality therapy consisting of surgery and radiotherapy. A repeated follow up examination is proposed for the patient since now.

3. Discussion

Nasopharyngeal carcinoma is a highly morbid disease with poor survival (10). It is characterized by local infiltration of the roof or posterior or lateral wall of the nasopharynx. It extends into the parapharyngeal space or may extend to the base of the skull and the cranial nerves. Intracranial extension may occur through the foramen lacerum, while posterolateral spread can occur through the sinus of Morgagni (11). Its management remains extremely difficult, not only for otolaryngologists but also for radiation oncologists and medical oncologists. A clear understanding of its etiology is still lacking, but nasopharyngeal carcinoma is widely suspected to be the result of both genetic susceptibility and exposure to environmental factors, or Epstein-Barr virus infection. With no clear cause, treatment is controversial (10). Although nasopharyngeal carcinoma (NPC) is the most common primary malignancy of the nasopharynx, it is an uncommon malignancy in much of the Western world. Over the last several years, there have been important changes in the terminology used for histologic classification of NPC and important changes to the American Joint Committee on Cancer TNM staging of NPC. Accurate imaging assessment is critical for diagnose, stage and plan radiation treatment and for ongoing follow-up and surveillance (12).

The term 'nasopharyngeal carcinoma' refers to all squamous cell cancers which are categorized according to the 4th edition of the World Health Organization (WHO) into keratinising, non-keratinising (subdivided into differentiated and undifferentiated) and basaloid carcinoma subtypes. Keratinising cancer is more frequent in nonendemic than endemic areas, whereas non-keratinising cancer comprises the vast majority of cases and is linked to EBV infection (13).

The diagnosis include a medical history, complete physical examination with examination of cranial nerves, biochemical serum test, nasopharyngoscopy, audiometric testing and radiological imaging (CT, MRI). MRI is the most accurate way to determine the location, shape, local invasion, extent, texture of the lesion and cervical lymphadenopathy and should be preferred whenever available. FDG-PET adds further accuracy in staging as it is a better imaging modality for detecting distant metastases and is recommended in locally advanced disease (14).

Radiotherapy (RT) alone, combined RT - surgery or chemotherapy are all included in treatment approaches of NPC. The appropriate treatment will be determined by the extent and stage of the disease (15). Stage I disease is treated by RT alone. Radiotherapy (RT) is the mainstay of treatment, although Intensity-modulated RT (IMRT) is preferred now because it has fewer adverse effects (xerostomia, trismus, dysphagia, temporal lobe injury) (16, 17). Also, proton therapy represents a promising approach for patients with locally advanced NPC (18-20). Patients with stage II NPC benefit from concurrent chemoradiotherapy (CRT) with cisplatin (21). Stage III and IVA disease are treated also by CRT

with cisplatin (22). However, as a general principle, concurrent chemotherapy (ChT) is not tolerated as well in elderly patients compared with younger patients and consequently dose intensity is reduced. Thus, patient selection is crucial. Finally, patients with local recurrences not invading the carotid artery and not extending intracranially are candidates for nasopharyngectomy and lymphatic recurrences in the neck can be treated with neck dissection (23, 24).

However, an optimal radiation regimen has not been determined yet. Reports in the literature regarding the role of chemotherapy for advanced disease are conflicting and treatment of local recurrences remains unclear. Still, advances in immunologic research and chemotherapy offer hope for better control of the disease.

4. Conclusion

Various factors can cause obstruction of the eustachian tube and creation of serous otitis. It has to be highlighted that in every case of persistent otitis media with effusion, further clinical investigation through rhinoendoscopy and imaging of the nasopharynx must be performed. We hope that our assessment of the recent literature will provide otolaryngologists with a more clear understanding of the etiology and management of nasopharyngeal carcinoma.

Compliance with ethical standards

Disclosure of conflict of interest

The authors declare no conflicts of interest regarding the publication of this paper.

Statement of informed consent

The patient provided written informed consent to participate in this study as well as for the publication of any potentially identifiable images or data included in this article.

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