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CASE REPORT

Complete endoscopic resection of low-grade nasopharyngeal papillary adenocarcinoma: a case report



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Introduction

Nasopharyngeal carcinoma (NPC) is a frequent tumor, mainly in Asian countries. In Brazil, an incidence of 0.5–1 case per 100,000 male individuals is estimated, with less than 0.3 cases per 100,000 in females. Some risk factors potentially related to NPC include infection by the Epstein-Barr Virus (EBV) and family history of the occurrence of this neoplasm; other factors with a moderate to weak risk of association with NPC include eating habits, chronic respiratory diseases, use of tobacco, and occupational risks.¹ The most common histological type is the squamous cell carcinoma, with the adenocarcinoma being an infrequent subtype. Among the adenocarcinoma subtypes, the primary nasopharyngeal papillary tumor is an extremely rare type, with few cases

described in the literature, and no reports being found in Brazil. The papillary adenocarcinoma has no predilection for gender or age, affecting patients aged 9–74 years, and is usually restricted to the nasopharynx.²

We present a case of a 12-year-old child with nasal obstruction for about 2 years due to a lesion diagnosed as nasopharyngeal papillary adenocarcinoma after biopsy, who underwent total endoscopic resection of the lesion.

Case report

A 12-year-old white male was referred to the Oncology and Otorhinolaryngology services of Hospital das Clínicas in Ribeirão Preto due to snoring and nocturnal apnea, bilateral nasal obstruction, hyposmia and hypogeusia for over 2 years. Nasofibroscopy assessment showed a verrucous lesion occupying the entire nasopharynx. Due to the verrucous aspect of the lesion, a biopsy was performed, the result of which was compatible with low-grade papillary adenocarcinoma (Fig. 1A).

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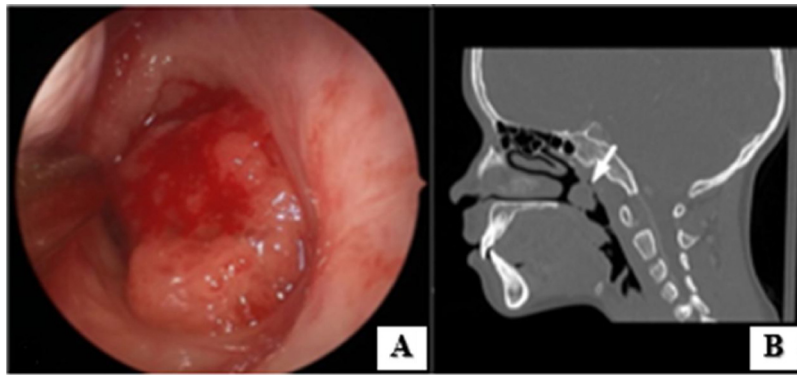


Figure 1 A. Nasofibroscope image in the right nasal cavity, identifying a verrucous lesion in the nasopharynx. B. Sagittal CT scan showing lesion in the nasopharynx (white arrow).

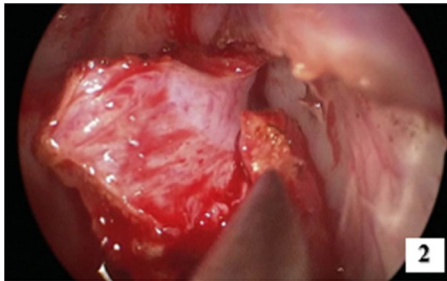


Figure 2 Image of resection with posterior septum margins showing healthy mucosa in this region.

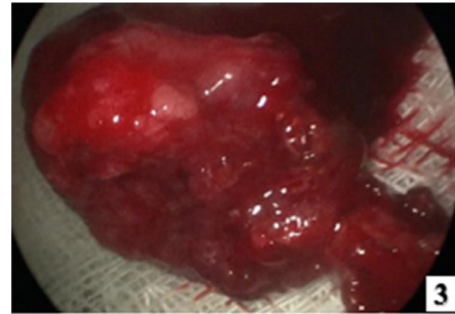


Figure 3 Image showing a pedunculated lesion removed in its entirety with macroscopically healthy margins.

The contrast-enhanced computed tomography (CT) showed a mass with well-defined limits and lobulated borders in the nasopharynx, with no signs of bone or adjacent structure invasion (Fig. 1B). The magnetic resonance imaging (MRI) showed an irregular exophytic lesion occupying the nasopharynx with hyposignal in T1 and intermediate in T2 with slight contrast enhancement measuring approximately $1.8 \times 1.6 \times 1.7$ cm, without involvement of lymph nodes or local metastases. Ultrasonography and contrast-enhanced computed tomography of the cervical region and thorax showed a normal-looking thyroid and salivary glands, with no evidence of affected lymph nodes or metastases, with T1M0N0 final staging. PCR and serology for EBV anti-IGG and anti-IGM were negative.

Total excision via nasal endoscopic surgery was chosen. In the intraoperative period, we observed a pedunculated lesion with a verrucous aspect, with attachment to the nasopharynx roof and posterior wall of the nasal septum according to the previous nasofibroscope (Fig. 1A). The upper limit was the nasopharynx roof, the medial limit was the tubal torus, and the septal mucosa and posterior part of the vomer were anteriorly removed (Fig. 2). The lesion was completely removed, with a pedicle and borders showing a macroscopic mucosa with a healthy aspect (Fig. 3).

The anatomopathological analysis disclosed the presence of non-capsulated neoplasm, consisting of papillary and glandular growth patterns. The cells had a columnar and cuboidal aspect, with round to oval nuclei and uniform chromatin, without atypia or mitosis figures, and eosinophilic cytoplasm. The papillary structures were complex, with arborization and hyalinized and edematous fibrovascular

axes. The glandular structures were juxtaposed, sometimes resembling a cribriform aspect. Psammomatous bodies, necrosis, perineural infiltration or angiolymphatic embolization were not observed and the margins were disease-free. The immunohistochemical study showed diffuse positivity for EMA, CK7 (Fig. 4A) and TTF1 (Fig. 4B). Negativity for thyroglobulin (Fig. 4C), p63 and CK5/6 were also observed. The cell proliferation rate was 5%.

The patient showed good postoperative evolution, remaining asymptomatic, with snoring and oral breathing improvement. Three months postoperatively, a vegetating mass was visualized in the nasopharynx. A resection was performed, of which biopsy showed no signs of malignancy. Oncological staging was performed with positron-emission tomography (PET-CT), which did not show hypermetabolic lesions with characteristics of a neoplasm. The patient is being followed with imaging exams.

Discussion

The nasopharyngeal carcinoma is a tumor frequently diagnosed in countries in Southeast Asia, the Middle East and North Africa, with squamous carcinoma being the most common histological type. Other histological types include lymphoid carcinoma, mesenchymal carcinoma, adenocarcinomas and neurogenic tumors.³

Primary nasopharyngeal papillary adenocarcinoma (NPC) is a rare tumor, first described in 1988 by Wenig et.al.⁴ This neoplasm is responsible for approximately 0.48% of

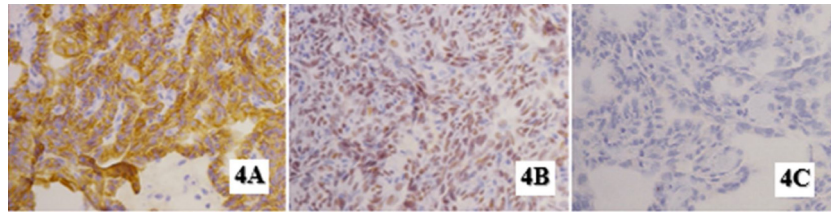


Figure 4 A. Immunohistochemistry positive for CK7. B. Immunohistochemistry positive for TTF1. C. Immunohistochemistry negative for Thyroglobulin. 400× magnification.

all nasopharyngeal carcinomas.³ There is no preference for gender and age and its most common locations are the lateral/posterior region and the roof of the nasopharynx. The most common symptom is nasal obstruction, but patients may still have epistaxis, secretory otitis media, hearing loss, apnea and postnasal drip.² We did not find any other reports of papillary adenocarcinoma in the nasopharynx in Brazil despite the search carried out in the PubMed tool (<https://pubmed.ncbi.nlm.nih.gov/> — accessed in August 2020) using the MeSH terms: “papillary adenocarcinoma” AND (“Nasopharynx” OR “nasopharyngeal”).

Macroscopically, these tumors are soft or psammomatous and exophytic with papillary, nodular or polypoid appearance, non-encapsulated and non-infiltrating. Papillary structures are complex in arborization and hyalinized, with fibrovascular nuclei. Areas of transition from normal nasopharyngeal surface epithelium and neoplastic proliferation are suggestive of superficial epithelial derivation.⁵ Tumor cells have a pseudostratified appearance. The nuclei are round to oval and the cytoplasm is eosinophilic. There is mild to moderate nuclear pleomorphism and loss of basal polarity. Mitosis, necrosis, vascular, lymphatic, and perineural invasion are generally not seen.⁶

The main differential diagnoses include papillary adenocarcinoma of the thyroid, low-grade papillary adenocarcinoma of the salivary gland and a papillary variant of intestinal type adenocarcinoma. The differentiation between histological subtypes is made through histological and immunohistochemical analyses. While the primary nasopharyngeal papillary adenocarcinoma is positive for CK-7 and TTF-1 and negative for thyroglobulin, CK20, CDX-2, villin and S-100, the thyroid papillary adenocarcinoma is positive for thyroglobulin, the intestinal type is positive for CK20, CDX-2 and villin, and the one originating from the salivary gland is positive for protein s-100.^{6,7}

Despite the suggestion of an association with the Epstein–Barr Virus (EBV), the literature is not definitive about its presence and the development and carcinogenesis of this neoplasm.⁸ As for the clinical characteristics, the NPC is an indolent neoplasm that rarely presents metastases. The treatment of choice is complete surgical excision, which is an independent predictor of survival in multivariate analyses. Studies have not shown a proven benefit regarding the use of radiotherapy or chemotherapy adjuvant to complete resection of these tumors, showing high rates of recurrence.⁹ A new treatment option, described by Wang et al.¹⁰ in a study carried out in Taiwan, with apparent good response and low morbidity, is adjuvant photodynamic therapy associated with topical 5-aminolevulinic acid in the tumor, when there is no possibility of resection. However,

this should still be considered an experimental therapeutic approach for this disease at the moment. Given the rarity of this type of tumor associated with the immense scarcity of data in the literature, it is particularly difficult to make a comparative assessment of the effectiveness of surgical and non-surgical treatments.

Conclusion

Primary low-grade papillary adenocarcinoma of the nasopharynx is a rare neoplasm with few cases described in the literature, requiring randomized studies capable of guiding the best therapeutic approach. Complete lesion resection, associated with otorhinolaryngological and oncological followup in a coordinated way for early detection of recurrences seems to be the most accepted strategy at the moment. In cases where complete resection of the lesion is not possible, new adjuvant treatment approaches are undergoing investigation with preliminary favorable results.

Conflicts of interest

The authors declare no conflicts of interest.

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