

A Locally Advanced Squamous Cell Carcinoma Arising from Sinonasal Inverted Papilloma: A Case Report

Chaimae Nekro^{1, 3*}, Najoua Belhaj¹, Ihssane Allouch¹, Sophia Nitassi², Razika Bencheikh², Anas Benbouzid², Abdelilah Oujilal², Leila Essakalli²

¹Resident Physician in Otorhinolaryngology, Department of Otorhinolaryngology, Head and Neck Surgery, Ibn Sina, University Hospital, Rabat, Morocco

²Professor of Otorhinolaryngology, Department of Otorhinolaryngology, Head and Neck Surgery, Ibn Sina University Hospital, Rabat, Morocco

³Faculty of Medicine and Pharmacy of Rabat, Mohammed V University, Rabat, Morocco

DOI: [10.36347/SJMCR.2019.v07i11.015](https://doi.org/10.36347/SJMCR.2019.v07i11.015)

| Received: 05.11.2019 | Accepted: 12.11.2019 | Published: 25.11.2019

*Corresponding author: Chaimae Nekro

Abstract

Case Report

Nasal and sinonasal inverted papilloma is an uncommon benign tumor, which is complicated by malignancy in approximately 10% of cases. Preoperative differential diagnosis between inverted papilloma with or without squamous cell carcinoma may be useful in planning the method of surgery. However, for squamous cell carcinoma associated with IP, the presence of squamous cell carcinoma may be unknown until after removal of the entire diseased mucosa, because some patients with squamous cell carcinoma associated with inverted papilloma had no evidence of squamous cell carcinoma in their initial biopsy specimens. We report a case of a voluminous and locally advanced squamous cell carcinoma arising from sinonasal inverted papilloma of a 64-year-old man, with review of literature. The patient underwent oncological surgery, with total excision of the tumor by lateral rhinotomy approach, and received adjuvant radiotherapy.

Keywords: Sinonasal inverted papilloma, squamous cell carcinoma, human papilloma virus, lateral rhinotomy, radiotherapy.

Copyright @ 2019: This is an open-access article distributed under the terms of the Creative Commons Attribution license which permits unrestricted use, distribution, and reproduction in any medium for non-commercial use (NonCommercial, or CC-BY-NC) provided the original author and source are credited.

INTRODUCTION

Inverted papilloma (IP) is a tumor of the nasal cavities and paranasal sinuses, with three main characteristics that distinguish it from other sinonasal tumors : relative local aggression, high rates of recurrence, and possible association with carcinoma [1]. Etiology remains little understood, but an association with human papilloma virus has been reported in up to 40% of cases, raising the suspicions of implication in the pathogenesis of inverted papilloma [1]. Histologically, inverted papillomas have endophytic growth, with polypoid changes of the nasal mucosa. The nasal mucosa presents a metaplasia of respiratory epithelium to squamous epithelium, while maintaining the basal membrane intact [2]. Inverted papilloma treatment is surgical, with the main aims of relieving symptoms and enabling pathologic examination of a complete specimen, notably to check for carcinoma [1]. The endoscopic technique seems to provide excision control rates comparable to the traditional open methods such as lateral rhinotomy and external frontoethmoidectomy [3]. The purpose of this study is to describe the pathologic, therapeutic features, and

prognosis in malignant transformation of Sinonasal inverted papilloma (SNIP).

CASE REPORT

A 64-year-old man presented with a three-month history of a progressively enlarging mass in the right cheek associated with symptoms of nasal airway obstruction and blood mixed nasal discharge. There was no history of trauma. Physical examination revealed a painless mass occupying the right cheek extending into the lower eyelid. This lump was 5 centimeter in diameter, red, firm and fixed on the deep plane (Figure-1). During endoscopic exploration of the nasal cavities, we noticed a pinkish lobulated and friable tumor bleeding on contact. Biopsy was performed and histopathological report came out to be inverted papilloma. Nasal and paranasal sinuses CT scan showed an expansive mass in the right nasal cavity involving the rhino-pharynx, destroying the lateral nasal wall with extension to the ipsilateral maxillary sinus, the ethmoidal sinus and the orbit (Figure-2). The CT images was suggestive of malignancy transformation to a squamous cell carcinoma. The mass was surgically

excised by lateral rhinotomy with medial maxillectomy. After histopathological examination, the final diagnosis established was squamous cell carcinoma arising from

sinonasal inverted papilloma. The patient was referred to a cancer center and received combined radiotherapy and chemotherapy.



Fig-1: Squamous cell carcinoma arising from sinonasal inverted papilloma with extension to the eyelid

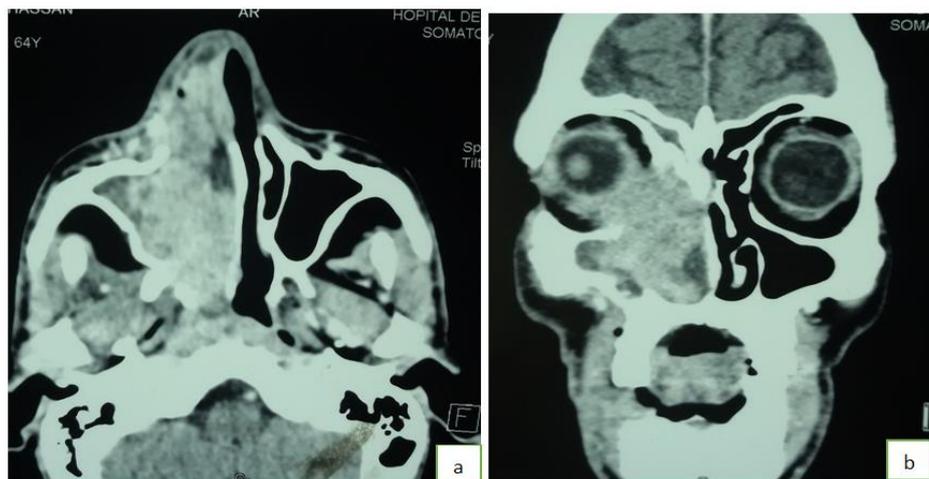


Fig-2: CT scan in axial (a) and coronal (b) plane showing the extension to the maxillary sinus and the orbit

DISCUSSION

Nasal and sinonasal inverted papilloma is an uncommon benign tumor, which is complicated by malignancy in approximately 10% of cases [4]. Over the years, a growing number of studies have been carried out to explore the link between HPV infection, especially HPV type 18, and the malignancy of SNIP, but with conflicting results. HPV detection rates varied widely in malignant SNIP tissues, ranging from 0% to 100% [5]. Some studies have linked histological, morphological, and genetics features to malignant alterations, such as, increased neoplastic epithelium/stroma ratio, hyperkeratosis, elevated levels of epidermal growth factor receptor and transforming growth factor alpha [4].

IP is generally diagnosed at a late stage. Functional signs are non-specific, nasal obstruction, anterior and/or posterior rhinorrhea, headache, hyposmia or anosmia, epistaxis, or facial pain [1].

Epistaxis may be a specific symptom in squamous cell carcinoma (SCC) associated with IP [6]. Clinical examination by endoscopic exploration of the nasal cavities finds a reddish-gray lobulated tumor, more firm than an inflammatory polyp, with a fairly characteristic “raspberry” aspect. On palpation, IP are classically friable and bleed on contact [1] SCC associated with IP is a locally destructive tumor. Currently, only four cases of SNIP/SCC with cervical nodal metastasis are reported in the English-language literature [7].

There are no pathognomic features of IP on CT evaluation, these usually appear as a lobulated soft tissue density mass with or without any calcification most commonly arising from the middle meatus region. Advanced cases of IP extend into the adjacent sinuses, nasopharynx, and orbit [8].

MRI affords better evaluation of sinonasal disease .IP appears iso to hypointense inT1-weighted

images and hyper- intense to muscles inT2-weighted images. A “convoluted cerebriform pattern” is a well recognized MRI appearance, reported in up to 80% of IP. Presence of invasive changes and gross central necrosis is a clue to concomitant malignancy [8].

Preoperative differential diagnosis between IP with or without SCC may be useful in planning the method of surgery. However, for SCC associated with IP, the presence of SCC may be unknown until after removal of the entire diseased mucosa, because some patients with SCC associated with IP had no evidence of SCC in their initial biopsy specimens [6].

Complete surgical removal is the first option for the treatment of IP. Removal should be complete to avoid recurrence. The extent of the disease should be determined preoperatively by CT-imaging or MRI for proper planning [9]. Until the mid-1990s, the gold-standard was surgery on an external approach: usually paralateronasal with associated medial maxillectomy. Endoscopic treatment for IP is now for many authors the new gold-standard. However, endonasal endoscopic approaches are indicated only for tumors of limited extension, and an external or combined external/endoscopic approach remains indicated for certain locations [1].

Histologically, IP is characterized by thickened neoplastic epithelium inverted into the underlying connective tissue with an intact basement membrane. The tumor epithelium is composed of well differentiated columnar or ciliated respiratory epithelium with variable squamous differentiation [10]. One objective of pathologic examination is to rule out associated carcinoma. The most frequent histologic type is squamous cell carcinoma [1].

Radiation therapy (RT) may be considered in IP in two circumstances: associated carcinoma, and impossibility of surgery. For postoperative RT, the dose averages 56 Grays, whether resection was microscopically complete or not [1]. Median survival time of patients with SCC ex-papilloma is about 62.2 months and the 5 year survival rate of patients is 72.5% [11].

CONCLUSION

Although sinonasal papillomas are benign lesions, the malignancy potential allow us to consider them aggressive tumors. Malignancy should be considered when there is a rapid tumor growth, invasion of adjacent structures or nasal bleeding. Advancement in the endoscopic surgical techniques and the demand to limit the postoperative facial deformity require accurate mapping of the tumor extent using CT and MRI. The failure to identify carcinoma within an IP on preoperative biopsy is understandable because the

malignant tissue often accounts for only a small portion of the entire tumor. The treatment of choice is complete surgical resection of the lesion. Because relapse can occur even several years after the primary tumours, long-term monitoring of patients is recommend.

REFERENCES

1. Lisan Q, Laccourreye O, Bonfils P. Sinonasal inverted papilloma: From diagnosis to treatment. *European annals of otorhinolaryngology, head and neck diseases*. 2016 Nov 1;133(5):337-41.
2. Molina JP, Pendas JL, Tapia JP, Marcos CA, Agüera SO, Nieto CS. Inverted sinonasal papillomas. Review of 61 cases. *Acta Otorrinolaringologica (English Edition)*. 2009 Jan 1;60(6):402-8.
3. Coutinho G, Marques J, Leal M, Spratley J, Fernandes MS, Santos M. Surgical outcomes of sinonasal inverted papilloma: a 17 year review. *Brazilian journal of otorhinolaryngology*. 2019 Feb 21.
4. Miyazaki T, Haku Y, Yoshizawa A, Iwanaga K, Fujiwara T, Mizuta M, Yoshida A, Satou S, Tamaki H. Clinical features of nasal and sinonasal inverted papilloma associated with malignancy. *Auris Nasus Larynx*. 2018 Oct 1;45(5):1014-9.
5. Zhao RW, Guo ZQ, Zhang RX. Human papillomavirus infection and the malignant transformation of sinonasal inverted papilloma: a meta-analysis. *Journal of Clinical Virology*. 2016 Jun 1;79:36-43.
6. Yasumatsu R, Nakashima T, Sato M, Nakano T, Kogo R, Hashimoto K, Sawatsubashi M, Nakagawa T. Clinical management of squamous cell carcinoma associated with sinonasal inverted papilloma. *Auris Nasus Larynx*. 2017 Feb 1;44(1):98-103.
7. Sharbel D, Chat V, Blumenthal D, Biddinger P, Byrd JK. Cervical nodal metastasis after malignant conversion of sinonasal inverted papilloma: Report of a rare case and literature review. *Oral oncology*. 2019 Mar 1;90:45-7.
8. Chawla A, Shenoy J, Chokkappan K, Chung R. Imaging features of sinonasal inverted papilloma: a pictorial review. *Current problems in diagnostic radiology*. 2016 Sep 1;45(5):347-53.
9. Eggers G, Mühling J, Hassfeld S. Inverted papilloma of paranasal sinuses. *Journal of Cranio-Maxillofacial Surgery*. 2007 Jan 1;35(1):21-9.
10. Wang MJ, Noel JE. Etiology of sinonasal inverted papilloma: A narrative review. *World journal of otorhinolaryngology-head and neck surgery*. 2017 Mar 1;3(1):54-8.
11. Sbrana MF, Borges RF, de Rezende Pinna F, Neto DB, Voegels RL. Sinonasal inverted papilloma: rate of recurrence and malignant transformation in 44 operated patients. *Brazilian journal of otorhinolaryngology*. 2019 Aug 12.