

## Huge Inverted Papilloma: Case Report

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### ABSTRACT

This is a case report of an experience managing a 65 years old Moroccan patient with a long-standing history of nasal obstruction resulting from a huge right nasal mass. Computed tomography, and biopsy were used to make a diagnosis of inverted papilloma. The mass was resected via endonasal surgery. Histopathologic examination of the resected specimen was consistent with an inverted papilloma that included squamous cell carcinoma. The pathogenesis of this lesion remains unclear although allergy, chronic sinusitis and viral infections have been suggested as possible causes.

**Keywords:** Inverted Papilloma; Endonasal Surgery; Squamous Cell Carcinoma; Nasal Obstruction

## Introduction

Inverted papilloma is a rare sinonasal tumor that mainly occurs in adults during the 5th decade. Three characteristics make this tumor very different from other sinonasal tumors: a relatively strong potential for local destruction, high rate of recurrence, and a risk of carcinomatous evolution. Treatment of choice is surgery, by endonasal endoscopic or external approach, depending on extension and tumoral characteristics. Follow-up is critical, to diagnose local relapse, which is often early but may also be late. The seriousness of this pathology lies in its association with carcinoma, which may be diagnosed at the outset or at recurrence during follow-up. It is important to diagnose recurrence to enable early treatment, especially in case of associated carcinoma or malignancy. This is a presentation of a case diagnosed and surgically treated for malignant inverted papilloma.

## Case report

A 65 years old male patient consults in our department with 23 years complaints of right nasal obstruction and chronic headache. There was also a history of rhinorrhea and chronic sinusitis. There was no history of smell disorders, diplopia, dacryocystitis nor epistaxis.

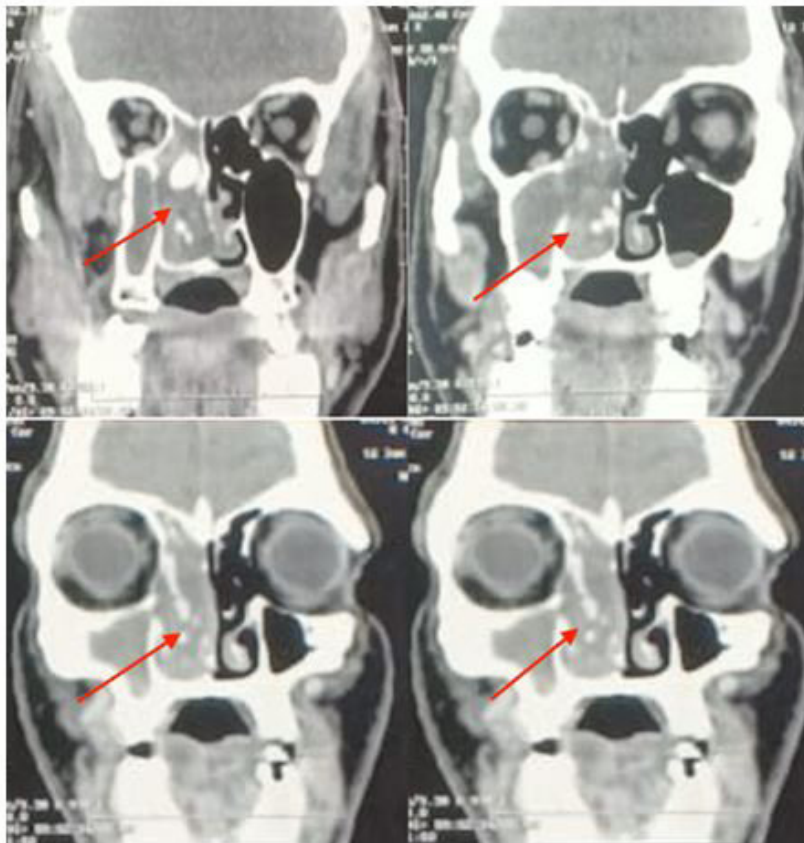
The patient started by experiencing intermittent nasal obstruction and nasal discharge without signs of infection in the upper respiratory tract. However, as time passed by, these symptoms aggravated and he started feeling a mass inside right nasal cavity. It was a slow growth since onset.

Physical examination of this patient showed a huge mass coming out of the right nostril, obstructing the right nasal cavity and distorting the shape of the nasal pyramid as well as the cheek where there is a loss of the upper part of the nasolabial fold. Anterior Rhinoscopy revealed a very large septum deviation towards the contralateral nasal cavity without causing obstruction. The right nasal cavity was completely filled with an infected mass with friable and necrotic tissue (Figure 1).



**Figure 1:** Physical examination of this patient showed a huge mass obstructing the right nasal cavity

Computed tomography (CT) was obtained and showed a large mass in the right nasal cavity and maxillary sinus. The mass infiltrates the soft palate and is responsible of osteolysis in the bone palate. The mass extends to the nasopharynx and also invades the inferior middle and superior nasal turbinate (Figure 2).



**Figure 2:** Computed tomography (ct) showed a large mass in the right nasal cavity

A biopsy of the mass was performed and the histologic examination revealed a moderately differentiated squamous cell carcinoma as a result of a malignant transformation of an inverted papilloma.

After multidisciplinary meeting, it was agreed that the patient will benefit from a resection of the mass by endoscopic treatment and resection using optic n°0 and n°30 was performed, the bulk the tumor was removed with combination of suction, debriding, and grasping instruments, medial maxillectomy, total ethmoidectomy and sphenoidotomy were performed and the entire mass was excised. The mass was so large that it spread to the nasopharynx.

The histologic examination revealed a moderately differentiated squamous cell carcinoma as a result of a malignant transformation, margins were negative. Post-operative radiotherapy was given.

After 3 months of follow ups after surgery, the patient no longer complained of nasal obstruction and headaches, as the air was flowing easily in the right nasal cavity.

## Discussion

Inverted papilloma is a rare but benign tumor that arises from the respiratory epithelium of the nasal cavity and paranasal sinuses it mostly affects middle aged men and exceptionally kids with a sex ratio of 3/1. It is a rare benign tumor with incidence rate of 0.6 cases/100,000 people/year [1]. It comprises 0.5–4% of all primary nasal tumors [2].

Inverted papilloma most commonly occurs along the lateral nasal most frequently related to the middle turbinate and middle meatus and maxillary ostium.

Despite being benign tumors, inverted papilloma is known for its locally aggressiveness, in fact as the mass grows and enlarges it results in anatomical remodeling. In this case the tumor had been growing for 23 years, and was responsible for distorting the shape of the nasal pyramid as well as the cheek where there is a loss of the upper part of the nasolabial fold. The tumor had also grown deeper and invaded adjacent structures as the nasopharynx and the soft palate.

Moreover, inverted papilloma is characterized by a tendency towards local bone destruction, in advanced cases the local destruction is very important with extension to the lamina paprecia and the base of the skull resulting in diplopia and dacryocystitis. In these cases, surgical procedures as orbital exenteration and craniofacial resection are performed to treat tumor extension.

The slow evolution of this tumor as well as the lack of specificity of the clinical signs explains the delay in diagnosis.

Despite being a benign tumor, approximately 5-12 percent of tumors can convert into a malignant tumor, so inverted papillomas should be treated very aggressively. The high rates of recurrence (50 % to 70 %) and transformation to carcinoma (3%-24%) justify classifying this tumor as premalignant [3].

Squamous cell carcinoma may present in the setting of inverted papilloma in three different circumstances. First, patients may present with small foci of squamous cell carcinoma within inverted papilloma. The patient may also present with malignancy as a separate synchronous lesion and not within inverted papilloma and finally, the patient may present with metachronous carcinoma in areas of prior resection of benign inverted papilloma

Malignant degeneration is related to several factors. However, several studies incriminate HPV 6 and 11 in the genesis of inverted papilloma and HPV 16 and 18 [4] in synchronous and metachronous malignant transformation resulting in in situ and or infiltrating carcinoma. More recently, certain genotypes of Epstein Barr virus have been correlated with tumor proliferation [4]. The studying of the viral etiopathogenesis opens new doors in the understanding and management of inverted papilloma and its transformation to carcinoma. On the anatomopathological level, squamous cell carcinoma is the most frequent histological type, as in our patient case.

The treatment of degenerated inverted papilloma is mainly surgical with complete resection including the base of tumor, as a result, there should be no visible residual mass tissue. Some authors indicated that postoperative radiotherapy is recommended for cases of advanced T3 or greater (T3 according to the TNM classification system), close or positive margins, involved critical regions, such as anterior skull base or orbit, recurrence of disease, and unresectable disease [5]. The external paralateronasal approach is preferred some authors especially if the tumor invaded the orbit or the base of the skull. However, endonasal surgery became the gold standard surgical approach in 1990 for localized or small nasal forms with nasal-ethmoid-sphenoidal extension [6].

The reluctance to use the endonasal approach is explained by the risk of incomplete excision and the possibility of neoplastic recurrence.

Because of the high risk of recurrence of inverted papilloma and malignant transformation a long-term follow-up is deemed necessary for treated patients.

## Conclusion

Though Inverted papilloma is a rare benign nasal and endonasal tumor, malignant transformation occurs in a variety of histology most commonly squamous cell carcinoma; hence the importance of fast diagnosis and efficient treatment. CT provides a lot of information about its extension, especially in the bone and adjacent structures. Endoscopic endonasal surgery has shown its value in the treatment of inverted papilloma.

## Conflicts of interest

All the authors have no personal or financial conflicts of interest regard this case report.

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## Consent

Written informed consent was obtained from the patient for publication of this case report and accompanying image.

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