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Original Research Article

Sinonasal papillomas in Quito, Ecuador

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ABSTRACT

Background: Sinonasal inverted papilloma is an unusual tumor of the nasal cavity and paranasal sinuses with potential for malignant transformation. The objective was to review the experience mostly using a similar open surgical approach.
Methods: Twenty-eight patients were included. Mean age was 54, 57% of male gender. five patients were previously operated elsewhere, twenty-five had unilateral complete nasal obstruction and mean duration of symptoms was 8months. A computed tomography was performed in all patients. The tumor was located within the nasal cavity in 9 cases, limited to the ethmoid sinus complex in one, extended to the maxillary sinus in 16 and to the nasopharynx or palate in one, each. Mean size was 5.2cm. Twenty-seven cases were benign and one was a transitional carcinoma originated in an inverted papilloma. Surgical resection of the tumor was performed through a Denker's approach in all the benign cases except a lateral rhinotomy in one recurrent lesion of limited ethmoid involvement. A partial maxillectomy was performed in the patient with malignancy. Minor postoperative complications occurred in 3 patients which was nasal bleeding, a cellulitis of the cheek with exophtalmus and an oro-antral fistula.
Results: After a mean follow-up of 33.6months, recurrent benign tumors were easily resected through the same approach in 5 patients. All patients have currently no evidence of disease.
Conclusions: Denker's approach was a very useful, rapid and safe surgical approach for treatment of middle size or extended sinonasal inverted papillomas and remains an alternative to current endoscopic resection.

Keywords: Inverted, Papilomas, Sinonasal

INTRODUCTION

Sinonasal inverted papilloma (SNIP) is an unusual tumor of the nasal cavity with potential for malignant transformation. The neoplastic growth of epithelium inverts into the underlying stroma rather than proliferates outward from the surface.[1,2] The most frequent site of origin is the lateral wall of the nasal cavity with eventual extension to the paranasal sinuses. These tumors appear more firm, bulky and less translucent than common nasal polyps even if both types of lesions can be present at the same time. For this reason, occasionally, a biopsy specimen can be not representative. Etiology is unknown but allergy, environmental pollutants and viruses have been mentioned as associated factors. Human papilloma viruses (HPV) 6, 11, 16 and 18 have been found associated to inverted papillomas.[3-5] Reports on the frequency of recurrence varies between 0 and 78% and the surgical modality has been related to this event.[2,5-8]

Surgery is currently the mainstay of treatment. Approaches vary from endoscopic to open limited or extended resections. Even if most recent series include patients treated endoscopically, author reviewed the experience, through a long period of time, using a similar surgical approach in most cases.

METHODS

Authors retrospectively reviewed the clinical records of all patients operated on for an inverted papilloma of the nasal cavity, at the social security hospital in Quito, Ecuador, South America, by the same surgeon from 1998 to 2013. Twenty-eight patients were included. Nine patients were treated in the first 8years of this study and 19 in the last 7 and a half years.

Sixteen (57%) were male and twelve females. Mean age was 54 (31-74) years. Five patients had been previously operated and came to the service with a recurrent lesion. Sixteen tumors were located at the left side and twelve at the right. All but three patients presented with a unilateral complete nasal obstruction. Other symptoms were epistaxis in 6, local pain in 2 and eye proptosis and olfaction dysfunction in one each.

Mean duration of symptoms was 28 (1-180) months. A computed tomography was performed in all the cases (Figure 1) and a magnetic resonance image (MRI) in 2.

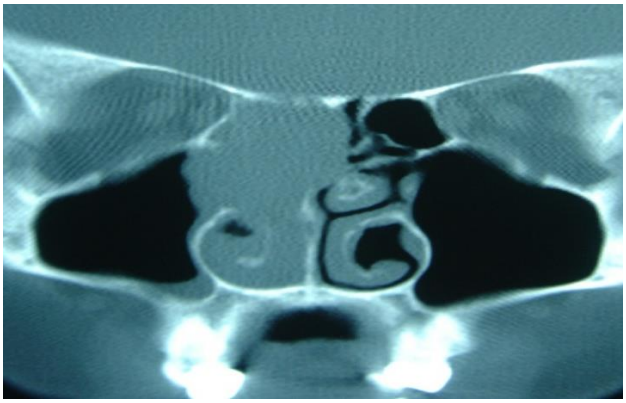

Figure 1: CT scan of a patient with an inverted papilloma of the right nasal fossa.

The tumor was located within the nasal cavity in 9 cases, extended to the maxillary sinus in 16 and to the nasopharynx or palate in one each. However, one tumor was limited to the ethmoid sinus complex. Author did not have tumors with cranial extension. Mean size of the tumor was 5.2 (3-9) cm. The distribution of the extent of the lesion according to the Krouse, Han and Connady staging systems (Gras-Cobrerizo) appear on Table 1.

Table 1: Distribution of the patients with inverted papilloma according to the Krouse, Han and Cannady staging systems.

Krouse	T1	T2	T3	T4	Total
	6	19		3	28
Ham	I	II	III	IV	
	24	2		2	28
Cannady	A	B	C		
	26		2		28

According to Krouse's system, 17 (68%) were T2 and 2 were T4, one of them with a malignant lesion. According to the Ham and Cannady systems, most patients were I and A types, respectively. In these latter systems, malignancies are not considered. In Cannady system, Krouse's stages I and II are grouped as stage A. All the patients had a preoperative biopsy whose histological diagnosis was a benign inverted papilloma in 27 and a transitional carcinoma originated in an inverted papilloma in one. These diagnoses were confirmed in the surgical specimen.

The surgical resection of the tumor was performed through a Denker's approach (Figure 2) in all the benign cases except in one case of only etmoid involvement and unsuccessful complete endoscopic resection in whom a lateral rhinotomy approach was performed. Surgical technique has been described elsewhere.[2] In the patient with a malignant lesion, a partial maxillectomy was done through a lateral rhinotomy approach. An endoscopic revision of the surgical cavity was performed in 2 of the last cases. An anterior packing was utilized in the first 6 cases but a posterior packing was routinely placed in the rest of the patients.

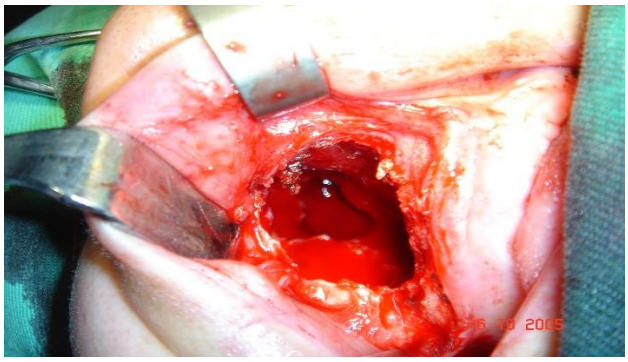

Figure 2: A Denker's approach through the right maxillary sinus.

RESULTS

From the aesthetic point of view, the external face aspect was normal in all patients and the only scar of the surgical procedure remains imperceptible in the mucosa of the gingivobuccal sulcus. No respiratory difficulties occurred after this kind of surgical procedure. Crusting of the nasal cavity was usually and easily controlled by the regular use of saline douche and tended to settle down after a few months after surgery.

Postoperative complications occurred in 3 patients which ware nasal bleeding which required an immediate posterior repacking, a cellulitis of the cheek with exophtalmus which regressed with antibiotics and an oro-antral fistula which was closed surgically (Table 2).

Mean follow-up was of 33.6 (1-144) months. In 5 patients (18%) a recurrence of a benign inverted

papilloma occurred between 12 and 40months and it was easily resected through the same approach. Recurrences did not appear to be associated to the size of the lesion as two of them were T1 and 3 T2 (Table 3).

Table 2: Postoperative complications.

Complication	Patients
None	25
Bleeding and repacking	1
Check cellulitis	1
Oro-antral fistula	1

Table 3: Recurrences according to Krouse staging system.

T	Patients
T1	2/6
T2	3/19
T4	0/3

All these five patients are with no evidence of disease at the present time. The patient with a malignant tumor had an uneventful postoperative evolution but unfortunately was lost to follow up.

DISCUSSION

Sinonasal inverted papillomas have been unusual neoplasms in the institution but there has been an increase in the recent years. Almost all of them were diagnosed when partial or complete nasal obstruction occurred. Ninety-two per cent of the patients had a T1 or T2 Krouse's system tumor. That means that most tumors were limited to the nasal cavity and/or the proximal part of the paranasal sinuses.

There was a left-sided and male predominance as in Senderson's and Gras-Cabreizo's series.[2,7] Mean age was also similar to these series. However, in the last-mentioned study most lesions were located in the ethmoid sinux complex while in this series, most tumors extended from the nasal cavity to the medial part of the maxillary sinus.

Lateral external, Denker's and endoscopic approaches have been described as surgical alternatives for their removal. Endoscopic procedures are increasingly used. Powered instrumentation and experience in endoscopical surgery are critical to accomplish complete resection and avoid recurrences. As large extensions to the lateral or posterior walls of the maxillary sinus seem to be difficult to remove adequately by this procedure, a sublabial approach is necessary to perform in order to obtain a larger exposure.[7,8]

Most inverted papillomas in this series were not so invasive and extended to justify external approaches with facial incisions. However, this approach has been used for very extensive tumors involving the ethmoid laberynth and maxillary sinus as well as for malignant papillomas.[9,10] Denker's approach offers an excellent access and visualization so large tumors can be excised completely and in one piece. The duration of the operation is usually short. Additionally, an endoscopic revision can be done with better light and magnification. Tumor remaining within bony crevices, potential areas of tumor recurrence, can be removed by this means. Author have not had recurrences in those patients in whom endoscopic revision was done at the end of the operation. Postoperative complications occurred in only 12 % in patients. They were mild and easily treated.

Gras-Cabrerizo JR et al, reported a lower recurrence with endoscopic than with external approach (17% vs 32%).[7] Malignant transformation in these tumors continues to be a dilemma. Association of inverted papilloma and carcinoma ranges between 1% to 13%. In this series it was of 4%.[10-12] Endoscopic resection of inverted papillomas is becoming the treatment of choice, particularly for small and middle size tumors. For extensive lesions, Denker's approach remains very useful and safe surgical alternative. It gave us an excellent access and visualization. Endoscopic revision seems to add security to complete resection of the tumor. Surgical complications are rare and if present can be treated with minor procedures and/or clinical therapy.

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REFERENCES

1. Myers EN, Schramm Jr VL, Barnes Jr EL. Management of inverted papilloma of the nose and paranasal sinuses. Laryngoscope. 1981;91(12):2071-105.
2. Sanderson RJ, Knegt P. Management of inverted papilloma via Denker's approach. Clin Otolaryngol Allied Sci. 1999;24(1):69-71.
3. Brandwein M, Steinberg B, Thung S, Biller H, Dilorenzo T, Galli R. Human papillomavirus 6/11 and 16/18 in schneiderian inverted papillomas. In situ hybridization with human papillomavirus RNA probes. Cancer. 1989;63(9):1708-13.
4. Syrjänen KJ. HPV infections in benign and malignant sinonasal lesions. J Clin Pathol. 2003;56(3):174-81.
5. Katori H, Nozawa A, Tsukuda M. Markers of malignant transformation of sinonasal inverted papilloma. Euro J Surg Oncol. 2005;31(8):905-11.
6. Calcaterra TC, Thompson JW, Paglia DE. Inverting papillomas of the nose and paranasal sinuses. Laryngoscope. 1980;90(1):53-60.
7. Gras-Cabrerizo JR, Montserrat-Gili JR, Massegur-Solench H, León-Vintró X, De Juan J, Fabra-Llopis JM. Management of sinonasal inverted papillomas

and comparison of classification staging systems. Am J Rhinol Allergy. 2010;24(1):66-9.
8. Thaler ER, Lanza DC, Tufano RP, Cunning DM, Kennedy DW. Inverted papilloma: an endoscopic approach. Operative Tech Otolaryngol-Head Neck Surg. 1999;10(2):87-94.
9. Kuriloff DB. Lateral rhinotomy approach to inverted papilloma. Operative Tech Otolaryngol Head Neck Surg. 1999;10(2):71-81.
10. Darrouzet V, Stoll D, Bebeart JP. Inverted papillomas of the nasal fossae and sinuses. A propos of 10 cases. Rev Laryngol Otol Rhinol (Bord). 1987;108(5):485-7. (French. PMID: 3444997).
11. Bhaya MH, Har-El G. The biology and histopathology of inverted papillomas. Operative Tech Otolaryngol-Head Neck Surg. 1999;10:68-70.
12. Segal K, Atar E, Mor C, Har-El G, Sidi J. Inverting papilloma of the nose and paranasal sinuses. Laryngoscope. 1986;96(4):394-8.

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