INVERTED PAPILLOMAS OF THE NOSE & SINUSES: CLINICAL PRESENTATIONS, SURGICAL TREATMENT AND OUTCOME

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ABSTRACT

Objective To find the outcome of surgical management of inverted papillomas of the nose and paranasal sinuses.

Study design Case series

Place & Duration of study At Fatima Hospital Baqai Medical University and Usman Memorial Hospital Karachi, from June 2000 to July 2006,.

Patients and Methods A total of 17 cases of inverted papillomas presented to us during the last six years were managed and the out come of their surgical treatment was reviewed retrospectively.

Results Out of 17 cases 13 were males and 4 females. All the cases presented with unilateral nasal obstruction. Lateral rhinotomy and medial maxillectomy were the standard surgical procedures adopted for complete excision of the lesion. Two cases had wound infection, one with depressed ipsilateral facial deformity. In two cases recurrence occurred in the post-operative period.

Conclusions Wide surgical excision is the primary treatment modality of inverted papilloma to minimize the incidence of recurrence. Radiation therapy should only be considered in patients with incompletely respectable lesions, multiple recurrent lesions and tumours associated with malignancy.

Key words Inverted papilloma, Lateral rhinotomy, Recurrence.

INTRODUCTION:

Sino-nasal inverted papillomas, initially described by Ward in 1854 and Billroth in 1855, constitute only 0.5 – 4.0 % of all nasal tumours.[1] Histologically it is characterized by an endophytic, locally aggressive invasion of surface epithelium into the underlying connective tissue stroma.[2] It is a benign lesion of the nose and paranasal sinuses that has a known propensity for recurrence, local aggressiveness and an association with transformation to squamous cell carcinoma and a high risk for synchronous or metachronous malignancies. [3]

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Inverted papilloma arising from the lateral wall of the nose are controversial lesions which have been reported in the medical literature under a variety of titles. The name “inverted Schneiderian papilloma” is recommended as an appropriate title, to best convey the tumour qualities of inversion, location and distinctiveness of character.[4] It is commonly seen in males during 4th to 6th decades and is relatively rare epithelial neoplasm of the sinonasal region.[5] Many studies have been carried out to establish the etiology of this tumour but it is still uncertain. It is believed that viral infection (HPV) and chronic inflammation of the nose and sinuses can play an important etiological roles.[6] Inverted papilloma is derived from the Schneiderian membrane where the epithelium invaginates and proliferate in the underlying stroma.

The epithelium is multilayered, usually 5-30 cells thick and formed of squamus or ciliated columnar cells mixed with mucocytes. Nonkeratinizing squamous or transitional type epithelium tends to predominate and is frequently covered by a single layer of ciliated columnar cells.[7]

This benign epithelial neoplasm can also involve the paranasal sinuses, orbits and anterior skull base, pharynx, nasopharynx, lacrimal sac and temporal bone with a more common occurrence in men than in women.[8] Inverted papillomas require radical resection because of their high recurrence rate, extensive growth and also the risk of malignant degeneration. This article describes our experience of management of these rare lesions.

PATIENTS AND METHODS:

All patients presenting with biopsy proven sino-nasal inverted papillomas were treated surgically over a period of six years i.e from June 2000 to July 2006. These patients have been followed up regularly, after every three months in the first 2 years and six monthly from third year onwards.

All patients underwent thorough ENT and Head & Neck examination. All had punch biopsy and preoperative CT scan to assess the site and extent of the tumour while MRI was not really required in any of them. Patients were divided into four groups according to the Krouse's classification for sino-nasal inverted papilloma, as T1 when the tumour is limited to the nasal cavity,T2 when the lesion restricted to ethmoid sinus and medial / superior part of the maxillary sinus, T3 tumour involving the lateral / inferior part of the maxillary sinus or frontal or sphenoid sinus and T4 when the tumour extends beyond the nasal cavity and para-nasal sinuses or malignant disease.

Wide surgical excision was the treatment of choice, aiming at complete excision of the tumour and lateral rhinotomy was the standard surgical approach adopted in this study to excise the inverted papillomas completely. During these operations in majority of cases the blood loss was minimal and except for one patient who received a pint of whole blood, transfusion was not required in rest of the cases.

The tumour removed was sent for histological examination. The recovery being uneventful and all the patients sent home after five to seven days with an appointment to out patient clinic to assess the post-operative complications, recurrence and followup.

RESULTS

A total of 17 cases of inverted papillomas of the sino-nasal region were studied in this series. Out of them 13 were males and 4 females. Tumour involved the right nasal cavity in 6 patients and the left nasal cavity was filled with the lesion in 11 cases. There was no bilateral nasal involvement. Minimum age of the patients was 22 years and maximum 69 years. The duration of onset of symptoms till reporting to our clinics varied from 5 months to 48 months. All cases presented with marked unilateral nasal obstruction of vaiable duration. In addition 13 patients also complaint of severe headache, ten patients, had rhinorrhoea and six presented with epistaxis. Based on pre-operative CT scan findings of the nose and para-nasal sinuses eleven cases were in T1 (64.7 %), five patients in T2 (29.4 %), one in T3 (5.8 %) and no case of T4.

Two patients had tumour recurrence in the follow-up period, while two patients developed wound infection. One patient came with a depression over the left side of the nose.

DISCUSSION:

The inverted papilloma gets its name because of its growth pattern into the underlining stroma rather than in an exophytic direction. They have been called by many names, including endophytic papilloma, squamous cell papilloma, transitional cell papilloma, inverting papilloma and Schneiderian papilloma.

Inverted papillomas of nose are benign masses that arise along the lateral nasal wall or in the para-nasal sinuses (commonly the maxillary antrum) and present with nasal congestion / blockage, epistaxis, nasal discharge, and recurrent sinusitis. Inverted papillomas originate from the nasal septum in only 5 % - 18 % of cases while bilateral masses seen in less than 5 % cases.[9] Men are three to five times more commonly affected than women and whites are more frequent sufferers than blacks.[10] The typical age range is 40 – 60 years, and the etiologic characteristics of these lesions are unknown although an association with human papilloma virus-11 has been proposed.[11] Pathologically it is seen as a vascular mass with prominent mucous cyst inclusions interspersed throughout the epithelium and a high intracellular glycogen content.

Although histologically benign, these are clinically ominous lesions because of their high recurrence rates after surgical exision (range, 33-74%), risk of malignant transformation (range, 10-15 %), tendency towards multicentricity, and local aggressiveness.[12] Therefore complete surgical extripation is the aim of treatment and many surgeons adopt radical extra-nasal procedures as treatment of choice for these tumours. [13] This is usually accomplished by means of lateral rhinotomy and en bloc excision of the lateral nasal wall.[14] Midfacial degloving procedure may be an option with improved cosmetic results.The modern endonasal-endoscopic procedure is nowadays given preference over external approach because of less complications and faster recovery. However, with the progress in the endonasal endoscopic surgical technique, there has been much debate regarding possible benefits of such surgical approach over traditional ones such as lateral rhinotomy, degloving and sublabial approach.[15]

Since the facilities of endoscopic endonasal procedures were not available at our centres thus all the17 patients with inverted papillomas were treated with traditional lateral rhinotomy (and medical maxillectomy) approach after a pre-operative FNAC and CT scan evaluation. The gender distribution is similar with the results of some retrospective studies where in majority the site of origin was lateral wall of the nose,[16,17] and mostly the patients were males. [18] The major symptom of inverted

papilloma described in the literature is unilateral nasal obstruction,[19] and all the 17 cases in our series also presented with unilateral nasal obstruction while rhinorrhoea, headache and epistaxis were infrequently seen.

Only two of our cases had tumor recurrence who presented with epistaxsis and nasal obstruction after 7 - 8 months of operation. The diagnosis were confirmed with biopsy and MRI imaging and finally the lesion were re-excisied via wide external nasal approach. There was one patient with a depressed area over the nose and two cases of wound infection were also recorded. Change of antibiotic and antiseptic dressing was required for management.

For excision of sino-nasal inverted papillomas ,two standard procedures are being used i.e. the endonasal endoscopic (FESS) surgery, which provides an excellent visualization, preservation of vital anatomic structures, no facial scar and low rate of recurrence while external procedures or lateral rhinotomy and midfacial degloving approaches allow adequate exposure and hence are highly acceptable as wider and complete excision of the lesion with most acceptable facial scar and an acceptable recurrence rate are reported.[19]

CONCLUSIONS:

The management of inverted papillomas should aim at complete removal of the lesion along with all the diseased mucosa with creation of wide cavities via lateral rhinotomy. Long term follow-up to detect the subsequent recurrence or malignant transformation if any is mandatory.

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