

Inverted Papilloma, Role of Endonasal Endoscopic Sinus Surgery-Experience at Mayo Hospital Lahore

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ABSTRACT

Aim: Demonstrate the efficacy of an endonasal endoscopic approach in the treatment of inverted papilloma.

Study design: Retrospective.

Materials and methods: Retrospective analysis of 23 patients with inverted papilloma operated at the Mayo Hospital Lahore from 2000 to 2006.

Results: There was male prevalence, 19 cases (82.6%), with tumor involving the left side in 14 (60.9%), and there was no bilateral involvement. Regarding Age 14 patients (60.9%) in age group of 45-60 years. Main symptoms were, nasal obstruction (95.7%), rhinorrhea (82.6%) and epistaxis (52.2%). There were no major complications with only 2 (8.6%) had postoperatively synechia in the nose. All patients were followed up for a minimum period of 12 months, the longest being 5 years. None of the patients had recurrence.

Conclusion: Endoscopic resection appears to offer a safe treatment modality of inverted papilloma with insignificant morbidity and less recurrence.

Key words: Inverted papilloma, endoscopic surgery

INTRODUCTION

The inverted papilloma (Schneiderian papilloma¹, transitional cell papilloma or Ringertz tumour²) is a benign sinonasal neoplasia³ that has its origin in the lateral nasal wall epithelium and generate considerable interest because they are locally aggressive, have a tendency to recur and are associated with malignancy^{4,5,6}. Histologically, it is characterized by an epithelial growth towards the stroma⁷. The epithelium retains its basement membrane. These are rare tumors, with an incidence of 0.5 to 1.5 cases per 100 thousand inhabitants⁸, corresponding from 0.5 to 4% of all nasosinusal tumors⁹.

Mostly seen in male patients, between the 5th and 6th decades of life and cause nasal obstruction, rhinorrhea and epistaxis¹⁰. The tumour may be associated with malignancy and during growth it may destroy surrounding tissue¹¹. Although MRI has the advantage of better differentiating tumor, CT Scan still is a good assessment method. Also MRI is of higher cost and is also unable to differentiate the papilloma from a malignant tumor¹². On CT. Scan feature which is highly suggestive of an inverted papilloma is, a mass in the middle meatus of the nasal cavity extend into the antrum¹³.

They have high rates of post-operative recurrence¹⁴. Due to both its tendency to recur and its association with squamous cell carcinoma, patients with inverted papilloma should undergo thorough surgery to remove all mucosal disease⁶. Over the years there has been a slow evolution from aggressive (en bloc) resection by lateral rhinotomy to endoscopic techniques³.

MATERIALS AND METHODS

This retrospective study was conducted at the department of Otolaryngology and Head and Neck surgery Unit II, Mayo Hospital Lahore, It comprised 23 patients operated upon for sinonasal inverted papilloma in a long-term follow-up during the period of 2000 to 2006. All the patients suspected having sinonasal inverted papillomas coming to outpatient clinic of our department with no previous surgery were included in the study, irrespective of age and gender. A detailed history was taken and thorough ear, nose and throat examination was done. All the patients underwent preoperative CT Scan in both coronal and axial planes as for sinus disease and had disease limited to the nose, nasal cavity, ethmoid, sphenoid, or medial wall of the maxillary sinus. Biopsy was taken endoscopically from suspected lesion. After histological confirmation tumours were resected endoscopically. Tumours were removed widely (medial maxillectomy) along the subperiosteal plane. The success of the surgery was judged primarily by the

recurrence rate and the treatment morbidity. All patients have had their disease followed for a minimum of 1 year with post-operatively endoscopic inspection of the surgical cavity.

RESULTS

Of the 23 studied patients with nasosinusal inverted papillomas, there was male prevalence - 19 cases (82.6%). Four patients were females (17.4%). Tumor involved the right side in 9 patients (39.1%) and the left side in 14 (60.9%), and there was no bilateral involvement. Age varied from 18 to 70 years, with 14 patients (60.9%) in age group of 45-60 years while 6(26%) patients in age group of 18-45 and 3(13%) in 60-70 years. Regarding main symptoms, 22 patients presented nasal obstruction (95.7%), 19 rhinorrhea (82.6%), 12 epistaxis (52.2%). There were no major complications or associated malignancies encountered in the patients. Two patients (8.6%) had postoperatively synechia in the nose. All patients were followed up for a minimum period of 6 months, the longest being 14 months. None of the patients had recurrence at the time of writing.

DISCUSSION

Inverted papilloma is a benign tumor of the lateral nasal wall and the paranasal sinuses⁷, Long thought to be primarily due to human papilloma virus infection¹⁵ early evidence suggests an inflammatory etiology as well^{16,17,18}. It is most prevalent in males^{8,10} and the major symptom is unilateral nasal obstruction^{10,19} confirmed in our study with 82% of the cases being males. and 100% of the patients had unilateral nasal obstruction with other symptoms in descending order of appearance are rhinorrhea, epistaxis and headache. This tumour may be present at any age, but are found most commonly in the fifth decade²⁰ as in our study (60.9%) are in the range of 45-60 years. Although it is a benign lesion, the inverted papilloma is locally aggressive, bears high recurrence rates and is associated to squamous cell carcinomas in 5 to 15% of the cases⁷ and It requires complete removal. For such reason, many surgeons adopt radical extra-nasal procedures as treatment of choice for these tumors²¹. However, since the introduction of endoscopic diagnostic and surgical techniques for the treatment of nasal and sinus disease, over the years there has been a slow evolution from aggressive (en bloc) resection by lateral rhinotomy to endoscopic techniques and there has been much debate regarding possible benefits of such surgical approach over traditional ones such as lateral rhinotomy, degloving and sublabial approach²².

In Europe, Waitz, Wigand and Draf routinely treat inverted papilloma endoscopically, reserving extensive surgery for papilloma involving the maxillary sinus or for recurrent disease¹⁵. Endoscopic approach is safe^{24,25,26}.

Traditional techniques are associated with a high rate of recurrence in the treatment of an inverted papilloma: After intranasal removal, the recurrence rate is 80%, after Caldwell-Luc 60% and after medial maxillectomy 30%²⁷. On the other hand, the endoscopic endonasal approach is an effective treatment for an inverted papilloma showing much less recurrence(3%)^{28,29}, our study show none. Tumour and its extent can be visualized accurately and directly with endoscope. It prevents an external scar, there is less blood loss and the hospital stay is shorter.

CONCLUSION

Endoscopic endonasal sinus surgery of inverted papilloma offers an effective and safe treatment modality with a lower recurrence rate, better cosmetic result and insignificant morbidity when compared to the external approach. Patients with inverted papilloma should undergo thorough surgery to remove all mucosal disease. To obtain success, our results encourage us to recommend endoscopic management as the standard treatment of benign inverted papillomas. Extensive experience and expertise in this technique is a prerequisite to undertaking the endoscopic approach.

REFERENCES

1. Eggers G, Muhling J, Hassfeld S. Inverted papilloma of paranasal sinuses. J Craniomaxillofac Surg 2007 Jan;35(1):21-9.
2. Ringertz N. Pathology of malignant tumours arising in the nasal and paranasal cavities and maxilla. Acta OtoLaryngologica Supplementum 1938; 27: 33-41.

3. Sauter A, Matharu R, Hormann K, Naim R. Current advances in the basic research and clinical management of sinonasal inverted papilloma (review). *Oncol Rep* 2007 Mar;17(3):495-504.
4. Osborn DA. Nature and behavior of transitional tumours in the upper respiratory tract. *Cancer* 1970;25:50-60.
5. Hyams VJ. Papillomas of the nasal cavity and paranasal sinuses. A clinicopathological study of 315 cases. *Annals of Otol, Rhinology and Laryngology*. 1971; 80:192-206.
6. Mirza S, Bradley PJ, Acharya A, Stacey M, Jones NS. Sinonasal inverted papillomas: recurrence, and synchronous and metachronous malignancy. *J Laryngol Otol* 2007 Feb; 26:1-8.
7. Lawson W, Ho BT, Shaari CM, Biller HF. Inverted papilloma: a report of 112 cases. *Laryngoscope* 1995;105:228-88.
8. Buchwald C, Franzmann MB, Tos M. Sinonasal papillomas: a report of 82 cases in Copenhagen County, including a longitudinal epidemiological and clinical study. *Laryngoscope*1995;105(1):72-9.
9. Dammann F, Pereira P, Laniado M, Plinkert P, Löwenheim H, Claussen CD: Inverted papilloma of the nasal cavity and the paranasal sinuses: using CT for primary diagnosis and follow-up. *AJR*1999;172:543-8.
10. Klimek T, Atai E, Schubert M, Glanz H. Inverted papilloma of the nasal cavity and paranasal sinuses: clinical data, surgical strategy and recurrence rates. *Acta Otolaryngol* 2000;120:267-72.
11. Andersen PJ, Kjeldsen AD, Pedersen AT Treatment of inverted papilloma with endonasal endoscopic sinus surgery *Ugeskr Laeger*. 2002 Sep 9;164(37):4283-7.
12. Savy L, Lloyd G, Lund VJ, Howard D. Optimum imaging for inverted papilloma. *J. Laryngol&Otol*2000;114:891-3.
13. Lund VJ, Lloyd G.A.S. Radiological changes associated with inverted papilloma of nose and paranasal sinuses. *British Journal of Radiology*. 1984; 57: 455-461
14. Lee TJ, Huang SF, Lee LA, Huang CC Endoscopic surgery for recurrent inverted papilloma *Laryngoscope*. 2004 Jan;114(1):106-12.
15. Beck J.C., McClatchey K.D., Lesperance M.M., et al. Presence of human papillomavirus predicts recurrence of inverted papilloma. *Otolaryngol Head Neck Surg* 1995;113:49-55.
16. Orlandi R.R. and Terrell J.E. Sinus inflammation associated with contralateral inverted papilloma. *Am J Rhinol* 2002;16:91-95.
17. Michaels L. and Young M. Histogenesis of papillomas of the nose and paranasal sinuses. *Arch Pathol Lab Med* 1995;119:821-6.
18. Deitmer T and Wiener C. Is there an occupational etiology of inverted papilloma of the nose and sinuses? *Acta Otolaryngol* 1996;116:762-5.
19. Vrabc DP. The inverted Schneiderian papilloma: a 25-year study. *Laryngoscope* 1994;104:582-605.
20. Cheesman AD, Jani P. Cysts, granulomas and tumours of the jaws, nose and sinuses. In: Scott-Brown, s *Otolaryngology*, Vol.5, 6th edn. London: Butterworths, 1997; Chapter 23: 22-23
21. Keles N, Deger K. Endonasal endoscopic surgical treatment of paranasal sinus inverted papilloma-first experiences. *Rhinology*2001;39:156-9.
22. Sukenic MA, Casiano R. Endoscopic Medial Maxillectomy for inverted papilloma of the paranasal sinuses: value of the intraoperative endoscopic examination. *Laryngoscope* 2000;110:39-42.
23. Stankiewicz JA, Girgis SJ. Endoscopic surgical treatment of nasal and paranasal sinus inverted papilloma. *Otolaryngol Head Neck Surg*. 1993 Dec;109(6):988-95.
24. Winter M, Rauer RA, Gode U, Waitz G, Wigand ME Inverted papilloma of the nose and paranasal sinuses. Long-term outcome of endoscopic endonasal resection HNO. 2000 Aug;48(8):568-72
25. Holzmann D, Hegyi I, Rajan GP, Harder-Ruckstuhl M. Management of benign inverted sinonasal papilloma avoiding external approaches. *J Laryngol Otol*. 2006 Nov 1:1-7.
26. Minovi A, Kollert M, Draf W, Bockmuhl U. Inverted papilloma: feasibility of endonasal surgery and long-term results of 87 cases. *Rhinology*. 2006 Sep; 44(3): 205-10.
27. John CW, Mark NG, Janet AW. Tumours of the nose and sinuses. In: Stell and Maran, s *Head and Neck Surgery*, 4 edn. Oxford: Butterworth-Heinemann, 2000; Chapter 19: 384
28. Kraft M, Simmen D, Kaufmann T, Holzmann D. Long-term results of endonasal sinus surgery in sinonasal papillomas. *Laryngoscope*. 2003 Sep; 113(9): 1541-7.
29. Pasquini E, Sciarretta V, Farneti G, Modugno GC Inverted papilloma: report of 89 cases *Am J Otolaryngol*. 2004 May-Jun; 25(3): 178-85