

Sinonasal Inverted Papilloma

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Abstract

Introduction: Sinonasal inverted papilloma is a rare tumour comprising about 0.5-4% of total nose and paranasal sinus tumours. Though various factors have been implicated its exact cause is unknown. This longitudinal, prospective study was carried out to find out demographical profile, association of this tumour with smoking, occupation, variation with ethnic races and outcome of surgery.

Methods: This study was carried out in the department of ENT-HNS, Tribhuvan University Teaching Hospital, Maharajgunj, Kathmandu from April, 2005 to March, 2011.

Result: Out of 34 patients, there were 25 male and 9 female with ratio of 2.78:1. Age of the patients ranged from 14-76 years with median age of 51.5±2.74 SE years. Disease was more common in 4th to 7th decade. It was common in farmers (20). Eighteen patients were smoker and 16 nonsmoker. The disease was more common in mongoloids than in Indo-aryans. Out of 16 patients having stage III disease, 9 were smoker and 7 nonsmoker. Eighteen patients underwent endoscopic medial maxillectomy and 15 patients underwent medial maxillectomy via lateral rhinotomy approach. One patient who had bilateral disease underwent medial maxillectomy via lateral rhinotomy on the left side and endoscopically on the right side. There was recurrence of tumour in 2 patients who underwent surgery via lateral rhinotomy approach whereas in 1 patient who underwent surgery endoscopically.

Conclusion: This study showed that sinonasal inverted papilloma was common in mongoloids than in Indo-aryans and farmers but no association with smoking. Endoscopic medial maxillectomy has less recurrence of tumour in comparison to lateral rhinotomy approach.

Key words: endoscopic medial maxillectomy, lateral rhinotomy, occupation, race, recurrence, smoking, sinonasal inverted papilloma.

Introduction

Sinonasal inverted papilloma is a rare tumour. It is also known by various names as Schneiderian papilloma, epithelial papilloma, Ringertz's tumour, transitional cell papilloma, villiform cancer, Ewing's papilloma etc.¹. It was first described by Ward in 1854 and Billroth in 1855.² Its typical histological description was given by Ringertz in 1938.³ It comprises about 0.5-4% of total nose and paranasal sinus tumours.¹ It is a benign tumour but has

a high propensity of recurrence and association with synchronous and metachronous malignancies.⁴ It occurs more commonly in male than in females with ratio of 3:1 and most patients are usually diagnosed in the 5th to 7th decades with average age of 53 years though it has been reported in children, adolescents and elderly also with age ranging from 3-89 years.^{1,5}

Various aetiological factors have been implicated such as viral infection, allergy, smoking, occupation etc. but exact

aetiology is still unknown.⁴

We carried out this longitudinal, prospective study to find out demographical profile, association of this tumour with smoking, occupation, variation with ethnic races and outcome of surgery.

Methods

This study was carried out in the department of ENT-HNS, Tribhuvan University Teaching Hospital, Maharajgunj, Kathmandu, Nepal from April, 2005 to March, 2011. All the patients were discussed in Rhinology and Allergy special clinic with CECT Scan and punch biopsy (HPE) report. Those patients whose HPE report came out to be inverted papilloma were randomly subjected for medial maxillectomy either via lateral rhinotomy or endoscopic approach. After admission detailed history taking and examination was carried out. Patients’ demographic profile, clinical features, CTScan, peroperative findings and postoperative HPE report were noted in a specially prepared form. Written consent was taken. Patients were followed up postoperatively.

Preoperative CTScan findings were classified according to Krouse.⁶

Inclusion Criteria

1. Patient who underwent primary surgery for inverted papilloma

Exclusion Criteria

1. Patient who lost follow up
2. Patient whose postoperative histopathological report came out to be other than inverted papilloma.

Chi-square test and Fisher’s exact test was applied to analyse the data and the result was analysed using SPSS 16. P value equal to or less than 0.05 was considered statistically significant.

Results

During above mentioned period total 35 patients underwent medial maxillectomy for sinonasal inverted papilloma. One patient lost follow up, therefore, only 34 patients were included in the study. Age of the patients ranged from 14-76 years with median age of 51.5±2.74 SE years. Disease was more common in 4th to 7th decade

Table 1: Distribution of age of the patients

Age group(years)	No. of patients
<20	2
21-30	0
31-40	7
41-50	7
51-60	6
61-70	8
>70	4

Male female ratio was 2.66:1



Fig.1: Distribution of gender

Disease was almost equal in number on either side whereas in 1 patient it was bilateral.

Table 2: Laterality of tumour

Side	No. of patients
Right	16
Left	17
Bilateral	1

It was common in farmers (20)

Table 3: Occupation

Occupation	No. of patients
Farmer	20
Service	4
House wife	4
Student	2
Painter	1
Roda factory worker	1
Journalist	1
Carpenter	1

Eighteen patients were smoker whereas 16 were nonsmoker (Fig.2). The disease was more common in mongoloids (21)

than in Indo-aryans (13) .



Fig. 2: Distribution of tumour according to race



Fig. 3: Association of tumour with smoking

Out of 34 patients, 16 patients had stage III disease, of these, 9 were smokers and 7 were nonsmoker.

Table 4: Symptoms

Symptoms	No. of patients
Nasal obstruction	34
Blood mixed nasal discharge	12
Loss of smell	12
Nasal mass	8
Change in voice	7
Sneezing	2
Frequent clearing of throat	2
Watering of eye	2
Headache	1

Unilateral nasal obstruction was the predominant symptom (34) followed by blood mixed nasal discharge and decreased smell present in 12 and 11 patients respectively.

Table 5: Association of staging of tumour with smoking

smoking	stage				Total
	I	II	III	IV	
smoker	2	6	9	1	18
nonsmoker	1	7	7	1	16
Total	3	13	16	2	34

Chi-square test: p value 0.544 (statistically not significant)

Four patients had undergone intranasal polyp avulsion (INPA) and 4 patients had functional endoscopic sinus surgery (FESS) before. In 21 patients there was pale polypoidal mass along with fleshy mass and purely fleshy mass was found only in 13 patients.

Table 6: Peroperative findings

Findings	No. of patients
Pale polypoidal mass with fleshy mass	21
Purely fleshy mass	13

Eighteen patients underwent endoscopic medial maxillectomy and 15 patients underwent medial maxillectomy via lateral rhinotomy approach. One patient who had bilateral disease underwent medial maxillectomy via lateral rhinotomy on the left side and endoscopically on the right side. There was recurrence of tumour in 2 patients who underwent surgery via lateral rhinotomy approach whereas in 1 patient who underwent surgery endoscopically.

Table 7: Approaches of surgery

Approach	No. of patients	recurrence
Endoscopic	18	15
Lateral rhinotomy	1	1
Combined (Left lateral rhinotomy+Right endoscopic)	2	0

Fisher’s exact test: p value 0.01464 (statistically significant)

In all the patients postoperative HPE report came out to be inverted papilloma. Follow up period ranged from 6 months to 6 years.

Discussion

As mentioned earlier sinonasal inverted papilloma is a rare tumour. We encountered 35 patients in 6 years but 1 patient lost follow up. Tumour was common in 4th to 7th decades and common in male which is consistent with other studies et al.4 Smokers and nonsmokers were nearly equal in number. In order to compare this finding we could not find similar studies done before anywhere. Disease was more common in farmers, the reason behind this may be main occupation of Nepalese being farming and they are more prone to be exposed to various chemicals (fertilizers). Similarly the disease was found more common in mongoloids. This

finding is more or less consistent with previous study done in eastern part of Nepal.⁷ Polypoidal mass along with fleshy mass was seen in many patients. This may indicate that sinonasal inverted papilloma may be associated with nasal polyp and deep biopsy is necessary otherwise HPE report may mislead the diagnosis and treatment.⁸ The tumour is usually unilateral but bilateral involvement has also been reported by Yiotaki.⁹ We had 1 patient having bilateral disease. Recurrence was more in cases of medial maxillectomy via lateral rhinotomy approach. Many other studies have shown similar result.¹⁰⁻¹⁹

The limitation of this study is that it was done only in one center with small number of patients and there may be selection bias for approaches of surgery.

Conclusion

This study showed that sinonasal inverted papilloma was common in mongoloids than in Indo-aryans and farmers but there was no association with smoking. Endoscopic medial maxillectomy has less recurrence of tumour in comparison to lateral rhinotomy approach. Further study will be carried out with larger number of patients to validate these results.

References

1. Bielamowicz S, Calcaterra TC, Watson D. Inverting papilloma of the head and neck: the UCLA update. *Otolaryngol Head Neck Surg.* 1993;109: 71-6.
2. Kramer R, Som ML. True papilloma of the nasal cavity. *Arch Otolaryngol.* 1935;22-43.
3. Ringertz N. Pathology of malignant tumors arising in the nasal and paranasal cavities and maxilla. *Acta Otolaryngol (Stockh).* 1938;27(Suppl):31-42.
4. Sauter A, Matharu R, Horman K, et al. Current advances in the basic research and clinical management of Sinonasal inverted papilloma (review). *Oncol Rep* 2007;17: 495–504.
5. Roland DE. Inverted papilloma of the nose and paranasal sinuses in childhood and adolescence. *The Laryngoscope* 2009; 95 (1): 17 – 23.
6. Krouse JH. Development of a staging system for inverted papilloma. *Laryngoscope.* 2000;110: 965-968.
7. Bhandary S, Singh RK, Shrestha S, Sinha AK, Badhu BP, Karki P. Sinonasal inverted papilloma in eastern part of Nepal. *Kathmandu University Medical Journal.* 2006; 4(16):431-435.
8. Phillips PP, Gustafson RO, Facer GW. The clinical behavior of inverting papilloma of the nose and paranasal sinuses: report of 112 cases and review of the literature. *Laryngoscope* 1990;100:463–69.
9. Yiotakis J, Hantzakos A, Kandiloros D, Ferekidis E. A rare location of bilateral inverted papilloma of the nose and paranasal sinuses. *Rhinology.* 2002 Dec; 40 (4):220-2.
10. Pasquini E, Sciarretta V, Farneti G, et al. Inverted papilloma: report of 89 cases. *Am J Otolaryngol* 2004; 25:178– 85.
11. Busquets JM, Hwang PH. Endoscopic resection of sinonasal inverted papilloma: a meta-analysis. *Otolaryngol Head Neck Surg* 2006;134:476–82.
12. Tomenzoli D, Castelnuovo P, Pagella F, et al: Different endoscopic surgical strategies in the management of inverted papilloma of the sinonasal tract: experience with 47 patients. *Laryngoscope* 2004; 114: 193-200.
13. Kaza S, Casiano RR. Endoscopic resection of inverted papilloma: University of Miami experience. *Am J Rhinol* 2000;17: 185-190.
14. Kraft M, Kaufmann T, Holzmann D. Long-term results of endonasal sinus surgery in sinonasal papillomas *Laryngoscope* 2003; 113: 1541-1547.
15. Lawson W, Ho BT, Shaari CM and Biller HF. Inverted papilloma: a report of 112 cases. *Laryngoscope.* 1995; 105: 228-288.
16. Minovi A, Kollert M, Draf W, Bockmuhl U. Endonasal micro-endoscopic resection of sinonasal inverted papilloma. *Laryngorhinootologie.* 2006;85:421-425.
17. Iqbal SM, Khan IA, Khan IZ, Malik S. Inverted papillomas of the nose and sinuses: clinical presentation, surgical treatment and outcome. *Journal of Surgery Pakistan (International)* 2008; 13(2): 85-87.
18. Sharma V, Koirala K. lateral rhinotomy vs midfacial degloving for T3 inverted papilloma of nose and paranasal sinus. *Nepal Med coll J.* 2009; 11(2) : 115-117.
19. Wolfe SG, Schlosser RJ, Bolger WE, Lanza DC, Kennedy DW. Endoscopic and endoscope-assisted resections of inverted sinonasal papillomas. *Otolaryngol Head Neck Surg.* 2004 Sep;131(3):174-9.