Original article

Overview of Nasal masses

R. B. Pradhananga, P. Adhikari, N.M. Thapa, A. Shrestha, B. Pradhan

Department of Otorhino-Laryngology and Head and Neck Surgery, T.U. Teaching Hospital, Kathmandu, Nepal

Correspondence to: Dr. Rabindra B. Pradhananga, Department of ENT, Head and Neck Surgery, T.U.Teaching Hospital, Kathmandu, Nepal

e-mail: rabindrabp@yahoo.com

Background: This study was performed to determine distribution of various nasal masses and correlate between clinical and histopathological diagnosis.

Methods: A prospective study of 143 cases of nasal masses were done in patients of > 13 years undergoing surgery over 2 years period (Apr.2004 to Apr.2006). All the patients with suggestive symptoms were examined and diagnosed clinically. All the patients were posted for surgical treatment and the specimens were sent for histopathological examination postoperatively, and reports were noted. The age and sex distribution with patients of various nasal masses and correlation between clinical and histological diagnosis also were analyzed.

Results: There were 78 male and 65 female operated for nasal masses. Among the nasal masses operated, the commonest was the ethmoidal polyps (53 patients, 37.06%). The ethmoidal polyps, polyps, bleeding polypus of septum and fungal polyps were common in age group of <40 years whereas inverted papilloma and malignancy were common in >40 years. The ethmoidal polyps and AC polyps were common in male whereas bleeding polypus of septum were in female. A case of venous haemangioma (histopathology) was clinically diagnosed as angiofibroma. In one clinically suspected case of ethmoidal polyps was reported as inverted papilloma. Similarly clinically diagnosed five cases of inverted papilloma were histopathologically reported as inflammatory polyps in two, angiofibroma in one and Squamous cell carcinoma in two cases.

Conclusion: The commonest nasal masses operated was ethmoidal polyps. A discrepancy between the pre-operative clinical diagnosis and final histopathological diagnosis was found in 6.3% of the patients.

Key words: nasal masses, ethmoidal polyps, AC polyps

Introduction

Most of the nasal patient attend to the clinician with complaints of nasal obstruction. Among them maximum number have some kind of pathological mass obstructing the nasal cavity unilaterally or bilaterally. The masses may be of either benign or malignant or inflammatory, of which the surgery is being the mode of treatment. Thus in Rhinology unit, surgery for these pathological nasal masses is the commonest modality of treatment rather than septal surgery or rhinoplasty. These pathologic masses treated either endoscopically or open procedure (lateral rhinotomy etc). In some of the cases, the diagnosis remains mystery prior to histopathological report. So the correlation or discrepancy of clinical and histopathological report is still difficult to predict. Therefore this study was conducted to determine distribution of such nasal masses and correlation between clinical and histopathological diagnosis.

Material and Methods

All the patients of more than 13 years of age, admitted in Rhinology unit of ENT-Head and Neck Surgery ward, to operate for nasal masses were included. This study was prospectively conducted for 2 years period from April 2004 to April 2006. All the patients were thoroughly examined and clinically diagnosed. Patients presented with hypertrophied turbinates as nasal mass were excluded. All surgically removed specimens were sent for histopathologic examination. They were fixed in 10% buffered formaldehyde and routinely processed to paraffin blocks from which 4 μm sections were cut and stained with hematoxylin-eosin. The final histopathology reports were noted.

The age and sex distribution of various nasal masses were analyzed. The correlation between clinical and histopathological diagnosis were analyzed by simple manual analysis using frequency and percentage.

Results

Total 143 patients (male-78 & female-65) were operated for nasal masses during the study period. Among the nasal masses operated, the commonest being the ethmoidal polyps (53 patients, 37.1%) followed by antrochoanal (AC) polyp (38 patients, 26.5%), bleeding polypus septum (14 patients, 9.8%), fungal polyps (8 patients, 5.6%), angiofibroma (9 patients, 6.3%) and inverted papilloma (5 patients, 3.5%) (Table-1). Nasal malignancies were clinically diagnosed in 7 patients whereas histopathologically in 9 patients: Carcinoma (Ca) of maxilla 4, Ca ethmoid 2, Basal cell Ca 2, Malignant Melanoma 1 (Table -2).

Table 1: Distribution of nasal masses

Nasal masses	No. of patients	Percentage
Ethmoidal Polyps	53	37.1
AC Polyp	38	26.5
Haemangioma (septum)	14	9.8
Fungal Polyposis	8	5.6
Inverted Papilloma	5	3.5
Angiofibroma	9	6.3
Nasolabial cyst	3	2.1
Rhinolith	1	0.7
Rhinosporiodiosis	1	0.7
Papilloma vestibule	1	0.7
Dermoid cyst	1	0.7
Malignency	9	6.3
Total	**143**	**100**

Table-2: Distribution of malignant nasal masses

Malignant Nasal masses	No. of patients
Carcinoma Maxilla	4
Carcinoma Ethmoid	2
Basal cell carcinoma	2
Malignant Melanoma	1
Total	**9 (6.3%)**

The ethmoidal polyps, AC polyps, haemangioma septum fungal polyposis and angiofibroma were found common in age group of less than 40 years whereas inverted papilloma and malignancy were common in more than 40 years (Table-3).

Table 3: Age & Sex distribution of various nasal masses

Nasal masses	<40 yrs	>40 yrs	Male	Female
Ethmoidal Polyps(53)	35	18	35	18
AC Polyp	34	4	20	18
Haemangioma (septum)	10	4	3	11
Fungal Polyposis	6	2	3	5
Inverted Papilloma	1	4	4	1
Angiofibroma	9	0	8	1
Nasolabial cyst	3	0	0	3
Others	4	0	1	3
Malignancy	1	8	6	3
Total (143)	**103**	**40**	**80**	**63**

The ethmoidal polyps and AC polyps were common in male with male: female ratio is 1.94:1 and 1.1:1 respectively but bleeding polypus of septum was common in female with ratio of 1:3.6.

Angiofibroma was diagnosed clinically in only male patients however one female patient with bleeding nasal mass reported as angiofibroma in post operative histopathology. All most all of ethmoidal, AC and fungal polyps were reported as inflammatory polyps histopathologically except two of AC polyps which were reported as inverted papilloma. Similarly clinically diagnosed cases of inverted papilloma were histopathologically reported as inflammatory polyps in two, angiofibroma in one and squamous cell carcinona in two cases. A case of venous haemangioma (histopathology) was clinically diagnosed as

angiofibroma. (Table-4).

Table-4: Discrepancy between clinical and histopathological diagnosis

Clinical diagnosis (no of pt.)	Histopathological diagnosis (no. of pt.)	Discrepancy
Ethmoidal Polyps(53)	Inverted Papilloma (2)	3.7%
Inverted Papilloma (8)	Inflammatory polyps (2) Angiofibroma (1) Sq. Cell carcinoma (2)	62.5%
Angiofibroma (8)	Venous haemangioma (1)	12.5%
Haemangioma septum (14)	Angiofibroma (1)	7.14%
Total (143)	**Unexpected results (9)**	**6.3%**

A discrepancy between the pre-operative clinical diagnosis and final histopathological diagnosis was found more in inverted papilloma (62.5%) .

Discussion

Patients more than 13 years of age diagnosed as nasal masses that were are admitted in Rhinology unit of ENT and Head and Neck Surgery of TU Teaching Hospital. In some cases, preoperative biopsy was required for definitive surgery. In such cases, though pre operative biopsy report was available, it was not considered in the study. Seijas et al[6] found 26% discrepancy in the preoperative biopsy and postoperative histopathology report. Therefore we had taken clinical diagnosis and final histopathological report for the study.

There is controversy about whether all nasal polyps and other masses removed during operation should be sent for histopathologic examination [3]. Conventionally, not only unilateral polyps and suspicious-looking lesions, but all kind of nasal masses need histological evaluation as unexpected clinically relevant diagnosis may occur [8]. But Romashko et al preferred to send histopathological examination only in suspicious masses as they found occult neoplasm only in 0.26% of suspicious cases not in clear cut cases. According to them submission of specimen for histopathological examiation is indicated in routine cases when: 1) there is intraoperative suspicion of tumor, 2) unilateral nasal polyposis is present, 3) unilateral sinus opacification is present, and 4) additional diagnostic information is needed (eg, presence of eosinophils, fungal forms, etc.).

Garavello et al [3] also reported incidence of unsuspected clinically relevant diagnosis upto 0.92% in nasal masses. In the next study Garavello et al [4] found the incidence of inverted papilloma in postoperative histopathology in 0.26% of nasal polyposis. Even in nasal polyps there may be associated malignancy or inverted papilloma[4]. According to post operative histopathological report the mode of further management may be changed. Therefore for the proper further management post operative histopathology report must be in hand.

Seijas et al [6] found incidence of polyposis as 52%, inverted papilloma 26%, malignant tumours 13% and other diagnosis 8.6% which is similar to our study. Zhou et al [7] had analysed 60 nasal vestibular masses, 51 cases were benign tumors, 5 cases were inflammatory masses, and 4 cases were malignant tumors.

Nasal polyps being the most common with 37% of the nasal masses presented and were more frequent in men. (1.96:1) which is similar result as Gravello (2.2:1)[3]. To comment on sex distribution and frequency distribution of other nasal masses, the sample size is not adequate. A large series of sample study will be continued in the future also.

Histopathologically ethmoidal polyps, AC polyps and fungal polyposis were reported as inflammatory polyps. Though fungal polyposis was not histologically diagnosed we had not considered it as discrepancy.

Nine out of 143 (6.29%) were malignant lesion with five in male and four in female. Here also sample size is small to analyse. On reviewing literature, study with largest sample of malignant nasal lesion was by Preœ et al which was performed in the years 1992-2001. There were 182 patients treated for malignant nose and paranasal sinus tumors. Males outnumbered females significantly with male : female ratio was 1.9:1 [2].

Conclusion

The commonest nasal masses operated were ethmoidal polyps followed by AC polyp, Bleeding polypus septum, Angiofibroma and Inverted papilloma. A discrepancy between the pre-operative clinical diagnosis and final histopathological diagnosis was found in 6.3% of the patients. Therefore all the specimen must be submitted for histopathological examination post operatively.

References

1. Rostkowska-Nadolska B, Kapuœciñska E, Orendorz-Fraczkowska K. Cytological examination of nasal polyps smears. Otolaryngol Pol. 2005;**59(1):**33-6.

2. Preœ K, Poœpiech L, Krecicki T, Nadolska B, Kubacka

M, Zatoñski T, Jab³onka A, Piechnik-Resler D, Jankowska-Konsur A. Malignant neoplasm of nose and paranasal sinuses in Lower Silesia in years 1992-2001. Wiad Lek. 2006;**59(11-12):**797-800.

3. Garavello W, Gaini RM. Histopathology of routine nasal polypectomy specimens: a review of 2,147 cases. Laryngoscope. 2005 Oct;**115(10):**1866-8.

4. Garavello W, Gaini RM. Incidence of inverted papilloma in recurrent nasal polyposis. Laryngoscope. 2006 Feb;116(2):221-3.

5. Klossek JM, Neukirch F, Pribil C, Jankowski R, Serrano E, Chanal I, El Hasnaoui A. Prevalence of nasal polyposis in France: a cross-sectional, case-control study. Allergy. 2005 Feb;**60(2):**233-7.

6. Seijas Rosales T, Carrasco Llatas M, Arroyo Domingo M, Ferrer Ramirez MJ, Lopez Martinez R Servicio Unilateral polyposis: evaluation of preoperative tests. Acta Otorhinolaringol Esp. 2002 Mar;**53(3):**156-60.

7. Zhou SH , Xu YY , Wang SQ , Ling L , Yao HT , Ren GP. Analysis of 60 masses in the nasal vestibule. Zhonghua Er Bi Yan Hou Ke Za Zhi. 2004 Jun;**39(6):**337-9.

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**:463–469.

9 Romashko AA, Stankiewicz JA. Routine histopathology in uncomplicated sinus surgery: is it necessary? *Otolaryngol Head Neck Surg* 2005;**132**:407–412