Sinonasal Masses: A Retrospective Analysis

Richa Gupta · Surendra Singh Moupachi ·
V. K. Poorey

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Abstract To study clinico-pathological profile of sinonasal masses (SNM). This is a retrospective analytical review of 92 patients of SNM who presented to Department of ENT, S.S. Medical college & Associated Hospital, Rewa from January 2008 to August 2012. Their biodata, clinical profile and histopathological diagnosis were analyzed. The study design was retrospective done in tertiary referral hospital setting. In the present study total 92 patients with age ranging from 7 to >70 years were analysed. The overall M:F ratio was 1.35:1. Most of the patients (35.86 %) belong to 11–20 year age group. The main presenting symptoms were nasal blockage (94 %) and rhinorrhoea (90 %). About 48.9 % cases showed mass on left side, 34.78 % on right side and 16.3 % bilateral. Maximum cases 42.39 % were reported to be antrochoanal polyp followed by ethmoidal polyp and angiomatous polyp. About 6.52 % cases were histopathologically reported to be malignant. This article gives an insight into prevalence of SNM in this region of North India thus

advocating early recognition, proper diagnosis and treatment of SNM.

Keywords Antrochoanal polyp · Nasal blockage · Retrospective · Sinonasal masses

Introduction

The nasal cavity and paranasal sinuses (PNS) form a single functional unit with common pathological process affecting both, most of which are inflammatory. Sinonasal mass (SNM) is a common finding in the ENT department. It is found in almost all age groups of people. A variety of mass lesions occur within the PNS and nasal cavity and thus it becomes mandatory for otorhinolaryngologist to elicit detailed history of all cases of SNM and perform thorough examination before reaching a final diagnosis. Otorhinolaryngologist must keep in mind all the possibilities pertaining to differential diagnosis of SNM.

The patient will experience nasal polyp to be unpleasant disease which severely interferes with the quality of life [1]. Classically they are caused by combination of allergy and infection [2]. The prevalence rate of nasal polyp is about 2 % [3].

Neoplasms affecting the PNS and nasal cavities are rare in comparison with sinonasal inflammatory disease but benign neoplasia of the nose and PNS is relatively not uncommon [4]. Cancers of the nose and PNS account for less than 1 % of all malignancies and about 3 % of all head and neck cancers [5]. Sinonasal tumors can remain clinically silent for months to years. Coexisting infection can disguise clinical signs and symptoms, further delaying the diagnosis.

The aim of our study is to put forward clinical diagnosis and histopathological features of various SNM in front of

Written informed consent was obtained from all the patients for publication of this case study and accompanying images.

R. Gupta (✉)
Department of ENT, S.S. Medical College and Associated
Hospital, F-13/3, New Doctor's Colony, PTS Road, Rewa,
Madhya Pradesh 486001, India
e-mail: dr_richa_tulip@yahoo.com

S. S. Moupachi
Department of ENT, S. S. Medical College and Associated
Hospital, Rewa, Madhya Pradesh, India

V. K. Poorey
Department of ENT, S.S. Medical College and Associated
Hospital, Rewa, Madhya Pradesh, India

the clinician so as to enable them to diagnose the condition as early as possible and hence must be dealt with diligence.

Material and Methods

The present study was a retrospective analysis done on 92 patients of SNM who presented to Department of ENT, S.S. Medical college and associated Hospital, Rewa from January 2008 to August 2012. History, clinical assessment and histopathological examination (HPE) was done in all cases supplemented by radiological investigation like X-ray PNS, computer tomography (CT scan) PNS coronal and axial section and magnetic resonance imaging as per requirement.

The detailed history of patient was obtained including age, sex, socioeconomic status, duration of disease, prevailing symptoms followed by thorough clinical examination and necessary radiological investigations.

All patients underwent surgical excision of SNM and tissue material was sent for HPE and report was correlated with clinical diagnosis.

Results

In the present study total 92 patients were analysed with predominance of males 53 (57.6 %) as compared to females 39 (42.39 %) (Table 1). The overall M:F ratio was 1.35:1. Nasal polyp seem to occur more often in men [6, 7]. This is in accordance with present study.

The age range in present study was from 7 to >70 years. Most of the cases 33 (35.86 %) belong to 11–20 year age group with least 2 (2.17 %) belong to >70 year age group (Table 2). Bakari et al. [8] had reported a peak incidence of 33 years. The mean age of presentation in study by Chavan et al. [9] was 27.3 %.

As per socioeconomic status SNM cases were more prevalent among lower class 61.96 % followed by lower middle 26.09, upper middle 9.78, and upper class 2.17 %.

As per occupation 40 (43.48 %) cases were students followed by 30 (32.6 %) labourers, 11 (11.95 %) housewives, 8 (8.7 %) retired government employees, and 3 (3.26 %) teachers.

About 77 (83.6 %) cases of SNM were unilateral with left side 45 (48.9 %) being more common than right side

Table 1 Gender-wise distribution of cases

S. no.	Gender	No.	Percentage
1.	Male	53	57.61
2.	Female	39	42.39
	Total	92	100

32 (34.78 %). Bilateral SNM were seen in 15 (16.3 %) cases (Table 2). In previous studies examination revealed bilateral SNM in 44.4 % and unilateral in 55.3 % out of which 31.6 % were found on the right side and 23.6 % on left nasal cavity [8]. This pattern is in variance to present study.

Sinonasal mass was found to be multiple in 17 (18.4 %) cases in present study. Non-neoplastic inflammatory polyps were usually unilateral and single, while allergic polyps were usually bilateral and multiple in agreement with the analysis of Frosini et al. [10].

The main presenting symptoms was reported to be nasal blockage in 87 (94.5 %) and rhinorrhoea 83 (90.2 %) patients which is in accordance with previous studies [11, 12] (Table 3). Clinical presentation of sinus malignancies is non specific and often mimics sinonasal disease. The most common presenting symptoms were nasal blockage, nasal discharge and epistaxis in previous studies [13].

Polyp was the predominant sign which was consistent with previous studies [14]. About 92 % patients presented with nasal polyp and 7 % presented with nasal polyp which bleeds on touch.

The duration of patients presenting with signs and symptoms varied from 2 months to 4 years. This pattern might be due to less awareness and tendency of negligence towards their disease among people. The misconception

Table 2 Age-wise distribution of cases

S. no.	Age	No.	Percentage
1.	<10	7	7.61
2.	11–20	33	35.87
3.	21–30	18	19.57
4.	31–40	10	10.87
5.	41–50	9	9.78
6.	51–60	7	7.6
7.	61–70	6	6.52
8.	>70	2	2.17
	Total	92	100

Table 3 Symptom-wise distribution of cases

S. no.	Symptom	No.	Percentage
1.	Nasal blockage	87	94.5
2.	Rhinorrhoea	83	90.2
3.	Headache	40	43.4
4.	Epistaxis	13	14.13
5.	Sneezing	20	21.7
6.	Anosmia/hyposmia	35	38.04
7.	Diplopia	2	2.17
8.	Otalgia	5	5.43

Table 4 Distribution of sinonasal masses as per type of lesion

S. no.	Type of lesion	No.	Percentage
1.	Non neoplastic lesion	74	80.44
2.	Benign	12	13.04
3.	Malignant	6	6.52
	Total	92	100

regarding epistaxis considering as result of their sin towards god is called in local language as ‘peenash’ for which people approach local holy persists and this may be responsible for reporting of patients late to surgeons.

The association with family history was seen in 16.3 % cases. This is nearly in accordance with a study which reported nasal polyps in 14 % of patients [2]. Allergy in association with SNM was observed in 32 cases.

In present study 74 cases showed non neoplastic lesion and 18 neoplastic lesion comprising of 12 benign and 6 malignant lesion (Table 4). Kale et al. [15] studied 344 cases and observed 16 neoplastic lesions out of which 9 were benign and 7 malignant. Diamantopoulus et al. [16] in their study of 2,021 cases found 13 neoplastic lesions comprising of 8 benign and 5 malignant lesion.

The most common SNM encountered in present study was inflammatory polyp 64 (69.56 %) with antrochoanal polyp 39 (42.39 %) reported to be more common followed by ethmoidal polyp 16 (17.39 %) and angiomatous polyp 7 (7.60 %) cases. Among benign neoplastic SNM inverted papilloma in 6 (6.52 %), nasopharyngeal angiofibroma in 5 (5.43 %) were seen. Malignant SNM were reported in 6 (6.52 %) cases (Table 5).

Chavan et al. [9] showed the most common benign SNM (BNM) as the nasal polyp; 51.7 % of the cases revealed ethmoid polyp and 20.4 % revealed an antrochoanal polyp

Table 5 Distribution of sinonasal masses as per histopathological diagnosis

S. no.	Nature of lesion	Number	Percentage
1.	Antrochoanal polyp	39	42.39
2.	Ethmoidal polyp	16	17.39
3.	Angiomatous polyp	7	7.61
4.	Rhinosporidiosis	9	9.78
5.	Rhinolith	2	2.17
6.	Rhinoscleroma	1	1.09
7.	Inverted papilloma	6	6.52
8.	Nasopharyngeal angiofibroma	5	5.44
9.	Everted papilloma	1	1.09
10.	Squamous cell carcinoma	5	5.44
11.	Adenocarcinoma	1	1.09
	Total	92	100

with second most common BNM as nasopharyngeal angiofibroma 18 cases (12.24 % cases), schneiderian papilloma 5 cases (4 cases were of inverted papilloma and one rare case that was an everted papilloma). 3 cases of rhinosporidiosis and 4 cases of rhinoscleroma were encountered.

The clinico-histopathological correlation in our case study was 96 %. Kale et al. [15] studied 344 cases and found clinico-histopathological correlation in 99.7 % cases and Diamantopoulus et al. [16] 2,021 in 98.9 % cases among 2,021 specimens. The relatively lower clinico-histopathological correlation when compared to other study can be attributed to lesser number of cases included in present study.

Histopathology report helped in determining nature of lesion thus confirming or refuting the diagnosis (Fig. 1). Radiological investigation like CT scan revealed extent of disease thus helping in planning line of management (Fig. 2).

Discussion

As the cases were collected for period of 4 years this study may have credentials in reflecting certain facts regarding SNM.

The maximum number of patients presented during second decade. The increased number of patients in the second decade may be due to the frequent exposure to infection due to more outdoor activities in this age group. The predominance of males was observed in present study. This may be due to the increased prevalence of such disorder among the male or it may be simple reflection of overall higher male attendance in the hospital.

From socio-economic background most of the patient belong to lower class. The unhygienic living conditions and habits of these patients might be responsible for such a pattern and probably upper class approach less often to government hospital, rather they took their health service at private clinic or hospital.

Nasal polyps have been recognised and treated since ancient times. Nasal polyps diagnosed clinically are always not of inflammatory origin. A variety of neoplastic and non neoplastic conditions can present as nasal polyps. Delay in diagnosis occur due to similarity to benign condition. Nevertheless the majority of nasal polyps result as a consequence of chronic mucosal inflammation and inflammatory polyps are the commonest of all polypoidal lesions in the nose presenting as nasal polyps.

Rhinosporidiosis was a common occurrence in this study though this is not endemic area. This pattern may be due to endemic areas like chhattisgarh adjacent to this place.

Fig. 1 Histopathological picture **a** inverted papilloma **b** antrochoanal polyp **c** everted papilloma **d** rhinoscleroma

Though the percentage was very high for malignant tumour, we think the reason behind this was, as the management of sinonasal malignancy was destructive with obvious morbidity, usually these cases were not managed

at private clinic or hospital. Hence most of the sinonasal malignancy cases attended the government hospital (which was not similar for other sinonasal diseases).

CT scan is mandatory whenever functional endoscopic sinus surgery is performed. CT scan PNS done in coronal section are more helpful as compared to axial section. Radiological documentation with CT scan serves two functions i.e. demonstration of anatomical details and its variation and the diagnosis of the extent and nature of pathological change.

Conclusion

The operating surgeon should make maximum contribution to create awareness among people regarding misconceptions about signs and symptoms of this disease.

Preoperative diagnosis based on proper clinical examination is consistent with histopathological diagnosis in most cases. Squamous cell carcinoma is the most common malignant nasal tumour and may present in different age groups.

The purpose of this study is to emphasize upon need of hour i.e. to send any tissue removed from the nose for HPE

Fig. 2 CT scan PNS showing opacity in right maxillary region

without unnecessary delay to prevent any future complications.

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Conflict of interest None.

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