

SPECTRUM OF SINONASAL MASS AT A TERTIARY LEVEL HOSPITALAmit Kumar Bhardwaj¹, Amit Kumar Tiwar², Tapas Ranjan Behera³, Amar Bahadur Singh⁴, Maikal Kujur⁵¹Demonstrator, Department of Pathology, Chhattisgarh Institute of Medical Sciences, Bilaspur, Chhattisgarh, India.²Assistant Professor, Department of Pathology, Chhattisgarh Institute of Medical Sciences, Bilaspur, Chhattisgarh, India.³Junior Resident, Department of Pathology, Chhattisgarh Institute of Medical Sciences, Bilaspur, Chhattisgarh, India.⁴Assistant Professor, Department of Pathology, Chhattisgarh Institute of Medical Sciences, Bilaspur, Chhattisgarh, India.⁵Assistant Professor, Department of Pathology, Chhattisgarh Institute of Medical Sciences, Bilaspur, Chhattisgarh, India.**ABSTRACT****BACKGROUND**

Lesions of the sinonasal region are commonly encountered in clinical practice. These lesions are important from clinical and pathological view as they have a variety of histological spectrum with different managements.

MATERIALS AND METHODS

Present study included 106 polypoidal lesions of the nasal cavity. The study period constituted from March 2003 to August 2014. All the tissues were fixed in 10% buffered formalin, processed and stained with Haematoxylin and Eosin and studied for various histopathological patterns.

RESULTS

Among 106 cases, 87 cases (82.07%) were nonneoplastic and 19 cases (17.92%) were neoplastic. Among the noninflammatory lesion, nasal polyp was found in 76 cases (87.7%) and was the commonest lesion. Benign tumours were 11 in number (10.35%) and were more frequent than malignant tumours, which were 8 in number (7.54%). Among benign neoplastic lesions, angiofibroma and haemangioma (each 4 in number) (36.36%) were the commonest lesion. All lesions were common in second and third decades with male predominance in benign, while malignant lesions were more common in female gender. Among the malignant lesions, squamous cell carcinoma and undifferentiated nasopharyngeal carcinoma were the most common malignant lesions, each were three in number.

CONCLUSION

Categorisation of the sinonasal mass according to their histopathological features and comparing them with the existing data guides the treatment and prognosis of the disease, so far every polypoidal lesions histological examination is advised.

KEYWORDS

Nasal Mass, Nonneoplastic, Neoplastic, Benign, Malignant.

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BACKGROUND

The nasal cavity and paranasal sinuses are often grouped under the term "sinonasal."¹ Sinonasal mass is a common finding in the Otorhinolaryngology Department in almost all age groups of patients. These masses maybe neoplastic or inflammatory (including allergic, traumatic, granulomas).² Nasal polyps are the most common nasal masses. It is bulging of oedematous mucosal connective tissue covered by respiratory epithelium.³ They are often bilateral and multiple, which lead to visible broadening of nose⁴ and are not true neoplasms. Inflammation, allergy or mucoviscidosis may be associated with their formation.¹ Among the benign

neoplastic condition, haemangioma, angiofibroma and sinonasal papilloma are commonly found within nasal cavity. Malignant tumours in the nasal cavity and paranasal sinuses account for less than 1% of all carcinomas and for about 3% of the neoplasms of the head and neck regions.⁵

Squamous cell carcinoma is the most common microscopic type of sinonasal neoplasm affecting the nasal skin and nasal cavities.³ Adenocarcinomas of various types comprise 10% to 20% of all primary malignant neoplasms of the nasal cavity and paranasal sinuses.⁶ Adenoid cystic carcinoma usually occurs in the maxillary sinus and nasal cavity.⁶ Mucosal melanoma of the head and neck accounts for less than 1% of the cases in this site.⁷ They arise from melanocytes located in the epithelium and stroma of the respiratory mucosa.¹

Keeping in view, the various types of histopathological features and clinical presentation of sinonasal mass, the present study was planned and has been undertaken in the Department of Pathology of Chhattisgarh Institute of Medical Sciences, Bilaspur, for a period of 11 years from March 2003 to August 2014.

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AIMS AND OBJECTIVES

1. To study the incidence of benign and malignant lesions of sinonasal mass.
2. To study distribution of various lesions for sex differences and symptomatology.

MATERIALS AND METHODS

This is a retrospective analytical review of all the patients with sinonasal masses that underwent surgical intervention in Chhattisgarh Institute of Medical Sciences, Bilaspur, for a period of 11 years from March 2003 to August 2014. Data regarding their clinical profile and histological diagnoses were collected from the medical records departments and records of biopsy reports collected from the pathology department. A total of 106 cases of sinonasal mass underwent biopsy interpretation.

The specimens were fixed in 10% formalin and sent to the Department of Histopathology. The specimens were observed grossly and findings were noted. The biopsy tissue were then sectioned and processed in the conventional manner.⁸ After completion of processing, they were then made in paraffin blocks and cut in rotatory microtome of about 5 µm thickness. The sections were stained by conventional Haematoxylin and Eosin mounted in DPX and examined under light microscope and their special features were noted.

RESULTS AND OBSERVATIONS

Out of 106 cases, 87 cases (82.07%) were nonneoplastic, 11 cases (10.35%) were benign tumours and 8 cases (7.54%) were malignant tumours. The age of the patients ranged from 6 to 90 years with a mean age of 33 years (Table 2, 3). Majority of the patients were in the age groups 11-30 years. There were 70 males and 36 females with M:F ratio of 1.9:1. The common presentation of the sinonasal masses were nasal obstruction (97% cases), rhinorrhoea (53%), anosmia (33%) and headache (18%). Epistaxis was noticed in 13% of cases (Table 9, Chart 5).

Among the benign neoplastic lesion, angiofibroma and haemangioma was the commonest, each seen in 4 cases (36.36%) in the present study followed by papilloma, which is 2 in number (18.18%) (Table 7, Chart 3).

Among the malignant cases, squamous cell carcinoma and undifferentiated nasopharyngeal carcinoma were seen in three cases each. One case each of basal cell carcinoma and verrucous carcinoma were also detected during the study period (Table 8, Chart 4).

DISCUSSION

Nasal obstruction is among the commoner clinical presentation. The present study revealed that nasal polyps are the commonest sinonasal masses similar to the findings of other study.^{2,3,9} Among the benign neoplastic lesion, angiofibroma and haemangioma were commonest (36.36%). Nasal angiofibroma presented with epistaxis and nasal obstruction. Similar findings were seen in the other study too.^{2,3,9} Epistaxis was the commonest clinical presentation of haemangioma followed by mass effect. In

the present study, only 1 case of inverted papilloma were found.

In our study, out of eight malignant neoplasm cases, three cases of squamous cell carcinoma were detected. Two of the three cases were from female gender. Age ranged from 34-70 years. They presented with rapid onset nasal mass with history of bleeding per nose. This finding is similar to the finding of Svane-Knudsen et al.¹⁰

In our study, no rhinoscleroma case was seen (Table 6, Chart 2). Our finding is different in this regard to the Zafar et al¹¹ and Tondon et al.¹² Rhinosporidiosis is caused by rhinosporidiosis seeberi present as polypoidal mass on nasal mucosa. This lesion is common in the endemic zones like West Bengal. The present study is showing similar finding to Sammaddar et al.¹³

The present study also detected squamous cell carcinoma along with undifferentiated nasal cell carcinoma to be the commonest (each three in number) (Table 8, Chart 4). While only squamous cell carcinoma were reported in studies by Humayun et al and Seema et al.^{2,9} Our study did not find any case of malignant melanoma, which is unlike finding of Kailash et al.^{7,14}

CONCLUSION

Sinonasal mass forms a wide spectrum of lesion ranging from inflammatory to neoplastic lesions like angiofibroma; capillary haemangioma being at one end while squamous cell carcinoma at the other end of the spectrum. Rare tumour like adenoid cystic carcinoma and melanoma was not detected in the study. The main strength of the study is that it gives the histopathologic pattern along with clinical finding of the sinonasal mass. Histopathological examination is very important in diagnosing the lesions. It is the only means of determining the nature of the disease, i.e. inflammatory versus neoplastic.

Since, it is a hospital-based study, it may not be reflecting the community well. This is the limitation of the study. However, it should be stated that all lesions need histopathological examination for proper diagnosis and prognosis.

Type of Mass	Male	Female	Total
Nonneoplastic	59 (55.66%)	28 (26.41%)	87 (82.07%)
Neoplastic	11 (10.37%)	8 (7.54%)	19 (17.92%)
Total	70 (66.03%)	36 (33.96%)	106

Table 1. Incidence of Nasal Mass and Grouped According to Gender

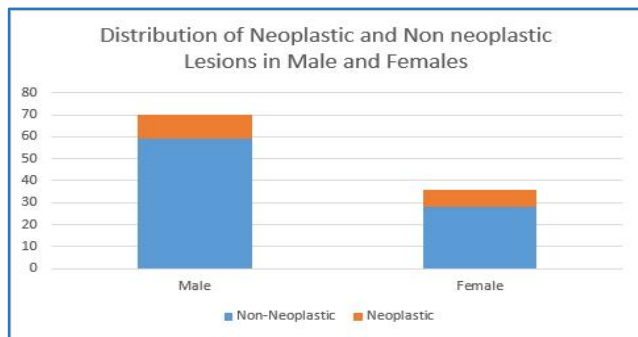


Chart 1. Neoplastic and Nonneoplastic Lesions in Males and Females

Nonneoplastic Mass	Male	Female
Allergic polyp	1 (1.14%)	0
Inflammatory polyp	7 (8.04%)	4 (4.59%)
granulomatous polyp	1	1 (1.14%)
Rhinoscleroma	0	0
Rhinosporidiosis	48(55.17%)	25 (28.73%)
Total	57 (65.51%)	30 (34.48%)

Table 6. Distribution of Nonneoplastic Nasal Mass According to Sex of the Patient

Age (Years)	Number of Males	Number of Females	Total
<10	8	5	13 (14.94%)
11-20	26	17	43 (49.42%)
21-30	15	5	20 (22.98%)
31-40	5	2	7 (8.04%)
41-50	3	1	4 (4.59%)
51-60	0	0	0 (%)
>61	0	0	0 (%)
Total	57 (65.51%)	30 (34.48%)	87

Table 2. Distribution of Nonneoplastic Nasal Mass According to Age

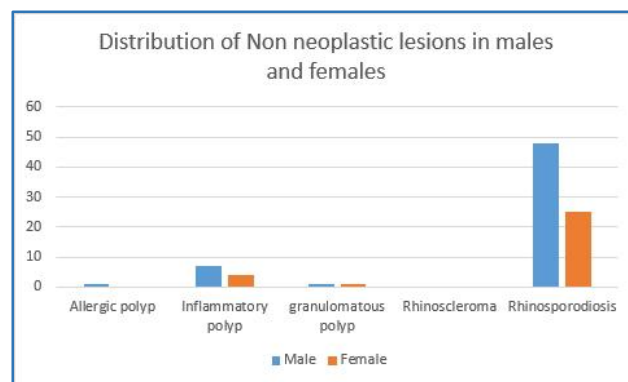


Chart 2. Distribution of Nonneoplastic Lesions

Age (Years)	Number of Males	Number of Females	Total
<10	1	0	1 (5.26%)
11-20	2	0	2 (10.52%)
21-30	0	2	2 (10.52%)
31-40	2	4	6 (31.57%)
41-50	1	1	2 (10.52%)
51-60	2	0	2 (10.52%)
>61	3	1	4 (21.05%)
Total	11 (%)	8 (%)	19

Table 3. Distribution of Neoplastic Nasal Mass According to Age

Histological Type	Number of Cases	Male	Female
Haemangioma	4 (36.36%)	2 (18.18%)	2 (18.18%)
Angiofibroma	4 (36.36%)	3 (27.27%)	1 (9.09%)
Inverted papilloma	1 (9.09%)	1 (9.09%)	0
Nasal papilloma	2 (18.18%)	2 (18.18%)	0
Total	11	8 (72.72%)	3 (27.27%)

Table 7. Distribution of Benign Neoplastic Lesion

Nonneoplastic Mass	Number	Percentage
Allergic polyp	1	1.15%
Inflammatory polyp	11	12.65%
Granulomatous polyp	2	2.30%
Rhinoscleroma	0	0.00%
Rhinosporidiosis	73	83.90%
Total	87	100%

Table 4. Histological Type of Nonneoplastic Masses According to their Number and Percentage

Nonneoplastic Mass	Number	Percentage
Inflammatory polyp	11	12.3%
Other than inflammatory	76	87.7%

Table 5. Distribution of Nonneoplastic Nasal Mass Between Inflammatory Lesion and Lesion Other than Inflammatory, According to the Number of Patients

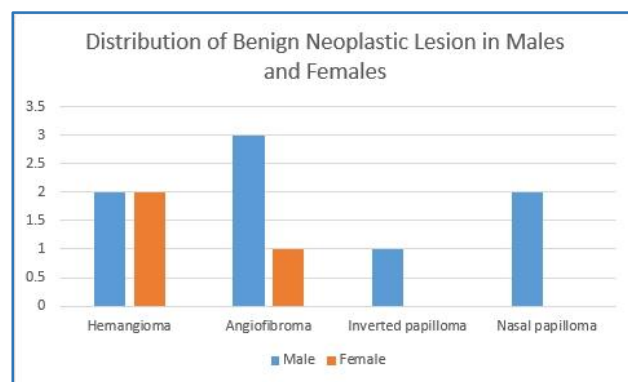


Chart 3. Distribution of Benign Neoplastic Lesion

Histological Type	Number of Cases	Male	Female
Nasopharyngeal carcinoma undifferentiated	3 (37.5%)	1 (12.5%)	2 (25%)
Squamous cell carcinoma	3 (37.5%)	1 (12.5%)	2 (25%)
Basal cell carcinoma	1 (12.5%)	0	1 (12.5%)
Verrucous carcinoma	1 (12.5%)	1 (12.5%)	0
Total	8	3 (37.5%)	5 (62.25%)

Table 8. Distribution of Malignant Neoplastic Lesion

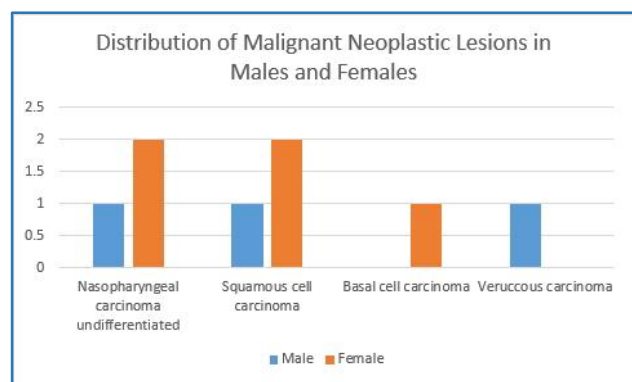


Chart 4. Distribution of Malignant Neoplastic Lesions in Males and Females

Symptoms	Frequency	Percentage
Nasal obstruction	102	97.00%
Epistaxis	14	13.00%
Allergy	1	1.93%
Anosmia	35	33.00%
Rhinorrhea	56	53.00%
Headache	19	18.00%

Table 9. Clinical Symptoms of the Patients and their Numbers

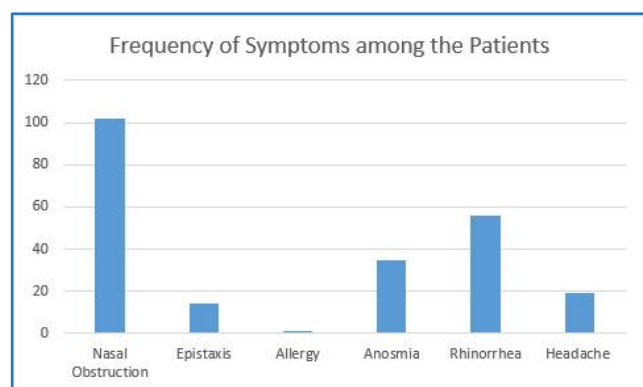


Chart 5. Frequency of Symptoms among Patients

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