

## Original Research

### A study of the clinicopathological features of sinonasal masses at Hitech medical college and hospital, Bhubaneswar

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#### ABSTRACT:

**Objective:** To observe the incidence, clinical presentation and to perform comparative study of different sinonasal masses. **Study design:** Prospective study. **Setting:** Department of ENT OPD of Hitech Medical College and Hospital, Bhubaneswar, Odisha. **Methodology:** 50 patients are included in this study (39 male & 11 female) between the ages of 3 years and 80 years who were treated between October 2019 to November 2021. Study based on history, clinical, radiological, laboratory and histopathological examination. **Results:** Mean age for male was 35.12 years and for female was 22.63 years. Male to female ratio was 3.5:1. Highest frequency was noted in second decade. Most of patient (78%) were from poor class. Frequency of inflammatory nasal masses were more in second decade, benign tumour in fourth and fifth decade, malignant tumour in second decade (OAN & NHL) and fifth and second decades (others). Rhinosporidiosis were most frequent inflammatory nasal masses. Nasal obstruction was the commonest and orbitus symptoms were less frequent symptoms. But orbital symptoms were more prevalent in malignant lesion. **Conclusion:** Sinonasal masses are found in all age group. Rhinosporidiosis are appearing to be the commonest nasal masses. The prevalence of nasal polyp is also high. Among the malignant sinonasal masses the percentage of squamous cell carcinoma is high.

**Key Words:** Sinonasal Mass, Rhinosporidiosis, Nasal Polyp, Squamous Cell Carcinoma, Bhubaneswar

Received: 05 November, 2021

Accepted: 10 December, 2021

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**This article may be cited as:** Mallick M, Panigrahi R, Sutar DK, Mishra V, Parida DMR, Rath M. A study of the clinicopathological features of sinonasal masses at Hitech medical college and hospital, Bhubaneswar. J Adv Med Dent Sci Res 2022;10(1):29-33.

#### INTRODUCTION

In the ENT department, a sinonasal mass is a common discovery.[1] It affects people of practically every age group. These masses can be inflammatory, such as allergic, traumatic, or granulomas, or they can be cancerous.[2] Polyp is the most frequent nasal mass.[3] In our country, rhinosporidiosis is also one of the most prevalent nasal masses.[4] In teenage guys, angiofibroma is a benign yet physiologically aggressive tumour.[5] Anywhere in the nasal cavity, a haemangioma can be detected, however, bleeding polypus of the septum are most usually observed on the anterior section of the septum and in the nasal cavity, a wide range of tumours of various histological kinds can be found.[6] Malignant tumours are uncommon, although benign tumours are widespread

and less than 1% of all cancers are found in this group (3 percent of head and neck tumours).[7] Primary neurogenic tumours affecting the nose and paranasal sinuses are uncommon but in the nasal fossa, Schwann cell tumours, Neurofibroma and Neurilemoma occur infrequently.[8] The olfactory neuroblastoma is the tumour that deserves the most attention.[7] The tissues and structures of the nasal cavity and paranasal sinuses may be involved in sinonasal malignancy.[2] Pathologies that originate in the cranial cavity might manifest as a tumour in the nasal cavity or paranasal sinuses.[5] The original site, the direction and the extent of spread, all influence how sinonasal cancer appears. Nasal obstruction, epistaxis, proptosis, epiphora, diplopia, loose teeth, facial pain and swelling, buccal or palatal oedema are the most

prevalent early symptoms. The presence of nodal involvement significantly lowers the prognosis with the 5-year survival rate dropping from 27.2 percent to 6.8%. Despite the study's limited scope and several flaws, an attempt was made to obtain the most up-to-date facts and numbers on the subject in our country.

#### AIMS AND OBJECTIVES

- To observe the incidence of different sino- nasal masses on the basis of age, sex and socio-economic condition.
- To assess the clinical presentation of different sino-nasal masses.
- To perform a comparative study of their histological types for the purpose of early diagnosis and treatment.

#### METHODS

**Sample:** Patients with sino-nasal masses.

**Sample Size:** 50 cases

**Type of Study:** Prospective

**Study Period:** October 2019 to November 2021

**Place of study:** Department of ENT OPD of Hitech Medical College and Hospital, Bhubaneswar.

#### RESULTS

Out of 50 patients included in this study the lowest and highest age at presentation was 3 years and 80 years respectively, with a mean of 32.38 years. The mean age for male was 35.12 years and that for female was 22.63 years. Male to female ratio was 3.5;1.

The age and sex distribution irrespective of disease is shown in Table-I.

**Table-I: Age and sex of the cases (n-50)**

Age group (years)	No. of patients		Total	Percentage
	Male	Female		
0-10	2	2	4	8.0
11-20	9	5	14	28.0
21-30	10	2	12	24.0
31-40	4	0	4	8.0
41-50	3	2	5	10.0
51-60	6	0	6	12.0
61-70	4	0	4	8.0
71-80	1	0	1	2.0
81-90	0	0	0	0.0
Total	39	11	50	100.0

In this study, highest frequency was noted in second decade.

**Table-II: Socio-economic condition**

Socio-economic condition	No. of patients	Percentage
Poor	39	78
Non poor	11	22

Maximum numbers of patients were from poor class.

**Table-III: Age incidence and relationship with nasal mass**

Age incidence (years)	Ethmoidal	Inflammatory Antrochoanal Polyp	Rhinosporidiosis	Benign tumour	Malignant	Total
0-10	0	2	1	0	1	4
11-20	2	5	3	1	3	14
21-30	1	1	9	0	1	12
31-40	1	2	1	0	0	4
41-50	0	0	2	1	2	5
51-60	1	0	1	1	3	6
61-70	0	0	2	0	2	4
71-80	0	1	0	0	0	1
Total	5	11	19	3	12	50

From the above Table-III it can be observed that inflammatory nasal masses were more frequent in the second decade, benign tumours were more frequent in fourth and fifth decades. Malignant tumours were more frequent in second and fifth to seventh decades.

**Table-IV: Sex incidence and its relationship with nasal mass (n-50)**

Disease	Male	Female	Total
Inflammatory Nasal polypethmoidal	5	0	5
Antrochoanal	8	3	11
Rhinospordiosis	17	2	19
Benign tumours	2	1	3
Malignant tumours	8	4	12
Total	40	10	50

From the above Table-IV it is noted that males outnumbered the females with a ratio of 3.5:1.

**Table- V: Inflammatory nasal mass with average age (n-35)**

Disease	Number	Percent age	Average age(years)
Nasal poly Ethmoidal	5	14.29	31.2
Polyp Anthrochoanal	11	31.43	23.45
Polyp Rhinospordiosis	19	54.28	31.89
Total	35	100	28.84

Among the inflammatory nasal masses, rhinospordiosis were most frequent.

**Table-VI: Benign neoplasm with average age (n-3)**

Disease	Number	Percent age	Average age (years)
Inverted papilloma (Transitional cell papilloma)	1	33.33	60
Meningioma	1	33.33	14
Haemangioma	1	33.33	43
Total	3	100.00	39

From Table-VI average age for benign nasal tumours was 39 years. From table, it was observed that meningioma occur in early age and inverted papilloma occurs in late age.

Here it reveals that among the malignant tumours of nasal cavity squamous cell carcinoma was most frequent (41.67%) with average age 51 years.

**Table-VII: Malignant nasal tumours with average age (n-12)**

Disease	Number	Percentage	Average age (years)
Squamous cell carcinoma	5	41	51
Lymphoma (Non-Hodgkin's lymphoma)	3	25	32.33
Adenoid cystic carcinoma	1	8.33	50
Embryonalrhabdomyosarcoma	1	8.33	03
olfactory neuroblastoma	1	8.33	17
Secondary metastatic carcinoma	1	8.33	60
Total	12	100.00	35.56

**Table-VIII: Clinical symptoms and their number with average duration (n-50)**

Symptoms	Average duration (months)	Number	Percentage
Nasal obstruction	6	47	94.0
Unilateral obstruction	4.5	42	84.0
Bilateral obstruction	6.0	7	14.0
Nasal discharge	2	22	44.0
Sneezing	6	15	30.0
Loss of smell	1.5	34	68.0
Epistaxis	1.0	25	50.0
Deformity of nasal pyramid	1.5	9	18.0
Mouth breathing	1.5	23	46.0
Sore throat	0.5	18	36.0
Headache	3.5	23	46.0
Watering from eye	1.5	8	16.0
Double vision	0.5	0	0.0
Pain in the ears	0.5	2	4.0

Majority of the patients presented with more than one symptom and nasal obstruction was the commonest symptom noted in 47 cases. Orbital symptoms were less frequent.

**Table-IX: Clinical symptoms of inflammatory nasal mass with average duration (n-35)**

Symptoms	Average duration (months)	Number	Percentage
Nasal obstruction	4.5	35	100
Unilateral obstruction	3.5	28	80
Bilateral obstruction	4.5	7	20
Nasal discharge	4.5	29	82.35
Sneezing	2.0	12	34.28
Loss of smell	1.0	23	65.71
Epistaxis	1.0	18	51.43
Deformity of nasal pyramid	1.5	2	5.71
Mouth breathing	1.5	12	34.28
Sore throat	1.5	8	22.86
Headache	3.5	10	28.57
Watering from eye	1.0	2	5.71

The prevalent symptoms in inflammatory nasal mass were nasal obstruction, nasal discharge and loss of smell etc.

**Table-X: Clinical symptoms of benign & malignant nasal tumours with average duration (n-3)**

Symptoms	Benign			Malignant		
	Average duration(Month)	NO.	%	Average duration(Month)	NO.	%
Nasal obstruction	4.0	2	66.66	2.5	12	100.00
Unilateral obstruction	4.5	2	66.66	2.5	10	83.33
Bilateral obstruction	0.0	0	0	1.0	2	16.67
Nasal discharge	2.0	1	33.33	0.5	7	58.33
Epistaxis	1.5	2	66.66	2.5	9	75.00
Loss of smell	0.5	2	66.66	0.5	8	66.66
Deformity of nasal pyramid	0.5	1	33.33	1.0	7	58.33
Mouth breathing	0.5	2	66.66	-	-	-
Headache	1.5	1	33.33	1.0	7	58.33
Watering from eye	0	0	0	0.5	4	33.33
Double vision	0	0	0	-	-	-
Ulceration in cheek	-	-	-	0.5	1	8.33
Proptosis	-	-	-	0.5	3	25.00

Unilateral nasal obstruction was the most frequent symptom in benign nasal tumour and orbital symptoms were more prevalent in malignant nasal tumours.

## DISCUSSION

First, we want to point out the study's limitations while discussing the clinicopathological investigation of sinonasal masses. Actually, this study was conducted over a short period of time i.e., 6 months and with a small number of instances, namely 50. As a result, this study could not possibly represent the general situation in our large country. Though the facts and numbers given here may vary in huge series, this study may have credibility in reflecting some facts regarding sinonasal mass because the cases were gathered over a 6-month period from Hitech Medical College Hospital, Bhubaneswar, Odisha.

In this series, fifty individuals of various ages, sexes and socioeconomic status were studied. Most patients presented were in the second decade. The rise in

patients in the second decade could be related to an increase in the incidence of inflammatory disease in that age group.

The male to female ratio among the patients in this study was 3.5:1. This could be attributable to a higher prevalence of such disorders in men, or it could simply be a reflection of general higher male hospital attendance.

The majority of the patients came from a low-income family (78 percent). This was most likely because wealthy people avoided going to the medical college and hospital and instead sought treatment in a private clinic or corporate hospital. Otherwise, the wealthier had a lower total incidence of sinonasal disorders.

Inflammatory disease is one of the sinonasal diseases studied in this study, with 35 patients (70 percent).

There were three benign tumours (six percent) and twelve malignant tumours (24 percent). As a result, it's safe to believe that the vast majority of the nasal lesions in this series were inflammatory. Tables IV and V show that there are inflammatory sinonasal masses among the inflammatory sinonasal masses.

Rhinosporeidiosis is very common, with 19 cases (54.28 percent) and an average age of 31.89 years. Out of 19 patients affected by Rhinosporeidiosis, 17 (78.47%) were male patients and only 2 (10.53%) were female patients, with patients in their third decade being the most impacted (Table-III). As a result, we can conclude that young males were the most affected, which is consistent with a study done by SatyanarayanC. [9] The majority of rhinosporeidiosis patients in this study had a history of epistaxis, which was consistent to earlier research. Antrochoanal polyp was found in 11 instances (31.43%), with an average age of 23.45 years, while ethmoidal polyp was found in 5 cases (14.29%), with an average age of 31.2 years. Male patients were more affected (13 cases), while female patients were only affected in three cases.

Table-IX shows that practically all inflammatory diseases had a common history of nasal obstruction when it came to clinical manifestation (100 percent). Scott Brown's Otolaryngology supported this conclusion.[10] Nasal discharge for a long time was the second most common symptom (82.85%). Lumsden and Wilson both agreed with this conclusion.[11] Sinonasaltumours are uncommon, accounting for fewer than 3% of all aerodigestive tract tumours. Benign sinonasaltumours accounted for three cases (6 percent) of all sinonasal illnesses in this investigation. One benign tumour was an inverted papilloma (33.33%), one was a meningioma (33.33%), and another was a haemangioma (33.33%). Nasal obstruction and epistaxis were the most common clinical manifestations. The haemangioma in this case had frightening epistaxis.

Malignant tumours were found in 12 cases (24%) of all sinonasal masses in this investigation. Despite the fact that the percentage of malignant tumours was very high, we believe the reason is because the treatment of sinonasal malignancy is destructive and causes significant morbidity, these cases are usually not treated in a private clinic or hospital. As a result, practically all sinonasal malignancies were treated in our medical college and hospital (which did not happen in other sinonasal diseases). As a result, the percentage in this study has risen significantly. This study also found that malignant tumours were more common in the second (OAN & NHL) and fifth to seventh decades (Table-III), which was in line with previous research. Five instances (41.67 percent) of the 12 malignant tumours were squamous cell carcinoma, three cases (25 percent) were lymphoma, one case was adenoid cystic carcinoma, and one case was embryonalrhabdomyosarcoma. Olfactory

neuroblastoma in one case and subsequent metastatic squamous cell carcinoma in the other one.

Squamous cell carcinoma in the sinonasal region had an average age of 51 years, with a male to female ratio of 1.5:1. (Table-VII). Table X shows that nasal obstruction and nasal discharge were the most common symptoms in malignant nasal tumours (100%) and 58.33 percent, respectively.

## CONCLUSION

Epistaxis (75%), nasal pyramid deformity (33.33%), anosmia or hyposmia (66.66%), cheek skin involvement (8.33%), headache (58.33%), and proptosis (25%) were present in our study subjects. It was discovered that embryonalrhabdomyosarcoma and olfactory neuroblastoma were more aggressive than the other sinonasal malignancies based on clinical presentation. Neck node metastasis was also shown to be uncommon or only occurred in patients with advanced illness in this investigation.

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