

Prevalence of Sino-Nasal Masses in A Tertiary Care Hospital**Ravishu Kandhari¹, Richa Gupta², Shiv S Kaushik³**¹3rd Year PG Resident, Department of ENT, PMCH, Udaipur²Professor, Department of ENT, PMCH, Udaipur³Assistant Professor, Department of ENT, PMCH, Udaipur

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Abstract:

Background: Sinonasal masses is very common problem encountered in ENT OPD among all age groups of people. All types of SNM presents with similar symptoms like nasal obstruction, rhinorrhea, epistaxis, oral symptoms, facial swelling, etc. which can be differentiated with the help of thorough clinical examination, nasal endoscopies, radiological investigations like Xray PNS, CT PNS, MRI PNS and can be confirmed with the help of histopathological examination. The aim of this study is to observe the prevalence of Sinonasal Masses in a tertiary care hospital.

Findings: A total of 62 patients were observed in this study, age ranging from 7 to >70 years with maximum number of cases belonging to 11-20 years of age group. This study shows male predominance with male to female ratio of 1.48:1. The most common presenting symptom was nasal obstruction seen in 59 patients followed by nasal discharge seen in 56 patients. Otalgia was the least common symptom seen in 4 patients only. Antrochoanal polyp was the most common type of SNM seen in 34(54.83%) cases followed by ethmoidal polyp in 17(27.41%) cases. Among benign neoplastic SNM nasopharyngeal angiofibroma was seen in 2(3.22%) cases. Squamous cell carcinoma was the only malignant neoplastic SNM seen in 2(3.22%) cases. All the samples of SNM were postoperatively confirmed with the help of histopathological examination.

Conclusion: Nasal obstruction was the most common symptom seen in the patients. Polyps are the most common non-neoplastic lesion whereas squamous cell carcinoma is the most common malignant neoplastic lesion. Medical management play a very limited role, so surgery is the treatment of choice for benign lesions and a combination of surgery and radiotherapy for malignant lesions. Histopathological examination plays a very crucial role in confirmation of diagnosis.

Keywords: Antrochoanal Polyp, FESS, Inverted Papilloma, Nasal Obstruction, Sino-nasal Masses.

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Introduction

Nose being the most prominent part of the face also serves as most important functional and aesthetic significance. The nasal cavity and paranasal sinuses are paired air-spaces within a bony and cartilaginous frame work. The mucosal lining is composed of ciliated, pseudostratified columnar epithelium with interspersed goblet cells, non-ciliated columnar cells and basal cells. The nasal cavity and paranasal sinuses 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[1]. SNM can be classified as congenital, inflammatory, neoplastic (benign or malignant) and traumatic. The presenting features and symptomatology of all sinonasal masses are similar, i.e., nasal obstruction, rhinorrhea, blood stained nasal discharge, epistaxis, oral symptoms, facial swelling, orbital symptoms, ear

symptoms, etc[2]. Sinonasal masses can be divided into two main categories: Non-neoplastic and neoplastic, which in turn is further divided into benign and malignant[3]. SNM most commonly present as nasal polyp and is one of the most common cause of nasal obstruction. Simple nasal polyps are round, smooth, soft, translucent, yellow or pale glistening structures attached to the nasal or sinus mucosa by a relatively narrow stalk or pedicle. They are non-tender and displaced backwards on probing. These features clinically distinguish them from the turbinates, which are sometimes assumed to be nasal polyps by the less experienced[4]. Congenital masses are predominantly mid-line swellings and include dermoids, glioma, and encephaloceles as common diagnoses[5]. Inflammatory masses include polyps which are usually allergic in origin and the commonest nasal masses and most of the patient present with complaint of nasal obstruction[2]. Cancers of the

nose and paranasal sinuses account for less than 1% of all malignancies and about 3% of all head and neck cancers. It has a geographic tendency to affect the African, the Japanese, and the Arab[6].

Radiological investigation like CT Scan and MRI should be carried out in the cases suspected of malignancy. Classically, benign neoplasms expand and remodel bone and aggressive malignancies destroy and invade adjacent tissues, causing ill-defined margin[3]. CT has superior bony definition whereas MRI distinguishes tumour versus retained secretions better. MRI gives superior soft tissue delineation in the adjacent infratemporal fossa, masticator space, and in evaluation of perineural, infra-

However, a careful histopathologic examination (HPE) is necessary to decide the nature of a specific lesion. The HPE of the removed tissue provides the actual diagnosis of the varied conditions labeled as sinonasal mass (SNM). Thus, a detailed history, clinical examination along with nasal endoscopy (Fig. 1), proper imaging and most importantly thorough histopathologic evaluation are essential part of work up of patients, so that, a required and timely intervention is done[8]. Thorough history, meticulous clinical examination along with radiological investigation like CT Scan (Fig. 2) and MRI helps in reaching a provisional diagnosis but to reach the final diagnosis HPE is



orbital, and intra-cranial spread[7].

the gold standard investigation.

Figure 1: Nasal Endoscopy Showing Left Side Nasal Mass



Figure 2: CT PNS Showing Left Sided Nasal Mass

Material & Method

The present study is a prospective study done on 62

patients who presented to Department of ENT, Pacific Medical College and Hospital, Udaipur from April, 2021 to March, 2023 irrespective of

age and sex. History, clinical assessment and histopathological examination (HPE) was done in all cases supplemented by radiological investigation like X-ray PNS, CT Scan PNS and MRI PNS. 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.

Result

In the present study of 62 patients male predominance was found with 37 (59.67%) as compared to females with 25 (40.33%)(Table 1).

Table 1: Gender-wise distribution of cases

S. No.	Gender	No.	Percentage (%)
1	Male	37	59.67
2	Female	25	40.33
	Total	62	100

The age range in the present study is from 7 to >70 years. Maximum number of cases 22 (35.48%) belongs to the age group of 11-20 years whereas least number of cases 2 (3.22%) belongs to the age group of >70 years (Table 2).

Table 2: Age-wise distribution of cases

S. No.	Age	No.	Percentage (%)
1	<10	5	8.06
2	11-20	22	35.48
3	21-30	12	19.35
4	31-40	7	11.27
5	41-50	6	9.67
6	51-60	4	6.45
7	61-70	4	6.45
8	>70	2	3.22
	Total	62	100

In the present study of 62 patients, 52 (83.87%) had unilateral SNM with right side 32 (51.61%) being more common than left side 20 (32.25%). Bilateral SNM was seen in 10 (16.12%) cases (Table 3).

Bilateral Right Left

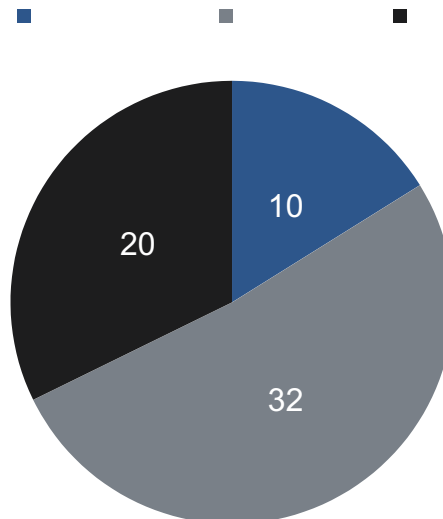


Figure 3: Distribution of Cases on the Basis of Laterality

Most common symptom in the present study was of nasal obstruction with 59 (95.12%) cases followed by nasal discharge in 56 (90.32%) cases. Otagia was the least common symptom found in 4 (6.45%) cases (Table 4).

Table 4: Distribution of cases on the basis of symptoms

S. No.	Symptom	No.	Percentage (%)
1	Nasal Obstruction	59	95.12
2	Nasal Discharge	56	90.32
3	Headache	26	41.93
4	Sneezing	14	22.58
5	Epistaxis	9	14.51
6	Otalgia	4	6.45

In the present study 57 (91.93%) cases showed non-neoplastic lesion and 5 cases were neoplastic out of which 3 (4.83%) cases were benign and 2 (3.22%) cases were malignant (Table 5).

Table 5: Distribution of cases on the basis of type of lesion

S. No.	Type of lesion	No.	Percentage (%)
1	Non- neoplastic	57	91.93
2	Benign	3	4.83
3	Malignant	2	3.22
	Total	62	100

The Antrochoanal polyp was the most common type of SNM with 34 (54.83%) cases followed by ethmoidal polyp in 17 (27.41%) cases. Among benign neoplastic SNM nasopharyngeal angiofibroma was found in 2 (3.22%) cases and inverted papilloma was found in 1 (1.61%) case. Malignant SNM was seen in 2 cases which were of squamous cell carcinoma (Table 6).

Table 6: Distribution of SNM on the basis of histopathological examination

S. No.	Nature of Lesion	No.	Percentage (%)
1	Antro-choanal Polyp	34	54.83
2	Ethmoidal Polyp	17	27.41
3	Rhinolith	6	9.67
4	Nasopharyngeal Angiofibroma	2	3.22
5	Inverted Papilloma	1	1.61
6	Squamous Cell Carcinoma	2	3.22
	Total	62	100

Discussion

In the present study, the predominance of male was observed with male to female ratio of 1.48:1 which was in accordance to previous studies. Rajat Sharma et al showed M:F ratio of 1.38:1[9] while Lathi et al showed male to female ratio of 1.5:1[10]. Gupta et al observed male to female ratio of 1.35:1[1].

The age group of the patient taken in the present study was from 7 to >70 years. Maximum number of patient fall in the age group of 11-20 year with 22 cases and least number patient was found in age group of >70 years with only 2 cases. Gupta et al reported 33 cases in the age group of 11-20 years[1] while the study by Bakari et al showed maximum number of cases in the age group of 21-50 years[11]. In the present study, the most common symptom was nasal obstruction reported in 59 cases (95.12%) followed by nasal discharge seen in 56 cases (90.32%) which was in accordance with the previous studies. Gupta et al reported the main presenting symptom on nasal blockage in 87 (94.5%) cases and rhinorrhoea in 83 (90.2%) cases[1]. Rajat sharma et al reported nasal obstruction in 58% of the cases followed by nasal discharge in 34% cases and postnasal discharge in

22% of cases[9]. Bakari et al reported main presenting symptom of nasal blockage in 97.4% cases followed by rhinorrhoea in 94.7% cases, allergic symptoms in 52.6% cases, anosmia in 34.6% of cases[11].

Non- neoplastic lesion was the most common presentation in the present study with 57 (91.93%) cases followed by 3 (4.83%) cases of benign lesion and 2 (3.22%) cases of malignant lesion. Gupta et al reported 74 (80.44%) cases of non-neoplastic lesions, 12 (13.04%) cases of benign lesions and 6 (6.52%) cases of malignant lesions [1]. Kale et al studied 344 cases and showed 16 neoplastic lesions out of which 9 were benign and 7 were malignant [12]. The histopathological examination (HPE) of all 62 cases in the present study shows the Antrochoanal polyp was the most common finding seen in 34 (54.83%) cases followed by ethmoidal polyp seen in 17 (27.41%) cases. Benign neoplastic lesion was seen in 3 cases with 1 (1.61%) cases of inverted papilloma and 2 (3.22%) cases of nasopharyngeal angiofibroma. HPE confirmed 2 (3.22%) cases of malignant neoplasm both of which were of squamous cell carcinoma. Rajat Sharma et al reported nasal polyps in 86% cases and squamous cell carcinoma in 2% cases and

inverted papilloma in 4% of cases[9]. Gupta et al reported 39 cases of Antrochoanal polyp followed by 16 cases of ethmoidal polyp, 6 cases of inverted papilloma, 5 cases of nasopharyngeal angiofibroma, 5 cases of squamous cell carcinoma and 1 case of adenocarcinoma [1]. Baker et al showed nasal polyp on 28 (36.8%) cases, inverted papilloma in 11 (14.5%) cases and 2 (2.6%) cases malignant [11].

Radiological investigation like CT PNS is required whenever the patient is planned for surgery. CT Scan PNS done in coronal section is better than axial section. Radiological investigations help in demonstrating anatomical details and its variations and the extent and nature of pathological changes. Patients where orbital or intracranial extension of neoplastic mass was suspected MRI was done to assess the actual soft tissue involvement. MRI is vital in establishing the surrounding soft tissue infiltration that determines the tumour respectability. One of the greatest advantage of MRI is to help in distinguishing between tumour and retained secretions in the multiple sinus cavities[13].

Clinically all SNM have similar presenting symptoms, on the basis of which it is difficult to distinguish between malignant and non-malignant lesions accurately. Nasal obstruction is the most common presenting symptom of SNM. Among the non-neoplastic lesions, nasal polyps is the most common lesion whereas squamous cell carcinoma is the most common malignant lesion. Medical management in the treatment of SNM's has a very limited role, whereas surgery is the treatment of choice along with associated radiotherapy in cases of malignant lesions and tissue sample taken during the surgery is sent for HPE. Provisional diagnosis can be made with the help of a good clinical history, thorough clinical examination, nasal endoscopies, radiological investigation like Xray PNS, CT PNS and MRI but histopathology is mainstay to reach a proper final diagnosis.

Histopathological examination is conclusive in diagnosing the polypoid lesions, describing both aetiology and cellular details. It is the only means of determining nature of disease, i.e inflammatory or neoplastic. Radiological investigations may also help in understanding the type of pathology, extension of lesion and associated sinus pathology. Most of non-neoplastic and benign neoplastic nasal masses require surgical excision, while malignant neoplastic nasal masses require wide surgical excision, radiotherapy or chemotherapy either alone or in combination[10].

Conclusion

Sino-nasal masses can have various differential diagnosis with similar presenting features, but

malignant lesions can be distinguished with non-malignant lesions with correlation of clinical, radiological and pathological modalities. Polyps are the most common non-neoplastic lesion whereas squamous cell carcinoma is the most common malignant lesion.

Maximum number SNM cases were seen in 2nd decade of life. Nasal obstruction was the most common presenting feature. Medical management play a very limited role so surgery is the treatment of choice for benign lesions and a combination of surgery and radiotherapy for malignant lesions. HPE plays a very crucial role in reaching the final diagnosis.

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