ORIGINAL RESEARCH

Sino nasal Masses: A Retrospective Analysis

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ABSTRACT

Aim: The presence of a mass in the nose and paranasal sinuses may appear to be a straightforward clinical issue, but it often presents a diagnostic challenge due to the wide range of possible underlying conditions. Hence: the present study was conducted for assessing the clinical and histopathological characteristics of various sinonasal masses (SNM) to aid clinicians in making an early and accurate diagnosis. Materials and methods: The present retrospective study was conducted on 50 patients diagnosed with sinonasal masses (SNM). Each patient underwent a comprehensive clinical assessment, including detailed history-taking covering age, sex, socioeconomic status, duration of symptoms, and presenting complaints. This was followed by a thorough clinical examination and necessary radiological investigations such as X-ray of the paranasal sinuses (PNS), computed tomography (CT) scans in both coronal and axial sections, and magnetic resonance imaging (MRI) when indicated.All patients underwent surgical excision of the sinonasal mass, and the excised tissue was sent for histopathological examination (HPE). The histopathological findings were then correlated with the clinical diagnosis to ensure accuracy and to aid in the final diagnosis. This multi-modal approach combining clinical, radiological, and pathological assessments ensured a comprehensive evaluation and management of each case. Data analysis was done using SSPS software. Results: Out of the total 50 patients included in the study, 23 were male, accounting for 46% of the cases, while 27 were female, comprising 54%. This indicates a slightly higher prevalence of sinonasal masses among females in the study population. The most commonly reported symptom among patients was anosmia or hyposmia, observed in 26% of cases, followed by nasal blockage in 24%. Epistaxis was present in 16% of patients, while headache and sneezing were each reported by 10% of the study group. Rhinorrhoea was noted in 8% of cases, otalgia in 4%, and diplopia was the least common symptom, seen in only 2% of the patients. Among the 50 cases studied, 48% were diagnosed with non-neoplastic lesions, making it the most common type. Benign lesions accounted for 34% of the cases, while malignant lesions were observed in 18% of the patients. Conclusion: The study underscores the crucial role of the operating surgeon in promoting awareness and correcting misconceptions about the signs and symptoms of sinonasal diseases. It also highlights that clinical examination usually correlates well with histopathological findings and stresses the importance of promptly sending all excised nasal tissues for histopathological evaluation to prevent future complications. Keywords: Lesions, malignant, benign

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INTRODUCTION

The presence of a mass in the nose and paranasal sinuses may appear to be a straightforward clinical issue, but it often presents a diagnostic challenge due to the wide range of possible underlying conditions. Nasal polyps (NPs), a common component of sinonasal masses (SNM), have been recognized since ancient times, with their removal by snare documented by Hippocrates—a technique that persisted well into the 20th century. Clinically, simple nasal polyps are smooth, round, soft, translucent, and pale or yellowish structures that are attached to the mucosa of the nasal cavity or sinuses by a narrow stalk or pedicle. They are non-tender and can be pushed backward during examination.^{1,2,3}

These characteristics help differentiate them from turbinates, which may be mistaken for polyps by inexperienced examiners. Unlike turbinates, which shrink upon application of vasoconstrictors, polyps do not. Nasal polyps are commonly associated with chronic inflammation caused by a combination of allergy and infection. While they are a frequent cause of nasal obstruction in adults, their occurrence in children is extremely rare, estimated at only 0.1%. In the general population, nasal polyps have an estimated prevalence of 4%, though cadaveric studies have reported rates as high as 40%, particularly in individuals over the age of 20.4.5

Benign tumors of the nasal cavity and paranasal sinuses are relatively common. On the other hand, malignancies of this region are rare, accounting for less than 1% of all cancers and approximately 3% of head and neck cancers. Interestingly, there is a geographical predisposition to these malignancies, with higher incidences reported in populations from Africa, Japan, and the Arab world. In contrast, they

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are considered rare in Western Europe and North America.⁶

The aim of our study is to present the clinical and histopathological characteristics of various sinonasal masses (SNM) to aid clinicians in making an early and accurate diagnosis.

MATERIALS AND METHODS

The present retrospective study was conducted on 50 patients diagnosed with sinonasal masses (SNM). Each patient underwent a comprehensive clinical assessment, including detailed history-taking covering age, sex, socioeconomic status, duration of symptoms, and presenting complaints. This was followed by a thorough clinical examination and necessary

radiological investigations such as X-ray of the paranasal sinuses (PNS), computed tomography (CT) scans in both coronal and axial sections, and magnetic resonance imaging (MRI) when indicated.

All patients underwent surgical excision of the sinonasal mass, and the excised tissue was sent for histopathological examination (HPE). The histopathological findings were then correlated with the clinical diagnosis to ensure accuracy and to aid in the final diagnosis. This multi-modal approach combining clinical, radiological, and pathological assessments ensured a comprehensive evaluation and management of each case. Data analysis was done using SSPS software.

RESULTS

Table 1: Gender-wise distribution of cases

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S.no.	Gender	No.	Percentage
1	Male	23	46
2	Female	27	54
	Total	50	100

Out of the total 50 patients included in the study, 23 were male, accounting for 46% of the cases, while 27 were female, comprising 54%. This indicates a slightly higher prevalence of sinonasal masses among females in the study population.

S.no.	Symptoms	No.	Percentage	
1	Headache	5	10	
2	Diplopia	1	2	
3	Otalgia	2	4	
4	Anosmia/Hyposmia	13	26	
5	Sneezing	5	10	
6	Nasal blockage	12	24	
7	Rhinorrhoea	4	8	
8	Epitaxis	8	16	

The most commonly reported symptom among patients was anosmia or hyposmia, observed in 26% of cases, followed by nasal blockage in 24%. Epistaxis was present in 16% of patients, while headache and sneezing were each reported by 10% of the study group. Rhinorrhoea was noted in 8% of cases, otalgia in 4%, and diplopia was the least common symptom, seen in only 2% of the patients.

Table 3: Distribution of sinonasal masses as per type of lesion

	1 71		
S.no.	Type of lesion	No.	Percentage
1	Non Neoplastic lesion	24	48
2	Benign	17	34
3	Malignant	9	18
	Total	50	100

Among the 50 cases studied, 48% were diagnosed with non-neoplastic lesions, making it the most common type. Benign lesions accounted for 34% of the cases, while malignant lesions were observed in 18% of the patients.

Table 4: Distribution of	sinonasal masses as	per histopathological	diagnosis
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S.no.	Nature Of lesion	No.	Percentage
1.	Ethmoidal polyp	12	24
2.	Antrochonal polyp	14	28
3.	Inverted papilloma	5	10
4.	Angiomatous polyp	7	14
5.	Rhinosporidiosis	3	6
6.	Nasopharyngeal angiofibroma	4	8

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7.Squamous cell carcinoma510

Among the various types of sinonasal lesions observed, antrochonal polyps were the most common, accounting for 28% of cases, followed by ethmoidal polyps at 24%. Angiomatous polyps constituted 14% of the lesions, while both inverted papilloma and squamous cell carcinoma were seen in 10% of cases each. Nasopharyngeal angiofibroma was present in 8% of the patients, and rhinosporidiosis was the least common, observed in 6% of the cases.

DISCUSSION

Sinonasal masses (SNM) represent a diverse group of lesions arising from the nasal cavity and paranasal sinuses, encompassing both non-neoplastic and neoplastic conditions. These masses may present with a variety of symptoms such as nasal obstruction, rhinorrhoea, epistaxis, facial pain, and anosmia, often depending on the size, location, and nature of the lesion. SNMs can range from simple inflammatory polyps to aggressive malignant tumors, making early and accurate diagnosis crucial.^{7,8} Due to their anatomical location and often non-specific symptoms, these lesions may be misdiagnosed or overlooked, underscoring the importance of a thorough clinical examination, radiological evaluation, and histopathological confirmation to ensure appropriate management.

In our study, out of the 50 patients evaluated, 23 were male (46%) and 27 were female (54%), indicating a slightly higher prevalence of sinonasal masses among females. The most commonly reported symptom was anosmia or hyposmia, observed in 26% of the cases, followed by nasal blockage in 24%. Epistaxis was reported in 16% of patients, while headache and sneezing were each noted in 10%. Rhinorrhoea was present in 8% of cases, otalgia in 4%, and diplopia was the least common symptom, observed in only 2% of the patients.

In terms of lesion type, non-neoplastic lesions were the most frequent, seen in 48% of cases, followed by benign lesions in 34% and malignant lesions in 18%. Histopathological analysis revealed that antrochonal polyps were the most common diagnosis, accounting for 28% of cases, followed by ethmoidal polyps at 24%. Angiomatous polyps were seen in 14% of patients, while both inverted papilloma and squamous cell carcinoma were identified in 10% of cases each. Nasopharyngeal angiofibroma accounted for 8%, and rhinosporidiosis was the least common, present in 6% of the cases.In a retrospective analytical review conducted by Gupta R et al.9, data from 92 patients with sinonasal masses (SNM) who attended the Department of ENT at S.S. Medical College & Associated Hospital, Rewa, between January 2008 and August 2012 were analyzed. The study, carried out in a tertiary care referral center, included patients aged 7 years to over 70 years, with a male-to-female ratio of 1.35:1. The highest incidence (35.86%) was observed in the 11-20-year age group. Nasal blockage (94%) and rhinorrhoea (90%) were the most frequently reported symptoms. Regarding the site of involvement, 48.9% of patients had left-sided masses, 34.78% had right-sided, and 16.3% had bilateral

involvement. Histopathological examination identified antrochoanal polyps as the most common type (42.39%), followed by ethmoidal and angiomatous polyps, while 6.52% of cases were found to be malignant. The study emphasized the regional prevalence and clinical characteristics of SNM, underscoring the need for early detection, accurate diagnosis, and effective treatment.

In a retrospective analytical review by Bakari A et al.¹⁰, data from patients with sinonasal masses who presented to the National Ear Care Center, Kaduna, over a six-year period (2003-2008) were analyzed, focusing on their biodata, clinical presentation, and histological diagnoses. A total of 76 patients, aged 5 to 64 years (mean age 33.3 years, $SD = 13.1 \pm 1.5$), were included, with the majority falling within the 21-50year age group. There were 34 males and 42 females, giving a male-to-female ratio of 1:1.2. The most common presenting symptoms were nasal obstruction (97.4%) and rhinorrhoea (94.7%). In terms of laterality, 44.7% had bilateral involvement, 31.6% left-sided, and 23.7% right-sided. Clinically, simple nasal polyps were most frequently diagnosed (61.8%), by antrochoanal polyps followed (13.2%).Histologically, simple inflammatory nasal polyps were the most common finding (36.8%), with nasal capillary hemangioma being the least common (2.6%). The majority of cases (77.6%) were benign, 2.6% were malignant, and 19.7% were lost to followup. Surgical intervention was carried out in 72.4% of patients. The study highlighted that nasal obstruction and rhinorrhoea remain the most frequent symptoms, with simple inflammatory nasal polyps being the predominant histological type, emphasizing the importance of early diagnosis and referral for surgical management of benign sinonasal masses.

Bist SS et al.¹¹ conducted a prospective study over a 12-month period, including 110 cases of sinonasal masses, with a clinico-pathological evaluation performed for each case. Initial diagnoses were made based on clinical assessment and radiologic findings, while final confirmation was achieved through histopathological examination. The study found that non-neoplastic lesions (60%) were more common than neoplastic ones (40%). Among the neoplastic group, 19.8% had benign and 23.76% had malignant lesions. The highest incidence was observed in the 11–20-year age group (22.72%) with a male-to-female ratio of 1.08:1. Sinonasal polyps accounted for the majority (80.3%) of non-neoplastic lesions, while angiofibroma was the most frequent benign tumor (35%) and carcinoma of the nasal cavity was the most common malignant tumor (45.83%). In 3.63% of

cases, clinical and radiologic diagnoses did not align with histopathological findings, and two cases required immuno-histocytochemistry for definitive diagnosis. The study emphasized that accurate diagnosis of sinonasal masses relies on a combined approach using clinical, radiological, and histopathological with assessments, immunohistocytochemistry playing a vital role in select cases. Lathi A et al.¹² conducted a study on 112 patients with sinonasal masses at a rural tertiary care hospital in western Maharashtra from May 2007 to June 2009, assessing their clinico-pathological profiles. The majority of cases (71.4%) were non-neoplastic, while 28.6% were neoplastic. Nasal obstruction (97.3%) was the most common symptom, followed by rhinorrhoea and hyposmia. The middle meatus was the most frequent site of origin, and nearly half of the patients had unilateral involvement. Allergic and inflammatory polyps were the most common nonneoplastic lesions, while haemangioma and inverted papilloma were the predominant benign neoplasms. Squamous cell carcinoma was the most frequent malignancy. Most patients underwent surgical treatment, primarily functional endoscopic sinus surgery, while malignancies were managed with radiotherapy.

One of the main drawbacks of our study is the relatively small sample size, which may limit the generalizability of the findings. As a result, the outcomes and patterns observed may not accurately reflect the broader population, and variations in clinical presentation, diagnosis, or treatment response could occur in larger or more diverse patient groups.

CONCLUSION

The study underscores the crucial role of the operating surgeon in promoting awareness and correcting misconceptions about the signs and symptoms of sinonasal diseases. It also highlights that clinical examination usually correlates well with histopathological findings and stresses the importance of promptly sending all excised nasal tissues for histopathological evaluation to prevent future complications.

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