Original Research

CLINICOPATHOLOGICAL PROFILE AND MANAGEMENT OF SINONASAL MASSES IN A TERTIARY CARE TEACHING HOSPITAL

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ABSTRACT

Background: Sinonasal masses comprise a wide range of inflammatory, benign, and malignant lesions that often present with similar symptoms. Accurate diagnosis is essential due to the proximity of the sinonasal region to vital structures. Objectives: To study the clinical presentation, pathological profile, radiological findings, and treatment outcomes of sinonasal masses.

Materials and Methods: This prospective observational study was conducted in the Department of ENT, Kurnool Medical College after approval from the Institutional Ethics Committee (IEC No: KMC/IEC/2023-24/ENT/274). Patients with sinonasal masses underwent clinical evaluation, diagnostic nasal endoscopy, imaging, and histopathological examination. Data were analysed using descriptive statistics.

Results: Eighty patients were included. Non-neoplastic lesions were most common (63.8%), followed by benign tumors (22.5%) and malignancies (13.7%). Nasal obstruction was the most frequent symptom. Inflammatory nasal polyps were the most common diagnosis. Functional endoscopic sinus surgery was the primary treatment in most patients.

Conclusion: Sinonasal masses are predominantly inflammatory and benign. Early diagnosis using nasal endoscopy and imaging allows effective management, while malignant lesions require multimodality treatment.

Keywords: Sinonasal Mass, Nasal Polyp, Inverted Papilloma, FESS, Sinonasal Tumor.

INTRODUCTION

Sinonasal masses are frequently encountered in otorhinolaryngology practice and include a broad spectrum of pathological entities ranging from simple inflammatory polyps to aggressive malignancies. These lesions often present with nasal obstruction, discharge, epistaxis, and facial discomfort, making clinical differentiation difficult. Because of their anatomical proximity to the orbit, cranial cavity, and major neurovascular structures, delayed diagnosis can lead to serious complications. A systematic approach involving endoscopic evaluation, imaging, and histopathological confirmation is therefore essential.

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MATERIALS AND METHODS

This prospective observational study was conducted in the Department of ENT, Kurnool Medical College and Government General Hospital, Kurnool during 2023–2024.

Ethical approval: Approved by Institutional Ethics Committee, Kurnool Medical College. IEC No: KMC/IEC/2023-24/ENT/274

Inclusion Criteria: All patients of any age and sex presenting with clinically evident sinonasal masses.

Evaluation: All patients underwent:

- Detailed clinical examination
- Anterior rhinoscopy and diagnostic nasal endoscopy
- Radiological evaluation (CT/MRI when required)
- Histopathological confirmation

Lesions were classified as non-neoplastic, benign neoplastic, or malignant.

Diagnosis in OPD: By clinical features, Anterior Rhinoscopic examination, Diagnostic nasal endoscopy (DNE)

RESULTS

Figure 1: Anterior Rhinoscopy

Pale, greyish white, glistening polypoidal tissue noted in nasal cavity, which are insensitive to touch, and does not bleed on probing usually.

Diagnostic Nasal Endoscopy: Should be done in all cases of nasal, paranasal sinus diseases. It will make out polyp /mass origin, number (single or multiple), pulsating mass, colour; surface of the mass, nasopharyngeal extension can be identified.

Figure 2: Diagnostic Nasal Endoscopy

Various nasal masses at our institution:

Case 1: Nasolabial Cyst: (image 3&4):

This is a case of left nasolabial cyst came with complaints of left sided swelling which is painless and slow growing .final diagnosis came to know by DNE, intra oral examination, radiological examination.

- ❖ Caldwell luc approach: accessible for removal of complete cyst

Figure 3 & 4: Nasolabial Cysts

Case 2: Benign Nasal Mass (Papilloma) in Vestibule of Nose (image 5):

The patient presented with a localised mass in the nasal vestibule,which was excised surgically and cofirmed as papilloma on histopathology.

Figure 5: Papilloma Vestibule of Nose

Case 3: Inverted Papilloma: (Image 6) In this case tumor extensively involved the right maxillary sinus Management and plan in this case: As the tumor was extensively involving the right maxillary sinus we planned an open approach through dieffanbach"s modification of weber ferguson incision. Complete resection of the tumor, ensuring clear margins. Removal of the involved sinus mucosa to prevent recurrence in this case

Figure 6: Inverted Papilloma

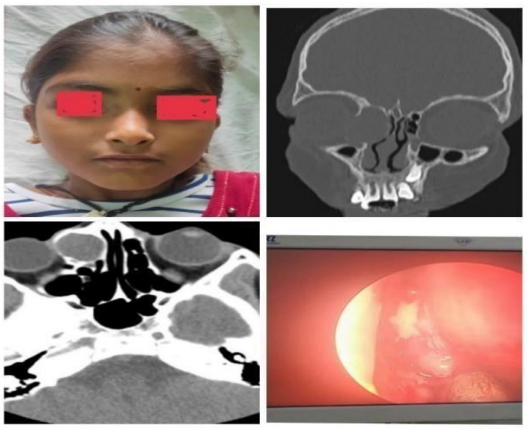

Figure 7: Case 4: Ethmoid Mucocele case

Figure 7: Management in this mucocele case: surgical excision (functional endoscopic sinus surgery)
Endoscopic Marsupialization was done. The mucocele is opened into the nasal cavity, allowing continuous drainage was done in this case

Case 5: Adenoid Cystic Carcinomas of Sino nasal Mucosa (Maxilla): (Image 8)

Figure 8: Adenoid Cystic Carcinomas of Sino nasal Mucosa

Management in this case: (image 8): Open Approach through weber ferguson incision with dieffanbach‟s and total maxillectomy with excision of mass Surgery followed by post-operative radiotherapy given for this patient.

Figure 9: Post-Operative Image: of Adenoid Cystic Carcinoma of Maxilla

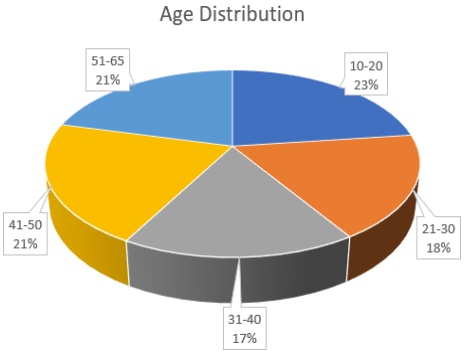

Figure 10: Age Distribution: (10-20 > 41-50 = 51-65 > 21-30 > 31-40)

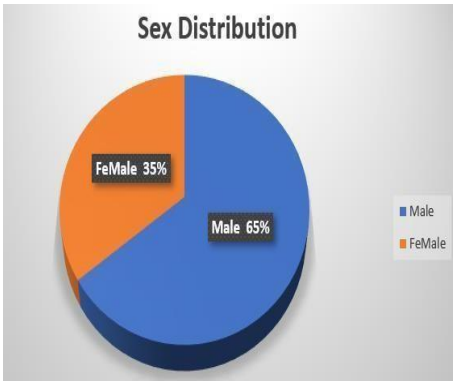

Figure 11: Sex distribution: Male > female: (65: 35)

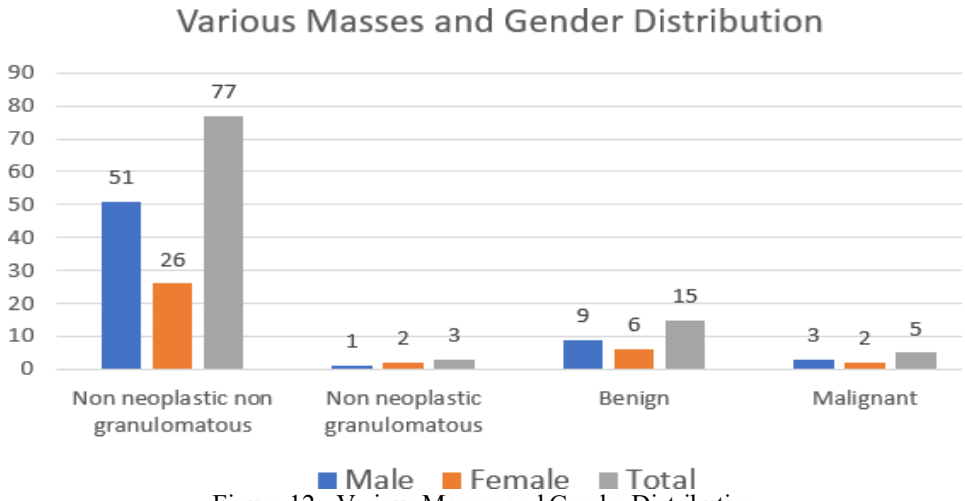

Figure 12: Various Masses and Gender Distribution

Table 1: Different Types of Masses and Their Distribution in This Study

S.NO	Type of Mass		Number of Patients	Percentage
A	Non neoplastic non granulomatous mass	AC polyp	20	20%
		Ethmoidal polyp	36	36%
		Allergic fungal polyp	15	15%
		Mucocele	3	3%
		Nasolabial cyst	3	3%
B	Non neoplastic granulomatous mass	Rhinosporidiosis	1	1%
		Mucormycosis	2	2%
C	Benign nasal mass	Inverted papilloma	10	10%
		Juvenile nasopharyngeal angiofibroma	1	1%
		Hamartoma	1	1%
		Osteoma	1	1%
		Haemangioma	1	1%
		Squamous papilloma	1	1%
D	Malignant nasal mass	Squamous cell carcinoma	3	3%
		Adenoid cystic carcinoma	1	1%
		Esthesio neuroblastoma	1	1%

Table 2: Symptomatic Distribution in Various Nasal Pathology

s.no	Symptoms	Number of patients	percentage
1.		92	92%
2	Nasal obstruction	82	82%
3	Nasal discharge	17	17%
4	Nasal bleed	34	34%
5	Headache	35	35%
6	sneezing Hyposmia/anosmia Swelling	33	33%
7	over face	11	11%
8	Hypo nasality of voice Snoring	32	32%
9	Eye/ear symptoms	27	27%
10		11	11%

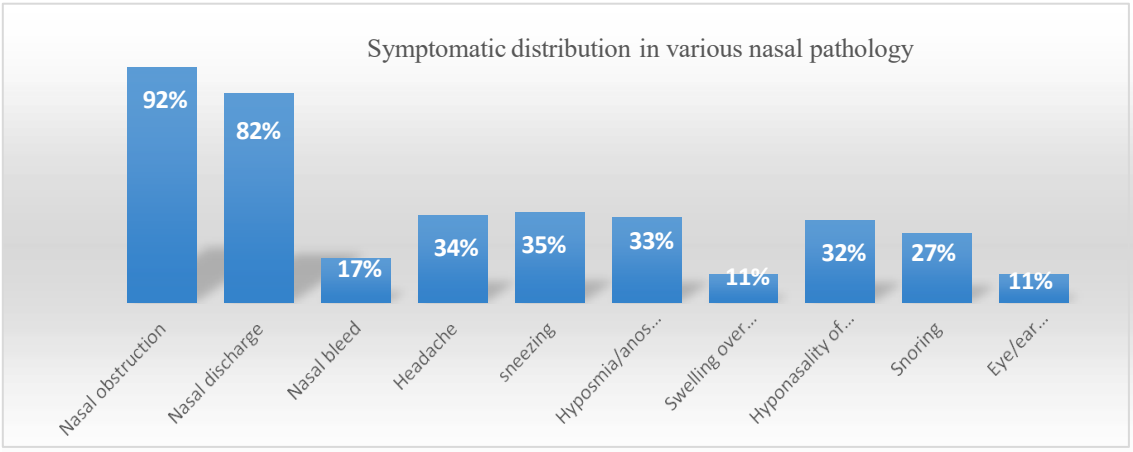

Figure 13: Symptomatic Distribution in Various Nasal Pathology

Symptomatic Distribution

Nasal obstruction was the leading presenting symptom, followed by nasal discharge, headache, smell abnormality and epistaxis. These symptoms occur due to mechanical blockage

DISCUSSION

In this study, sinonasal masses were most commonly observed in young and middle-aged adults, with a male predominance. These findings are similar to previous Indian studies and may be explained by increased exposure to environmental irritants, allergens, and occupational dust among males.

Symptomatic Distribution

Nasal obstruction was the leading presenting symptom, followed by nasal discharge, headache, smell abnormality and epistaxis. These symptoms occur due to mechanical blockage of the nasal cavity and sinus ostia by the mass. Epistaxis was more frequently associated with vascular tumors and malignancies, highlighting its importance as a warning sign.

Non-neoplastic inflammatory lesions constituted the majority of cases, with inflammatory nasal polyps being the most common. Chronic inflammation, allergy, and sinus ostial obstruction play a major role in their development. Fungal sinusitis was also common, possibly reflecting increasing diabetes prevalence and immunosuppression in the population.

Among benign tumors, inverted papilloma was the most frequent. Its locally aggressive nature and tendency for recurrence necessitate careful surgical clearance and long-term follow-up. Sinonasal malignancies, although less common, often presented in advanced stages, emphasizing the need for early biopsy in unilateral or bleeding nasal masses.

Functional endoscopic sinus surgery was the preferred treatment for most inflammatory and benign lesions, offering effective disease control with minimal morbidity.

CONCLUSION

Most sinonasal masses are inflammatory or benign in nature. A combination of nasal endoscopy, imaging, and histopathological examination ensures accurate diagnosis and appropriate management. Endoscopic surgery provides excellent outcomes in the majority of cases, while malignant lesions require multidisciplinary treatment.

Ethical Clearance

This study was approved by the Institutional Ethics Committee, Kurnool Medical College. IEC No: KMC/IEC/2023-24/ENT/274

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