

Clinico-Pathological Study And Endoscopic Management of Sino-Nasal Masses

Dr. Vipul Kumar Chaudhary,¹ *Dr. Manish Kumar Tailor,² Dr. Anant Kotia,³
Dr. Yogesh Aseri,⁴ Dr. P.C Verma,⁵

^{1,2}(Senior resident Department of Otorhinolaryngology and Head and Neck surgery, JLN Medical College and Hospital, Ajmer, India)

³(M.S. ENT from Department of Otorhinolaryngology and Head and Neck surgery, JLN Medical College and Hospital, Ajmer, India)

⁴(Assistant Professor Department of Otorhinolaryngology and Head and Neck surgery, JLN Medical College and Hospital, Ajmer, India)

⁵(Senior Professor and head of Department of Otorhinolaryngology and Head and Neck surgery, JLN Medical College and Hospital, Ajmer, India)

Corresponding Author: *Dr. Manish Kumar Tailor

Abstract:

Objective: To observe the incidence, clinical presentation and to perform comparative study of different sinonasal masses. The present prospective study "clinico-pathological study and endoscopic management of sino-nasal masses" was carried out in the Department of Otorhinolaryngology and Head and Neck Surgery, JLN Medical College and Hospital, Ajmer.

Materials and methods: Study included the 50 patients presented with sino-nasal masses and willing to participate in the study and completed minimum of 6 months follow up on out-patient basis. Study based on history, clinical, radiological, laboratory and histopathological examination.

Results and conclusion: Mean age of study group was 31.2 years. Overall male to female ratio was 2.13:1. M: F. Highest frequency was noted in second decade. 50 patients presented with the sino-naasal masses, among them 35 (70%) cases were non-neoplastic masses i.e. inflammatory or AC polyp (31.42%) and allergic or ethmoid polyps (65.7%). 24 % were benign neoplastic lesions which included haemangioma (8.33%), inverted papilloma (58.33%), mucocele (25%) and angiofibroma (8.33%). Malignant neoplasm comprises 6 % cases of our study; all of them were squamous cell carcinoma, Nasal obstruction and nasal discharge which was present in over 90% cases. Nasal mass was present 60 % cases of non-neoplastic lesions, 41.7 % cases of benign lesions and 33 % cases of malignant. In our study, endoscopic sinus surgery was performed in 36 patients. All the patients of non-neoplastic lesions were underwent FESS except one case of recurrent antrochoanal polyp for which Caldwell operation was done. Single case of angiofibroma was operated through transpalatal excision and for malignant lesions; partial maxillectomy was done in one case and total maxillectomy in 2 cases.

Keywords: Sino nasal mass, Polyp, Nasal obstruction, Squamous cell carcinoma, FESS

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I. Introduction

Sino-nasal masses are very common clinical entity encountered by otorhinolaryngologist in daily practice. The incidence is between 1 and 4 % of the population.¹ Neoplasm's of the sinuses and nasal cavity account for 0.2–0.8 % of all carcinomas.² Sino-nasal masses can be non-neoplastic or inflammatory, benign neoplastic or malignant in nature. Nasal polyps of allergic origin are the most common sino-nasal masses. 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.³ Sino-nasal masses ranging from-neoplastic lesions to malignant sinonasal tumor may mimic a simple nasal mass, so it is difficult to determine the pathology clinically. A detailed history, clinical examination, diagnostic nasal endoscopy along with CT scan and or MRI is required in reaching the correct diagnosis. A careful histopathological examination (HPE) is necessary to decide the nature of a specific lesion. Treatment of sino-nasal masses depends upon the nature of the lesion and its extent. This work was planned to study the demographic profile of sino-nasal masses, the clinical and radiological findings of sino-nasal masses, histological examination to confirm the nature of masses, the endoscopic management of sino-nasal masses

II. Materials And Methods

The present prospective study “clinico-pathological study and endoscopic management of sino-nasal masses” was carried out in the Department of Otorhinolaryngology and Head and Neck Surgery, JLN Medical College and Hospital, Ajmer. Study included the 50 patients presented with sino-nasal masses and willing to participate in the study and completed minimum of 6 months follow up on out-patient basis.

A detailed history was taken including presenting complaints with duration and nature of symptoms, past history of similar illness or any other illness, any medical or surgical treatment, history of asthma or any drug allergy. Family and personal history was recorded to know any allergic predisposition, contributory or precipitating factor for the pathology regarding occupation, addiction or environment at home or working place. Detailed clinical examination of ear, nose and throat was done with special reference to the nose. Routine investigations were done in every case along with swab from middle meatus for culture, X-ray PNS water’s view. Each patient underwent a systemic diagnostic nasal endoscopy and non-contrast C.T. Scan of nose and paranasal sinuses. Contrast enhanced CT scan and MRI was done in selected patients. Patients with acute exacerbations were treated with course of antibiotic, antihistaminic and local decongestants.

After preanaesthetic check up, patients were taken up for the surgery. All the patients were followed postoperatively every week for the first month and then every month for minimum of 6 months. Nasal endoscopy was performed at every follow up and findings were noted.

Results were interpreted according to relief to the patients as well as endoscopic findings on follow up. Results were categorised into 3 categories according to following criteria.

Total relief (complete subjective as well objective relief):

- Well healed epithelised ethmoid cavity
- No recurrence upto last follow up
- Normal mucociliary clearance
- No symptoms

Partial relief (incomplete subjective and objective relief)

- Hypertrophied mucosa even after 3 months follow up, which resolves with revision medical /surgical treatment
- Partial nasal obstruction or any other minor symptoms off and on that is well responding to the medical treatment
- Absence of either subjective or objective relief

No relief (no subjective and objective relief)

- Hypertrophied mucosa and thick mucopurulent rhinorrhoea even after 6 months regular follow up and treatment
- Poor patient compliance
- Disease recurrence even after revision surgeries with regular follow ups
- Absence of both subjective as well as objective relief

III. Results

Table: 1 Histopathological finding of nasal masses

N=50	
Non-neoplastic mass (n=35)	
Allergic polyp (ethmoidal polyp)	23 (65.71%)
Inflammatory polyp (AC polyp)	11 (31.42%)
Rhinosporodiosis	1 (2.85%)
Benign neoplastic mass (n=12)	
Haemangioma	1 (8.33%)
Inverted papilloma	7 (58.33%)
Mucocele	3 (25%)
Angiofibroma	1 (8.33%)
Malignant neoplastic mass (n=3)	
Squamous cell carcinoma	3 (100%)

Table: 2 Age wise distribution of sino-nasal masses

Age (years)	Nonneoplastic (n=35)	Neoplastic (n=15)		Total (percentage)
		Benign (n=12)	Malignant (n=3)	

<10	2 (5.71%)	-	-	2 (4%)
11-20	10 (28.57%)	1 (8.33%)	-	11 (22%)
21-30	8 (22.85%)	1 (8.33%)	-	9 (18%)
31-40	10 (30.30%)	3 (25%)	-	13 (26%)
41-50	3 (8.57%)	5 (41.66%)	-	8 (16%)
51-60	1 (2.85%)	1 (8.33%)	1 (33.33%)	3 (6%)
>60	1 (2.85%)	1 (8.33%)	2 (66.67%)	4 (8%)

Table: 3 Clinical profile of sino-nasal masses

Symptoms and signs	Non neoplastic	Benign neoplastic	Malignant
Nasal obstruction	30 (85.71%)	10 (83.33%)	2 (66.67%)
Nasal discharge	29 (82.85%)	8 (66.67%)	1 (33.33%)
Nasal mass	21 (60%)	3 (25%)	1 (33.33%)
Bleeding nose	2 (5.71%)	3 (25%)	3 (100%)
Headache	10 (28.57%)	-	1 (33.33%)
Sneezing	21 (60%)	-	-
Pain	1 (2.85%)	1 (8.33%)	1 (33.33%)
Sinus tenderness	15 (42.85%)	1 (8.33%)	1 (33.33%)
Swelling face	-	-	2 (66.67%)
Loosening of teeth	-	-	1 (33.33%)
Bulge palate	3 (8.55%)	-	2 (66.67%)

Table: 4 Surgeries performed for sino nasal masses

Surgery	Non neoplastic	Benign neoplastic	Malignant
Endoscopic sinus surgery	34 (97.14 %)	2 (16.66 %)	-
Caldwell luc operation	1 (2.85 %)	1 (8.33%)	-
Transpalatal excision	-	1 (8.33%)	-
Sublabial approach	-	1 (8.33%)	--
Partial maxillectomy	-	7 (58.33%)	1 (33.33 %)
Total maxillectomy	-	-	2 (66.66 %)

Table: 5 Results of endoscopic surgery

Results	No of cases	percentage
Total relief	30	83.33 %
Partial relief	4	11.11 %
No relief	2	5.56 %

IV. Discussion and conclusions:

Our study comprises of the 50 patients presented with the sino-naasal masses, among them 35 (70%) cases were non-neoplastic masses i.e. inflammatory or AC polyp (31.42%) and allergic or ethmoid polyps (65.7%). 24% were benign neoplastic lesions which included haemangioma (8.33%), inverted papilloma (58.33%), mucocoele (25%) and angiofibroma (8.33%). Malignant neoplasm comprises 6 % cases of our study; all of them were squamous cell carcinoma. Diamanterpoulos *et al.*⁴ reported 90.5 % cases were non-neoplastic. In non-neoplastic, 77.6% had allergic, inflammatory and infective origin. Lathi *et al.*⁵ reported 71.4 % non-neoplastic and 28.6 % neoplastic cases in their study of 112 patients with sino-nasal masses.

Non-neoplastic lesions were common in age group of 11-40 years while benign neoplastic masses were common in 31-50 years and malignant masses were seen after 50 years. Mean age of study group was 31.2 years. Overall male to female ratio was 2.13:1. M: F ratio was 2.5:1 for non-neoplastic masses, 1.4:1 for benign neoplastic masses and 2:1 for malignant lesions. Lathi *et al.*⁵ in their study reported M:F ratio of 1.5:1.

Most common presenting symptoms were nasal obstruction and nasal discharge which was present in over 90% cases. Nasal mass was present 60 % cases of non-neoplastic lesions, 41.7 % cases of benign lesions and 33 % cases of malignant lesions. Other major clinical finding in non-neoplastic lesions was sinus tenderness and headache seen in 42.85 % and 28.57 % cases respectively. In malignant lesions, all three patients had bleeding nose, 66.67 % patients had bulge in palate and loosening of teeth as well. These findings were similar to studies by lathi *et al.*⁵

The most important part of clinical decision making was diagnostic nasal endoscopy. In our study, 52 % patients had unilateral nasal mass and 48 % patients had bilateral nasal mass in diagnostic nasal endoscopy. Osteomeatal complex block was seen in 74 % cases, deviated nasal septum in 34 % cases, and turbinate hypertrophy in 18 % cases. Larine HL⁶ observed osteomeatal complex block in 66.16% cases.

Plain radiographs were once the mainstay of diagnosis of the sinus disease and now have been replaced by high resolution computerized tomography for the evaluation of the sinus diseases. Plain radiographs do not allow adequate evaluation of the osteomeatal complex or of the sphenoid and ethmoid sinuses because of overlapping anatomic structures. CT scan has been very useful and informative as an aid in diagnosis and tumor staging, and for appropriate management. In CT scan, unilateral nasal mass was present in 44 % cases, bilateral

nasal masses in 48 % cases. Nasopharyngeal mass or nasopharyngeal extension of growth was seen in 28 % cases. Several studies have provided evidence that CT and symptoms do not necessarily correlate. In a study by Bolger *et al.*⁷ 42 % of asymptomatic patients had mucosal changes on CT scan. Flinn *et al.*⁸ in their study found that 27 % had mucosal changes suggestive of chronic rhinosinusitis in a prospective study of patients without chronic rhinosinusitis.

In our study, endoscopic sinus surgery was performed in 36 patients. All the patients of non-neoplastic lesions were underwent FESS except one case of recurrent antrochoanal polyp for which Caldwell operation was done. Single case of angiofibroma was operated through transpalatal excision and for malignant lesions; partial maxillectomy was done in one case and total maxillectomy in 2 cases.

In present study, 30 (83.33%) patients out of 36 patients who underwent endoscopic sinus surgery had total relief, while 3 (8.32%) patients could achieve partial relief and 2 (5.56%) patients had no relief. Stammberger⁹ observed good results in 85% cases, fair to moderate results in 10.2 % while no relief in 4.6% cases. In study by Levine HL⁶, 82% patients got subjective results, 4.5 % patients underwent revision surgery and 1.4% patients had major complication.

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