Journal of Advanced Medical and Dental Sciences Research

@Society of Scientific Research and Studies

Journal home page: www.jamdsr.com doi: 10.21276/jamdsr Index Copernicus value = 82.06

(e) ISSN Online: 2321-9599; (p) ISSN Print: 2348-6805

Original Research

A Clinico-Pathological Profile of Sinonasal and Nasopharynx Masses

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ABSTRACT:

Introduction: A variety of non-neoplastic and neoplastic conditions involving the nasal cavity and nasopharynx are commonly encountered in clinical practice. The presence of a mass in the nose and paranasal sinuses may seem to be a simple problem; however it raises many questions about the differential diagnosis. **Aim**: The objectives of the study were to identify various pathological conditions that present with sinus or nasal mass, to understand their varied clinical behavior, to know the distribution of various lesions among the different age and sex groups, and to study the management of sinonasal masses and its outcome on follow-up. **Methods**: A prospective study was carried out which included 50 patients of any age and sex presenting with nasal symptoms. Complete history was taken and full clinical examination was carried out. Clinical features with histologically corelated. **Results**: Majority of the patients with sinonasal masses were in the age group 41–50 years with male predominance. Nasal obstruction was the most common presentation. Most common benign lesion was nasal polyp and most common malignant lesion was squamous cell carcinoma. The clinical diagnosis in most of the cases (92%) cases correlates with the histological diagnosis in the present study. **Conclusion**: Sinonasal neoplasms have wide range of possibilities, early diagnosis with prompt treatment is necessary for these patients which will decrease the burden of morbidity and mortality. The clinicopathologic features are necessary for any neoplastic lesion in nasal cavity for early recognition and treatment.

Key words: Sinonasal mass, Nasopharynx, benign, malignant

Received: 22 October, 2019 Revised: 20 December, 2019 Accepted: 21 December, 2019

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This article may be cited as: Bhargava R. A Clinico-Pathological Profile of Sinonasal and Nasopharynx Masses. J Adv Med Dent Scie Res 2020;8(1):218-221.

INTRODUCTION:

The nasal cavity and paranasal sinuses are collectively referred to as the sinonasal tract, which is anatomically and embryologically distinct from the nasopharynx [1]. The mucosa of nasal cavity and paranasal sinuses is referred to as the Schneiderian membrane [2]. Sinonasal mass is a common finding and is found in almost all age groups of people. The presence of a mass in the nose and paranasal sinuses may seem to be a simple problem; however it raises many questions about the differential diagnosis.

Sinonasal tract and nasopharyngeal lesions can be non-neoplastic (polyps, bacterial and fungal infections) and neoplastic (benign and malignant). The majority of sinonasal lesions are inflammatory with neoplasms comprising approximately 3% of all head and neck tumours.[3] Although the sinonasal tract and nasopharynx have identical appearing ciliated respiratory epithelium, the epithelium of the sinonasal tract is ectodermally derived, while that of the nasopharynx is endodermally derived. These structures may give rise to identical neoplasms that differ only in their location and resulting clinical symptomatology.[4]

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. lassically they are caused by a combination of allergy and infection[5]. Benign neoplasia of the nose and paranasal sinuses is relatively not uncommon[6]. Cancers of the nose and paranasal sinuses account for less than 1% of all malignancies and about 3% of all head and neck cancers[7].

The goal of clinicopathological study of sinonasal mass has evolved from removing all pathological

masses to relieve the obstruction for restoring maximum possible function. The clinicopathological study also gives the valuable information about the possibility of changing a benign lesion into a malignant one.

Therfeore we aimed a study to evaluate the clinico-pathological profile of sinonasal masses (SNM) and nasopharynx obtained in our institute during our study period.

MATERIAL AND METHODS:

This prospective study was conducted in the Department of Pathology, MSY Medical College, Meerut, Uttar Pradesh, with masses arising from sinonasal tract and nasopharynx and undergoing either incisional biopsy or surgical excision. A total of 50 cases of surgically excised specimens of the masses arising from sinonasal tract and nasopharynx were obtained. Any mass invading the region from adjoining areas, masses that have recurred, nonavailability of proper history and imaging study, and patients who have received chemotherapy and/or radiotherapy in the past due to lesion in this zone were excluded from the sample.

Ethics Committee approval and written informed consent from patients were taken before the study was conducted. All the patient particulars were noted and grossing was performed followed by proper fixation and processing. Sections were stained by Hematoxylin and eosin (H&E) for histopathological study and accordingly classified into different categories provisionally.

Various histological findings were correlated with the clinical parameters. Some sections of non-neoplastic masses were further stained by special stain (PAS) for the demonstration of fungal organisms to arrive to final diagnosis. All the data were entered into the SPSS version 19.0 computer soft ware for analysis and results presented in tables and figures.

RESULTS:

This study included 50 cases of sinonasal masses. Various factors regarding clinical presentation, findings of various investigations and histopathological characteristics were analyzed.

In the present study the most affected age group in our study was 41–50 years with 16 cases (32%), and the least number of cases was seen in 0–10 years with 2 cases (4 %). The youngest patient was 7-year-old male child and the oldest patient was 65-year-old male. Males (66%) were more commonly affected than females (34%). (table 1)

Benign lesions among both sexes were found to be common in the age group 10-20 yrs, whereas malignant lesions mostly found in the age group 41-50 years. No significant association was observed with age.

TABLE 1: AGE AND GENDER DISTRIBUTION

AGE GROUP	MALE	FEMALE	TOTAL
0-10	1	1	2
11-20	6	2	8
21-30	7	2	9
31-40	4	3	7
41-50	10	6	16
51-60	3	2	5
61-70	2	1	3
TOTAL	33	17	50

The duration of symptom at presentation ranged between 4-15 months, with a mean of 9.5 months. Nasal obstruction was the most common presentation (42 %), followed by Rhinorrhea (22 %), and then a nasal mass (14 %). Ophthalmic symptoms and Recurrence of nasal mass (2 % each) were the least common mode of presentation. (Table 2). Sinonasal masses were found to be bilateral in 14 (28%), left sided in 26 (52%) and right sided in 24 (48 %) patients.

TABLE 2 : CLINICAL PRESENTATION OF PATIENTS

CLINICAL PRESENTATION	FREQUENCY
Nasal obstruction	21 (42%)
Rhinorrhea	11 (22%)
Nasal mass	7 (14%)
Asthma	5 (10%)
Epistaxsis	2 (4%)
Headache	2 (4%)
Ophthalmic symptoms	1 (2%)
Recurrence of nasal mass	1 (2%)

FIGURE 1: SPECTRUM OF BENIGN LESIONS

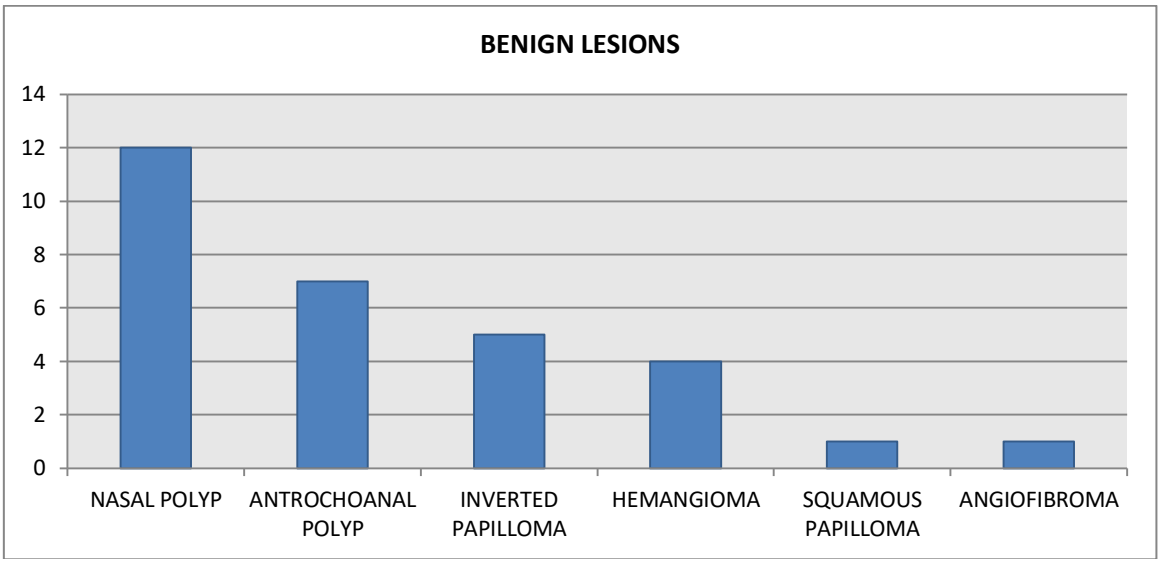
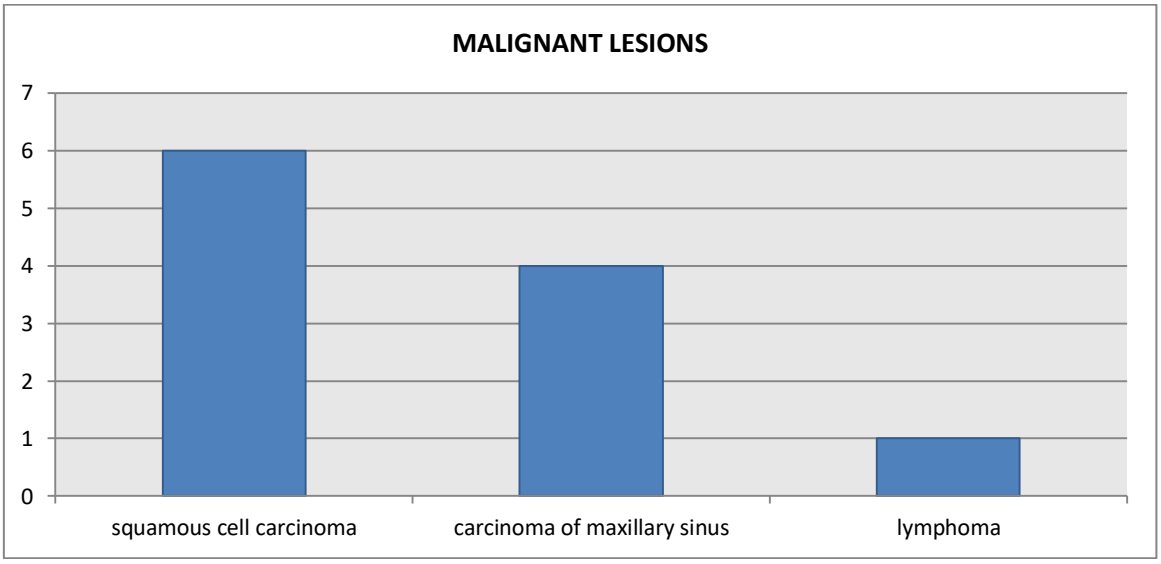


FIGURE 1: SPECTRUM OF MALIGNANT LESIONS



In our study, it was observed that benign lesions were more common than the malignant lesions accounting for 29 cases (58%) and 11 cases (22%) of all cases respectively.

Out of 29 cases benign lesions, nasal polyp was the most common (41.3%), followed by antrochoanal polyp (20.6%), inverted papilloma (17.2%), hemangioma (13.7%), squamous papilloma (3.4%) and angiofibroma (3.4%). (Figure 1). Histopathological diagnosis of these sinonasal masses showed simple inflammatory nasal polyp, inverted papilloma, allergic nasal polyp, fibroepithelia polyp and capillary hemangioma.

Out of 11 cases of malignant lesions, squamous cell carcinoma of nasopharynx was most common (54%) cases followed by carcinoma of maxillary sinus (36.3%) cases and least was lymphoma (9%). The clinical diagnosis in most of the cases (92%) cases correlates with the histological diagnosis in the present study. (figure 2)

DISCUSSION:

A variety of non-neoplastic and neoplastic conditions involve the nasal cavity, paranasal sinuses, and nasopharynx, and these are very common lesions encountered in clinical practice. Macroscopically simple nasal polyps are pale bags of non-specific eosinophilic, oedematous, hyperplastic, sinonasal masses, they are most often bilateral, and indeed any unilateral lesion should be considered as a neoplasia, benign or malignant.

In the present study, sinonasal mass was found most commonly in the age group of 41–50 years. This is in concordance with a study by Aminu Bakari et al[8] and Agarwal P et al 9. Males were more commonly affected than females. In similarity Chan SH et al[10] also showed that males (68.29%) were outnumbered the females (31.71%). This finding was similar as reported in the study conducted by Gras Cabrerizo JR et al[11] in which males were 75% females were 25%.

In our study, nasal obstruction was the most common presentation (42 %), followed by Rhinorrhea (22 %), and then a nasal mass (14 %). Ophthalmic symptoms and Recurrence of nasal mass (2 % each) were the least common mode of presentation. Similar observation was done by Narayan Swamy et al.[12] and found that nasal obstruction (76.66 %) was the most common presentation, and epistaxis (53 %) and nasal discharge (50 %) were the commonest symptoms. The main presenting symptoms as per Bakari et al.[8] were nasal blockage (97.4 %), rhinorrhea (94.7 %), allergic symptoms (52.6 %), and anosmia (34.6 %). S.S. Bist et al.[13] stated that the most common presenting symptoms were nasal obstruction (87.27 %), nasal discharge (69.09 %), and headache (60.9 %).

Nasal polyps were the most common encountered lesions in our study. Our findings were in accordance with N. Khan et al.[14] , S.S. Bist et al.[13] (60 %) and Jyothi A Raj et al[15].

In the present study, Squamous cell carcinoma of nasopharynx was most common (54%) cases followed by carcinoma of maxillary sinus (36.3%) cases and least was lymphoma (9%). Gras Cabrerizo JR et al [11] performed a retrospective study of 72 carcinomas of the nasal cavity and paranasal sinuses where squamous cell carcinoma was the most frequent histological type in both localizations.

Ye et al. [19] studied 41 cases of nasopharyngeal and 13 cases of nasal malignant lymphoma, histopathologically and immunohistochemically. All cases were NHL, and they concluded that, as the large cell type of lymphoma was predominant, the differential diagnosis from undifferentiated carcinoma is important and is facilitated by the use of immunostaining methods. Koushik Dewan et al[20] reported that among the malignant lesions squamous cell carcinoma (33.2%) was found to be the most common lesion followed by 19.5% of adenoid cystic carcinoma in their study.

CONCLUSION:

Therefore as Sinonasal neoplasms have wide range of possibilities, early diagnosis with prompt treatment is necessary for these patients which will decrease the burden of morbidity and mortality. The clinicopathologic features are necessary for any neoplastic lesion in nasal cavity for early recognition and treatment.

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