HISTOPATHOLOGICAL PATTERNS OF MASSES IN THE NASAL CAVITY, PARANASAL SINUSES AND NASOPHARYNX

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ABSTRACT

BACKGROUND
Masses in the nasal cavity, paranasal sinuses and nasopharynx are common and can be classified into non-neoplastic or neoplastic lesions.

OBJECTIVES
To study the histopathological patterns of masses in the nasal cavity, paranasal sinuses and nasopharynx in Manipur, India.

SETTINGS AND DESIGN
This prospective study from the period of April 2013 to September 2015 was conducted in the Department of Pathology, Regional Institute of Medical Sciences, Imphal, Manipur.

MATERIAL AND METHODS
All cases of specimens of masses in the nasal cavity, paranasal sinuses and nasopharynx from the period of April 2013 to September 2015 were included in the study.

RESULTS
A total of 102 cases were studied during the study period. Age ranged from 6 years to 80 years with slight male preponderance. Non-neoplastic lesions comprised of 59 cases (57.84%) and neoplastic lesions was 43 cases (42.16%). Inflammatory polyp comprised 46 cases (45%) and was the predominant lesion in the non-neoplastic group. Among the neoplastic lesions, malignant lesions (65.12%) predominated over benign lesions (34.88%). Undifferentiated carcinoma was the commonest malignant tumour and sinonasal papilloma was the commonest benign tumour.

CONCLUSION
Inflammatory polyps are the most common histological pattern with males affected more than females.

KEYWORDS
Inflammatory polyp, nasopharynx, undifferentiated carcinoma.

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INTRODUCTION: A variety of non-neoplastic and neoplastic lesions in the nasal cavity, paranasal sinuses and nasopharynx are commonly encountered in clinical practice.[1]

Polypoidal mass in the nose is a very common lesion encountered in clinical practice.[2] and it can be an inflammatory polyp, granuloma, tumour, either benign or malignat.[3]

Nasal polyps are the most common nasal masses affecting up to four percent of the population.[4] and are defined as prolapsed lining of the nasal sinuses.[5] that extends into nasal cavity, paranasal sinuses and nasopharynx.[6]

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Nasal polyps most frequently occur in middle-aged males.[7] Malignant tumours in the nasal cavity and paranasal sinuses account for less than 1% of all carcinomas and for about 3% of the neoplasms of the head and neck regions.[8]

Primary nasal malignancies consist of 0.2%-0.8% of all the malignant tumours and 3.6% of the malignant upper airway tumours.[9]

The objective of this study was to study the histopathological patterns of masses in the nasal cavity, paranasal sinuses and nasopharynx in Manipur, India.

MATERIALS AND METHODS: This was a prospective study from April 2013 to September 2015. All the specimens of masses of nasal cavity, paranasal sinuses and nasopharynx received at histopathology section of pathology department, Regional Institute of Medical Sciences (RIMS) Hospital were included in the study. Clinical data (age, sex and site) were gathered from the information provided on the histopathology request forms. All the specimens were fixed in 10% formal–saline, then processed into paraffin

embedded sections and stained with hematoxylin and eosin. Ethical clearance from the institutional ethical committee was obtained.

RESULTS: A total of 102 specimens of masses of nasal cavity, paranasal sinuses and nasopharynx were received during the study period. The number of cases were slightly higher in males with 58 cases (56.86%) compared to females with 44 cases (43.14%). Distribution of cases among various age group is shown in [Table I]. Commonest age group was seen in the 51-60 year group. Non-neoplastic masses were common in the age group 51-60 years with 20 cases. Among the neoplastic group, common age group was seen in the 51-60 year group. Benign neoplastic masses were common in the age range of 11-30 years and 41-60 years with 15 cases while malignant neoplastic masses were more common in the age group of 61-70 years with 28 cases. Males were more affected than females among the non-neoplastic lesions. Neoplastic lesions were common in the females. Inflammatory polyp was the commonest non-neoplastic lesion with 46 cases (45%) followed by allergic polyp with 12 cases (11.76%). One case of tuberculous granulomatous lesion was encountered in a 48 years old male patient. Sinonasal papilloma was the commonest benign tumour with 10 cases (9.8%) of which inverted type was seen in 2 cases each. A single case of hemangiopericytoma like tumour was seen. Undifferentiated carcinoma was the most common lesion among the malignant group with 22 cases (78.58%) followed by squamous cell carcinoma with 4 cases (14.28%). Other malignant tumours were olfactory neuroblastoma and Non-Hodgkin's lymphoma [Table II].

Age (years)	Non-neoplastic Mass	Neoplastic Mass		Total
		Benign	Malignant	
<10	2	1	0	3
11-20	7	3	0	10
21-30	6	3	2	11
31-40	4	0	4	8
41-50	14	3	5	22
51-60	20	3	6	29
61-70	5	1	7	13
71-80	1	1	4	6
Total	59	15	28	102

Table 1: Distribution of nasal masses according to age

Inflammatory polyp	46	45%
Allergic polyp	12	11.76%
Tuberculous granulomatous lesion	1	0.98%
Sinonasal papilloma	10	9.8%
Hemangioma	2	1.96%
Angiofibroma	2	1.96%
Hemangiopericytoma like tumour	1	0.98%
Undifferentiated carcinoma	22	21.56%
Squamous cell carcinoma	4	3.92%
Olfactory neuroblastoma	1	0.98%
Non-Hodgkin's Lymphoma	1	0.98%

Table 2: Histopathological findings of nasal masses

DISCUSSION: In the present study of 102 cases, 57.84% were non-neoplastic and 42.16% neoplastic, which is in correlation with the study by Lathi et al.[10] and Shulba et al.[11] The former found 72% non–neoplastic and 28% neoplastic cases, while the latter found 91 non-neoplastic and 9 neoplastic lesions in a study conducted on 100 patients.

In this study, non-neoplastic lesions constituted 57.84% of cases with inflammatory polyp being the predominant type. There was male preponderance. Similar observations were made by Dasgupta et al.,[12] Kalpana et al.,[13] Mysorekar et al.,[14] Zafar et al.,[15] Garg et al.[16] and Fazel et al.[17] while a Nigerian study Bakari et al.[18] shows a female predominance.

Depending on the predominance of eosinophils, inflammatory polyps were divided into non-allergic and allergic polyp. Shulba et al[11] found 77% non-allergic and 23% allergic cases which is in correlation with the present study which had 77.96% non-allergic and 20.34% allergic polyp.

In the 100 cases studied, 43 cases of neoplastic lesions were found out of which 65.12% were malignant and 34.88% benign. In the study by Shulba et al.[11] out of the 9 neoplastic polyps, 7 were benign and 2 were malignant.

Among the benign tumours, epithelial tumours were less common when compared to non-epithelial tumours and in epithelial tumours inverted papilloma was the commonest. Narayana Swami et al.[3] also reported 13% incidence of inverted papilloma amongst all benign tumours.

Amongst non-epithelial tumours, 13.34% each of hemangioma and angiofibroma were seen whereas other study showed higher incidence.[19]

Among the malignant neoplasms, undifferentiated carcinoma was common and seen in 78.58% of the cases followed by squamous all carcinoma. Lathi A et al.[10] and Svane Knudson et al.[20] have reported squamous cell carcinoma to be the most commonly encountered malignancy in India and Denmark respectively.

To conclude, inflammatory polyps are the most common histological pattern with males affected more than females.

CONCLUSION: Varieties of non-neoplastic and neoplastic conditions involve nasal cavity, paranasal sinuses and nasopharynx. Histopathological examination is simple, reliable and cost effective diagnostic procedure for the detection of various lesions of nasal cavity, nasopharynx and paranasal sinuses. Inflammatory polyp is the most common lesion of nasal cavity, nasopharynx and paranasal sinuses in different age group.

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