

Histopathological Study of Different Nasal Lesions: Study of 2 Years

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Abstract

Original Research Article

Nasal lesions are mostly polypoid. It is quite difficult clinically to comment about the nature of the nasal lesion-whether neoplastic or non-neoplastic. So, biopsy examination is very much essential for both ENT surgeons as well as pathologists. Aim of this study is to know the incidence of different nasal lesions. Also, to find out the frequency of inflammatory, benign and malignant conditions of nasal lesions and to compare various histopathological lesions of nasal mass in relation to age, sex and site distribution. This retrospective study was undertaken in histopathology laboratory of Department of Pathology, N. R.S Medical College and hospital, Kolkata for period of 2 years from October 2013 to September 2015. A histopathological study of total 125 cases of nasal lesions was done. Tissue were processed and studied accordingly. Out of 125 cases, 69 were males and 56 were females. Male to Female ratio was 1.23:1. Out of these, 72 (57.60%) were non neoplastic and 53 (42.40%) were of neoplastic origin. Out of 53 (42.40%) cases of neoplastic lesions, 32(60.38%) were benign and 21 (39.62%) were malignant. Non neoplastic lesions were composed of the majority of cases followed by neoplastic lesions. Among the different lesions, 80(64.00%) cases were arising from the nasal cavities, 20 (16.00%) from the paranasal sinuses, 15(12.00%) from external nose and 10 (08.00%) from nasal septum. Maximum numbers of nasal lesions were detected in age group of 11-20 years with 32 (40.00%) cases.

Keywords: Histopathology, Nasal mass, nasal polyps, Nasal cavity.

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INTRODUCTION

The nose is composed of nasal cavity, nasopharynx and paranasal sinuses [1]. Its main functions are filtering, humidifying and adjusting the temperature of inspired air [2]. As the nose occupies a prominent anatomical position on the face, early diagnosis and treatment of any scarring or ulcerative lesion is imperative [3]. Polypoidal mass in the nose is a very common lesion encountered every day in clinical practices. It may be due to the most frequently occurring simple nasal polyp or polypoidal lesions due to a variety of other pathologic entity ranging from infective diseases to polypoid neoplasm including malignant ones[4]. Tumors of nose are usually uncommon. Malignant tumors account for 0.2% to 0.8% of total malignancies and only 3% of all malignant tumors of upper aerodigestive tract [5]. The nose is fertile fields for study of neoplastic disease [6]. Any type of tumor can occur in this area so it is essential to know the pathology of tumors in general. The presenting features, symptomatology and advanced

imaging technique help to reach a presumptive diagnosis but histopathological examination remains the main stay of final definitive diagnosis.

MATERIALS AND METHODS

The present study was undertaken in histopathology laboratory of Department of Pathology, N.R.S. Medical college and hospital, Kolkata. All the patients with nasal lesions, attending N.R.S Hospital had been studied from October 2013 to September 2015. Most of the specimens for histopathological study in our institute came from ENT department. A histopathological study of total 125 cases of nasal lesions was done. Tissue were processed and studied. For histopathological examination, the specimens were received in 10% formalin. The received specimens have been fixed in 10% formalin and kept overnight. After passing the tissue dehydration in graded alcohol for 6 hours each in three changes, clearing is done with two changes of xylene for hour each. Followed by this, impregnation and embedding in

paraffin were done, blocks were prepared and 5µ sections were cut. Then, the sections were stained with haematoxylin and eosin, dried and mounted in DPX and then microscopy was done. Special stain like Periodic Acid Schiff (P.A.S) was used whenever required. The relevant clinical details and laboratory investigations were collected from the hospital case sheet.

RESULTS

All the patients of nasal lesions, attending N.R.S Hospital had been studied in the duration of October 2013 to September 2015. We found the following results.

A male predominance was seen in the present study with 69 (55.20%) being males and 56 (44.80%) being females. Male to female ratio was 1.23:1 (Table 1).

In the present study, 80(64.00%) cases were arising from the nasal cavities, 20 (16.00%) from the paranasal sinuses, 15(12.00%) from external nose and 10 (08.00%) from nasal septum.

The present study was included total 125 cases of nasal lesions. Out of these, 72 (57.60%) were non neoplastic and 53 (42.40%) were of neoplastic origin. Out of 53 (42.40%) cases of neoplastic lesions, 32(60.37%) were benign and 21 (39.62%) were

malignant nasal lesions. Non neoplastic lesions were composed of the majority of cases followed by benign neoplastic lesions.

Among the non neoplastic lesions (72cases, i.e 57.6%), inflammatory polyp (47 cases, i.e 65.27%) was the predominant followed by Rhinosporidiosis (12 cases i.e 16.66%).

Out of total 32 cases of benign neoplastic lesions, we got 12(37.50%) inverted papillomas, 4(12.50%) hemangiomas, 2 (6.25%) angiofibromas, 4 (12.50%) ossifying fibromas, 3 (9.37%) schwannomas, 3 (9.37%) fibrous dysplasias, 1(3.12%) trichofolliculoma, 1 (3.12%) minor salivary gland tumour, 1(3.12%) follicular ameloblastoma and 1 (3.12%) xanthoma (Table 2).

In total 21 cases of malignant neoplastic lesions, we found, 4 (10.04%) neuroblastomas(N.B), 3 (14.28%) basal cell carcinomas (B.C.C), 3 (14.28%) squamous cell carcinomas (S.C.C), 2(9.52%) melanomas, 2(9.52%) nasopharyngeal carcinomas, 2 (9.52%) undifferentiated sinonasal carcinomas, 2(9.52%) adenocarcinomas, 2(9.52%) mucoepidermoid carcinomas (M.E.CA) and 1(4.76%) case of adenoid cystic carcinoma (A.C.C) (Table 3). Maximum numbers of nasal lesions were detected in age group of 11-20 years with 32 (40.00%) cases (Table 4).

Table-1: Comparison of gender wise distribution and male to female ratio of present study with other studies

Study	Male	Female	Total number of cases	Male to female ratio
Parmar J. Nisha <i>et al.</i> [11]	59	41	100	1.44:1
Vijaya v mysorekar <i>et al.</i> [9]	85	60	145	1.42:1
T. Dinesh singh <i>et al.</i> [10]	20	15	35	1.33:1
S. R. Dafale <i>et al.</i> [12]	45	25	70	1.8:1
Harshad's study[13]	35	17	52	2.06:1
Present study	69	56	125	1.23:1

Table-2: Following table shows comparison of neoplastic (benign) lesions among the different studies

Studies done by	Inverted papilloma	Hemangioma	Angio-fibroma	Ossifying fibroma	Schwannoma	Fibrous dysplasia	Xanthoma	Minor salivary glandular tumour	Ameloblastoma	Trichofolliculoma
K. Narayan & B. Chandre study[16]	04 (13.33%),	03 (10.00%)	08 (26.66%)	02 (6.66%)	00	00	00	00	00	00
Hemant chopra <i>et al.</i> [14]	04 (36.36%)	03 (27.27%)	03 (27.27%)	00 (00.00%)	00	00	00	00	00	00
Parajuli & Tuladar's study[21]	06 (31.58%)	05 (26.32%)	03 (15.79%)	03 (15.79%)	00	00	00	00	00	00
Nepal A. <i>et al.</i> [17]	09 (23.68%)	11 (28.95%)	01 (2.63%)	01 (2.63%)	00	00	00	00	00	00
Karansinh <i>et al.</i> [18]	12 (19.35%)	10 (16.13%)	33 (53.23%)	00 (00.00%)	00	00	00	00	00	00
Seema <i>et al.</i> [16]	05 (17.86%)	14 (50.00%)	05 (17.86%)	00 (00.00%)	00	00	00	00	00	00
Present study	12(37.5%)	04(12.5%)	02(6.25%)	04(12.5%)	03(9.37%)	03(9.37%)	01(3.12%)	01(3.12%)	01(3.12%)	01(3.12%)

Table-3: Following table shows comparison of type of neoplastic (malignant) lesions in present study with other studies

Study	Total number of cases	NB	SCC	BCC	Melanoma	Undifferentiated nasopharyngeal CA	Undifferentiated sinonasal CA	Adeno CA	MECA	ACC
Vijaya v mysorekar <i>et al.</i> [9]	22	00	09(40.90)	00	00	00	00	00	00	00
Dafale SR <i>et al.</i> [12]	02	00	02(100)	00	00	00	00	00	00	00
Chopra H <i>et al.</i> [14]	05	00	00	00	00	00	00	00	00	00
Shaila & Yatish's study[19]	15	0000	08(53.33)	00	00	00	00	00	00	00
Parajuli& Tuladar's study[21]	10	00	02(20.00)	00	00	00	00	00	00	00
Harshad's study[13]	07	00	03(42.86)	00	00	00	00	00	00	00
Seema <i>et al.</i> [16]	09	00	04(44.44)	00	00	00	00	00	00	00
Archana <i>et al.</i> [20]	07	00	04(57.14)	00	00	00	00	00	00	00
Present study	21	04(19.04)	03(14.28)	03(14.28)	02(9.52)	02(9.52)	02(9.52)	02(9.52)	02(9.52)	01(4.76)

Table-4: Comparison of age wise distribution of nasal lesions in the present study with other studies

Age in years	Vijaya v Mysorekar <i>et al.</i> [9]	T. Dinesh singh <i>et al.</i> [10]	Parajuli& Tuladhar's Study[21]	Present Study
0-10	06 (4.13%)	02 (5.71%)	21 (14.18%)	14(11.2%)
11-20	41 (28.27%)	12 (34.28%)	37 (25.00%)	40(32.00%)
21-30	27 (18.62%)	10 (28.57%)	35 (23.64%)	11(8.8%)
31-40	25 (17.24%)	05 (14.28%)	22 (14.86%)	11(8.8%)
41-50	21(14.48%)	04 (11.42%)	18 (12.16%)	17(13.60%)
51-60	17 (11.72%)	02 (5.71%)	09 (6.08%)	13(10.4%)
61-70	07 (4.82%)	00 (00.00%)	00 (00.00%)	10(8.00%)
71-80	01 (0.68%)	00(00.00%)	00(00.00%)	09(7.2%)
Total	145	35	148	125

Table-5: Different cases in the present study

Histopathological diagnosis	No. of cases
Non neoplastic nasal lesions	72(57.6%)
Inflammatory polyp	47 (65.27%)
Rhinospordiosis	12(16.66%).
Actinomycetes	04 (5.55%)
Reactive lymphoid tissue	03 (4.16%)
Nasolabial cyst	02 (2.77%)
Intradermal nevus	01 (1.38%)
Vascular hamartoma	01(1.38%)
Mucocele	01(1.38%)
Dermoid cyst	01(1.38%)
Neoplastic (Benign) nasal lesions	32 (25.6%)
Inverted papilloma	12 (37.5%)
Hemangioma	04 (12.5%)
Ossifying fibroma	04 (12.5%)
Schwannoma	03 (9.37%)
Fibrous dysplasia	03 (9.37%)
Angiofibroma	02 6.25%)
Minor salivary glandular tumour	01 (3.12%)
Ameloblastoma	01 (3.12%)
Xanthoma	01 (3.12%)
Trichofolliculoma	01 (3.12%)
Neoplastic (Malignant) nasal lesions	21 (16.8%)
Neuroblastoma	04 (19.04%)
Basal cell carcinoma	03 (14.28%)
Squamous cell carcinoma	03 (14.28%)
Melanoma	02 (9.52%)
Undifferentiated nasopharyngeal carcinoma	02 (9.52%)
Undifferentiated sinonasal carcinoma	02 (9.52%)
Mucoepidermoid carcinoma	02 (9.52%)
Adenocarcinoma	02 (9.52%)
Adenoid cystic carcinoma	01 (4.76%)

DISCUSSION

Masses in nasal cavity form a heterogeneous group of lesions with a broad spectrum of histopathological features. A variety of these non-neoplastic and neoplastic lesions are quite impossible to differentiate clinically and they are clinically diagnosed as nasal polyp [7]. The lack of differentiation between neoplastic and non-neoplastic, benign or malignant makes it neglected by the clinicians, as a result causing a delay in diagnosis and treatment [8].

It is important to recognize the range of non-neoplastic lesions in a region and to differentiate them from neoplastic lesions because of different treatment modality and emotional burden on the patient.

In the present study, the age range of the patient varied from 2 to 80 years. Majority of the patients were in the age group of 11-20 years (40.00%), which was consistent with study done by Vijaya v mysorekar *et al.* [9], and T. Dinesh singh *et al.* [10] (Table 4).

A male predominance was observed in this study with a male to female ratio of 1.23:1 which was consistent with study done by Vijaya v mysorekar *et al.* [9]. Similar findings were reported by T. Dinesh singh *et al.* [10], in which male to female ratio was 1.33:1. S. R. Dafale *et al.* [12] reported male to female ratio as 1.8:1 and Harshad's study [13] reported male to female ratio was 2.06:1 which were also in accordance with the present study (Table 1). In present study polyp was the most common comprising 74 (59.20%) cases.

In present study 12 (37.50%) cases of inverted papilloma were found which was consistent with other similar study groups, Hemant Chopra *et al.* [14] (36.36%).

There were 04 (12.50%) cases of hemangioma found in present study. The result co-related well with other study groups, Karansing *et al.* [15](16.13%) and K. Narayan and B. Chandre study [16] (10.00%).

Out of total 32 benign neoplastic cases, 02 (6.25%) cases of angiofibroma were noted. The result was in accordance with other study Nepal A. *et al.* [17](2.63%).

In present study 04(12.50%) cases of ossifying fibroma were found. Similar results were found in study done by Parajuli and Tuladar's study [21] (15.79%).

In present study out of total 21 cases of malignant neoplastic lesions, 03 (14.28%) cases of S.C.C were found. In other similar studies eg, Parajuli and Tuladar's *et al.* [21]found 02 (20.00%) cases, Vijaya v Mysorekar *et al.* [09] found 09 (40.90%) cases, Harshad's *et al.* [13] found 03 (42.86%) cases,

Seema *et al.* [18],found 04(44.44%) cases, Shaila and Yatish's *et al.* [19] found 08(53.33%) cases, Archana *et al.* [20], found 04 (57.14%) cases and SR Dafale *et al.* [12], found 02(100%) cases of S.C.C.

In present study out of total 21 cases of malignant neoplastic lesions, 03 (14.28%) cases of B.C.C were found. In other similar studies Parmar J. Nisha *et al.* [11] found 03(42.86%) cases of B.C.C. We found 04 cases of neuroblastoma (19.04%).

CONCLUSION

During the present study, it was evident that polyps and polypoidal masses in nasal cavity form a complex of lesions ranging from non-neoplastic inflammatory lesions to benign and malignant neoplasms. A clinician's diagnosis based on the history and clinical examination of the patient was inadequate, hence for histopathological examination of all the nasal polyps is justified. Most of malignant neoplastic lesions were occurs after 50 years of age. Incidence of malignant neoplastic lesions increase with advanced age.

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