

Histopathological study of nasal masses in a tertiary care hospital

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Abstract:

Background: Nose and nasal cavity constitute a common site for polypoidal masses. Nasal masses encountered have clinical and pathological entities revealing wide spread histopathological spectrum.

Material and Method: The retrospective and prospective study of all cases who underwent surgery or biopsy in period of 2 year from August 2017 to July 2019.

Results: A total of 86 cases (53 males and 33 females) were reported. Non-neoplastic nasal masses formed the largest group: 61 cases (70.9%) followed by 25 cases (29.1%) of neoplastic nasal masses. Non-neoplastic masses were inflammatory polyp: 42 cases (48.8%), Rhinosporidiosis: 17 cases (19.8%) and Allergic polyp: 2 cases (2.3%). In neoplastic masses we found 21 benign (24.4%) and 4 malignant cases (4.7%).

Conclusion: Simple inflammatory nasal polyps are the most common histopathological pattern seen in our environment. Histopathological examination of nasal mass is necessary to rule out malignancy.

Key Words: Nasal masses, Polyps, Rhinosporidiosis, Adenoid cystic carcinoma, olfactory neuroblastoma

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I. Introduction

The nose develops from frontonasal process, which grows between the primitive forebrain and the stomatodeum. Olfactory placodes on the frontonasal process soon sink below to form nasal pits, which ultimately form the nasal cavity. Primitive nasal septum divides the nasal cavity in middle. Most patients present with complaints of nasal obstruction.⁽¹⁾ Other symptoms include nasal discharge, epistaxis and disturbances of smell. Nasal polyp are most frequent nasal masses which come across in various histopathological analysis.⁽²⁾ Simple nasal polyp are round, smooth, soft, translucent, yellow or pale glistening structures attached to nasal or sinus mucosa by relatively narrow stalk or pedicle. They are nontender and displaced backwards on probing. Nasal masses can be inflammatory lesions, bacterial infections, fungal infections or neoplastic lesions.

II. Materials and Methods

The study was conducted in Pathology Department of Rajendra Institute of Medical Sciences, Ranchi over a period of 2 years. The study included a retrospective and prospective analysis of 1 year each. For the retrospective period of August 2017 to July 2018, all cases were taken out from the records of the department and slides were reviewed. In the prospective period of August 2018 to July 2019, all resected specimen received were followed up. Each case was analysed with respect to age, clinical presentation and microscopic diagnosis. The tissue was processed as per standard procedure; 4- 5micron thick sections were cut and stained by haematoxyline and eosin.

III. Result

In our study, a total of 86 nasal masses were studied. Out of 86 cases, 56 were males and 30 females. (Table 1) The patient's age ranged from 6 months to 62 years. (Table 2)

Table 1: Incidence of nasal masses and grouped according to gender.

Type of mass	Male	Female	Total
Non-neoplastic	39	22	61
Neoplastic			
Benign	15	06	21
Malignant	02	02	04
Total	56	30	86

Table 2: Distribution of nasal masses according to age.

Age (years)	Non-neoplastic mass	Neoplastic mass		Total
		Benign	Malignant	
< 10	12	2	0	14
11- 20	22	5	1	28
21-30	14	7	1	22
31- 40	6	3	1	10
41-50	4	1	0	5
51-60	3	2	0	5
61-70	0	1	1	2
Total	61	21	4	86

Most common detected pathological lesion was inflammatory lesions(70.9%) followed by benign lesions(24.4%) and then malignant lesions(4.7%) Benign polypoidal masses were common in the age range of 8-40 years. Malignant neoplastic lesions were more common after third decade. Nasal polypoidal masses were non- neoplastic in 61 cases (70.9%) and neoplastic in 25 cases (29.1%). Gender wise distribution of various nasal mass lesions are shown in Table 3.

Table 3 :Gender distribution of nasal masses

S. No.	Type of lesions	Number of cases (%)	Male	Female
(I)	Inflammatory lesions	61 (70.9)	39	22
1	Nasal polyps			
	Inflammatory polyps	42 (68.9)	23	19
	Allergic polyps	02 (3.2)	01	01
2	Chronic specific infection			
	Rhinosporidiosis	17 (27.9)	15	02
(II)	Benign lesions/ tumors	21 (24.4)	15	06
1	Hemangioma	04 (19.1)	02	02
2	Angiofibroma	15 (71.4)	12	03
3	Inverted papilloma	02 (9.5)	01	01
(III)	Malignant lesions/ tumors	04 (4.7)	02	02
1	Lymphoma	01 (25)	01	00
2	Adenoid cystic carcinoma	01 (25)	00	01
3	Nasopharyngeal carcinoma	01 (25)	01	00
4	Olfactory neuroblastoma	01 (25)	00	01

IV. Discussion

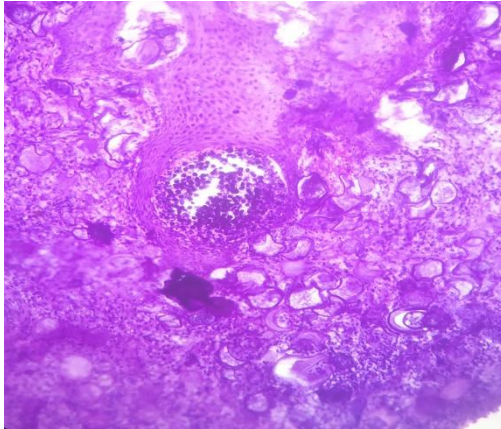
Recurrent attacks of rhinitis may eventually lead to focal protrusions of mucosa, producing so called nasal polyps, which may reach 3 to 4 cm in length.³ Clinically nasal masses appear as soft exophytic masses that extend laterally from the mucosa into the anterior part of the middle meatus.⁴ It is important to recognize the range of non- neoplastic lesions in this region and to categorize them from neoplastic lesions because of different treatment modality and emotional burden on the patient and their relatives.

Nasal polyp included both inflammatory and allergic in which inflammatory polyps predominated in the ratio of 21:1. Allergic nasal polyps shows abundant eosinophils in stroma in addition to inflammatory cells, whereas in the non allergic polyps there is a paucity of eosinophils.

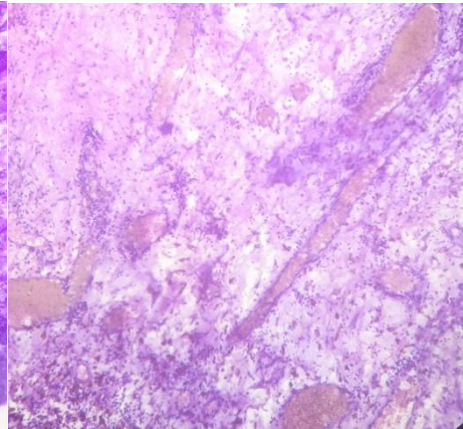
Among infective nasal polyp, we found 17 cases(19.8%) of Rhinosporidiosis. Rhinosporidiosis is endemic in Asian countries.⁵ Most cases belongs to farmers and school going children with preponderance in male patients. The male to female ratio is of 8:1.(Fig.1)

Benign lesions accounted for 24.4% of all cases, study showed 4 cases of capillary hemangiomas. Hemangiomas is not regularly seen in the nasal cavity, though if it occurs is predominantly capillary and is attached to the nasal septum.⁶ Cavernous hemangiomas is rarely seen in the sinonasal tract.⁷

Angiofibroma accounts for 17.4% and male to female ratio was 4:1.Histologically it is composed of intricate mixture of blood vessels and fibrous stroma. The stroma varies from numerous mast cells, to acellular and highly collagenized tissue. The vessels range from capillary size to venous size. (Fig.2)



(Fig.1:Numerous sporangium containing spores in rhinosporidiosis,H and E stain,x20)

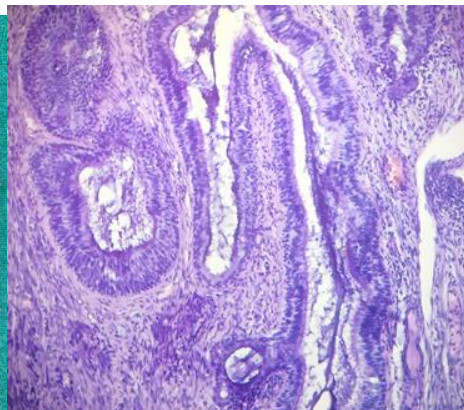


(Fig.2:Admixture of blood vessels and fibrous stroma in angiofibroma, Hand E stain, x20)

Sinonasal or Schneiderian papillomas arising from nasal septum have three morphologic types which are inverted, fungiform and oncocytic. 2 cases of Inverted papilloma were found, both were in fifth decade. Microscopically, these papillomas consisted of marked thickened squamous epithelial proliferation growing downward into the underlying stroma with admixture of mucin containing cells and numerous microcysts.(Fig.3,4)



(Fig.3: Gross appearance of papilloma)



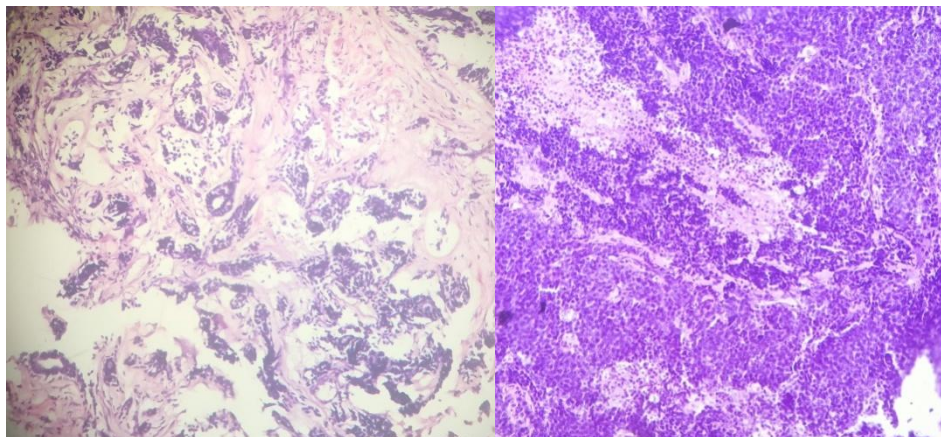
(Fig.4: Epithelium projecting inwards in inverted nasal papilloma, H and E, x20)

Out of 4 malignant lesions, 1 case of nasal lymphoma was found. Histologically, section showed small round blue cells. Sinonasal lymphoma is more common in Asian than western population, where it represents the second most common group of extranodal lymphomas next to gastrointestinal lymphoma.

We found 1 case of nasopharyngeal carcinoma. It is distinguished by its particular histology, geographical distribution and its relation to Epstein Barr virus, and there is no association with tobacco smoking.⁹

One case of Adenoid cystic carcinoma (ACC) was found. In general, these are more frequent than the usual adenocarcinomas and are aggressive tumours but with better outcome as compared to similar tumours arising elsewhere in the head and neck region.¹⁰(Fig.5)

Olfactory neuroblastoma (esthesioneuroblastoma) is a rare tumor of the nasal cavity. It may also be present in the neck.¹¹ We have one case of olfactory neuroblastoma in a female aged 30 years. Histologically, it reveals uniform small cells with round nuclei, scanty cytoplasm, indistinct nuclear membrane, cells forming rosettes arranged perivascularly against a prominent fibrillary background. (Fig.6) Discrepancies in diagnosis of malignant lesions were confirmed by immunohistochemistry; the diagnosis of lymphoma and neuroblastoma were given after IHC confirmation.



(Fig.5: Few cribriform island shows deposits of abundant hyaline material with stragulation background in case of neuroblastoma, of the tumor cells in ACC, H and E stain, x20) (Fig.6: Round blue tumor cells in fibrillary background in case of neuroblastoma, of the tumor cells in ACC, H and E stain, x20)

V. Conclusion

Inflammatory lesions are the most common in nasal cavity with inflammatory polyp being the most frequent lesion encountered. Amongst infective rhinitis, we found only cases of rhinosporidiosis. Malignancy should be distinguished from non malignant lesions. Surgery is the treatment of choice for benign lesion, while a composition of surgery and radiotherapy is helpful in malignant conditions.

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