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A Clinicopathological Study of Masses in the Nasal Cavity

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Abstract

Background: Objectives: 1) To classify the nasal masses presenting to us on basis of age, sex, ethnicity, site of origin, clinical type. 2) To demonstrate the importance of histopathological study in accurate diagnosis of nasal masses and their further management. Design of study: prospective study. **Methods:** Data were collected from Admission register of Department of ENT, NMCH Patna over a period of 2 years, with total sample size of 94. **Results:** 94 cases of nasal mass operated in our operation theatre were segregated. The cases were classified on basis of age, sex, religion, religion, ethnicity, residence, Socio-economic status, symptoms, character of discharge, site of origin of nasal mass, nature of mass in nasal cavity, clinical type of nasal mass and histopathological type. **Conclusion:** Histopathological examination is necessary for comfirmation of diagnosis of diagnosis of nasal masses and provide accurate measures for treatment.

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INTRODUCTION

Mass in the nasal cavity, causing various symptoms, are now one of the most common reason for one's referral to an Otorhinolaryngology clinic. The constellation of symptoms includes nasal obstruction, nasal discharge, partial or total loss of smell, epistaxis, headache due to associated sinusitis, mass protruding from the nostril, nasal deformity etc.

The nasal mass may originate from the septum, the floor, the lateral wall, roof of the nasal cavity, paranasal sinuses, nasopharynx or herniations from cranium. These growths exist in a small intricate anatomic region and embody many dissimilar pathologic conditions. Due to a varied presentation of the nasal mass in Different age, sex, religion, occupation, socioeconomic status, population – tribal or non-tribal a detailed study of incidence is required.

The histopathological examination of the nasal mass helps us to differentiate the allergic, infective, inflammatory, benign or malignant causes. Each of these masses has different incidence, behavior, progression and outcome, so it is very important to study the

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histopathological picture of the mass to confirm the diagnosis and make a treatment plan accordingly.

MATERIALS AND METHODS

The study was conducted in the Department of Otorhinolaryngology, NMCH patna. Which is a tertiary referral centre managed by the health ministry, government of Bihar housing all major specialties, providing health care services to patients from all over Bihar part of West Bengal, Orissa, Chhattisgarh, Madhya Pradesh, Jharkhand & adjoining states. This prospective study was carried out over a period of 2 years on a total of 94 subjects.

Cases with one or more symptoms pointing to nasal masses as the cause were selected from the wards (male and female), emergency and out-patient department of the Department Otorhinolaryngology, NMCH, Patna. These patients were examined clinically preoperatively and postoperatively the histopathological studies of the tissues obtained form the nasal masses were carried out in the Department of Pathology, NMCH Patna. Data were analyzed using SSPS (Version 20) software.

RESULTS

94 cases of nasal mass operated in our operation theatre were segregated. The cases were classified on basis of age, sex, religion, religion, ethnicity, residence, Socio-economic status, symptoms, character of discharge, site of origin of nasal mass, nature of mass in nasal cavity, clinical type of nasal mass and histopathological type.

Table 1: Age distribution of different types of nasal mass

	Age groups (in years)						
Types of nasal mass	**0-10**	**11-20**	**21-30**	**31-40**	**41-50**	**51-60**	**Above 60**
Antrochoanal polyp	6 (12.8%)	22 (46.8%)	8 (17%)	6 (12.8%)	4 (8.5%)	1 (2.1%)	-
Rhinosporidiosis	4 (18.2%)	8 (936.4%)	8 (36.4%)	2 (9.1%)	-	-	-
Bleeding polypus	-	6 (75%)	-	2 (25%)	-	-	-
Ethmoidal polyp	-	-	2 (33.3%)	2 (33.3%)	2 (33.3%)	-	-
Inverted papilloma	-	-	2 (50%)	-	2 (50%)	-	-
Juvenlineangiofibroma	-	2 (100%)	-	-	-	-	-
Papillary Adenocarcinoma	-	-	-	1 (100%)	-	-	-
Nasal septal absess	-	-	-	-	1 (100%)	-	-
Inranasalencephaloceles	2 (100%)	-	-	-	-	-	-

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Total	12 (12.8%)	38 (40.4%)	20 (21.3%)	13 (13.8%)	8 (8.5%)	3 (3.2%)	-

Table 2: Showing sex distribution of nasal mass

Sex	No of Case	Percentage %
Male	64	68.1%
Female	30	31.9%
Total	94	100%

Table 3: Distribution of nasal masses on basis of ethnicity

Population	No of case	Percentage %
Tribal	34	36.2%
Non-Tribal	58	61.8%
Total	94	100%

Table 4: Distribution of nasal masses on basis of socio-economic status

Economic status	No of case	Percentage %
Low	62	65.9%
Middle	94	100%

Table 5: Incidence of various smptoms due to nasal mass

Symptoms	No of case	Percentage %
Nasal obstruction	92	97.9
Nasal discharge	49	52.1
Headache	62	65.9
Nasal mass	51	54.3
Facial pain	49	52.1
Smell abnormalities	41	43.6
Sneezing	29	30.9
Watering from eye	28	29.9
Diminished hearing	28	29.9
Mouth breathing	25	26.6
Change in voice	27	28.7
Lump in throat	10	10.6
Tinnitus	15	15.9

Table 6: Incidence of character of nasal discharge

Types of nasal mass	Mucold	Mucopurulent	Purulent	Sanguineous
Antrochoanal polyp	30 (80.9%)	9 (19.1%)	-	-
Rhinosporidiosis	-	-	-	22 (100%)
Bleeding polypus	-	-	-	8 (100%)
Ethmoidal polyp	4.(66.6%)	2 (33.3%)	-	-
Inverted papilloma	-	4 (100%)	-	-

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Juvenile angiofibroma	-	-	-	2 (100%)
Papillary adenocarcinoma	-	-	-	1 (100%)
Nasal septal abscess	-	-	2 (100%)	-
Intranasal encephaloceles	No discharge	-	-	-

Table 7: Site of origin of nasal mass

	Different sites of origin					
Types of nasal mass	**Ethmoid air cells**	**Maxillary antrum**	**Middle turbinate**	**Inferior turbinate**	**Middle meatus**	**Septum**
Antrochoanal polyp	-	47	-	-	-	-
Rhinosporidiosis	-	-	4	4	-	14
Bleeding polypus	-	-	-	2	-	14
Bleeding polypus	-	-	-	-	4	-
Inverted papilloma	posterior part of nasal cavity close to the margin of spheno-palatine formen					
Juvenile angiofibroma	-	-	1	-	-	-
Papillary adenocarcinoma	-	-	-	-	-	2
Nasal septal abscess	Upper part of nose between septum and middle turbinate					

Table 8: Nature of mass in the nasal cavity

Origin	**No of Cases**	**Percentage %**
Non-neoplastic	87	92.5
Inflammatory	84	89.3
Allergic	3	3.2
Infective		
Congenital		
Neoplastic	7	7.5
Benign	6	6.4
Malignant	1	1.1

Table 9: Incidence of different clinical types of nasal mass

Clinical types of nasal mass	**No of Cases**	**Percentage**
Clinical types of nasal mass	47	50
Rhinosporidiosis	22	23.4
Bleeding polypus	8	8.5
Ethmoid polyp	6	6.4
Inverted papilloma	4	4.3
Juvenile angiofibroma	2	2.1
Papillary	1	1.1

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adenocarcinoma		
Nasal septal abscess	2	2.1
Intranasal encephaloceles	2	2.1
Total	94	100

Table 10: Classification on basis of histopathological type.

Histopathological types	No of Cases	Percentage
Inflammatory nasal poly	47	50
Allergic nasal polyp	6	6.4
Rhinosporidiosis	22	23.4
Bleeding polypus	6	6.4
Inverted papilloma	4	4.3
Juvenile angiofibroma	2	2.1
Papillary adenocarcinoma	1	1.1
Nasal septal abscess	2	2.1
Intranasal encephaloceles	2	2.1
Total	94	100

DISCUSSION

In our study, the maximum numbers of patient with nasal mass were between 11 to 22 years of age (40.4%). The youngest patient was 2 months old and the oldest as 60 years old. The mean age was 22.5 years in a study by Zafar et al and 33 years by Bakari al.[1,2]
The Prevalence of mass in the nasal cavity was found to be more in male than in female, the approximate incidence ratio of male to female being nearly 2:1, in accordance with results from studies by Zafar et al and Hedmann et al.[2,3] The prevalence of masses was more in economically low status people (65.9%).

The racial incidence in non-tribals (61.8%) was found to be more as compared to tribals. This is also in proportion to the urban population ratio of the two races in the city patna. No association of the nasal mass with the occupation of the patient observed.
Most cases of antrochoanal polyps were found in early ages while most cases. The chief signs of the mass in cases of antrochoanal polyps are single, smooth, pale, mobile mass, insensitive and not bled on probing with origin from the lateral wall of the nose and also seen in the nasopharynx when large. Like masses, insensitive and does not bleed on probing.

4 cases were confirmed as inverted papilloma, distributed amongst both younger and older age group. Our results were in accordance with those of kashima el.[4] On histological examination, the characteristic feature of inversion of the stratified squamous epithelium into the underlying stroma was observed. These features were same as found by Benninger MS et al, Nielsen PL et al, Onal K et al and Bura M et al.[5-8]

One case of paoillary adenocarcinoma was found in the fourth decade of life. Papillary adenocarcinoma of sinonasal tract is significantly associated with exposure to wood dust, as reported by Cecchiet al9. The case of papillary adenocarcinoma in our study was Washerman. This study was very short to establish any relationship with the occupation.

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The major cause of nasal mass was nasal polyps, which included both antrochoanal and ethmoidal polyps, second most common being rhinosporidiosis. On clinical examination many nasal masses showed similar picture of different diseases. Most of nasal masses cannot be accurately diagnosed without histopathological examination. In cases of malignancy the exact kind of treatment can be given after histopathological examination.

The important symptoms that were found were nasal obstruction 997.9%) nasal discharge (52.1%) headache (65.9%), nasal mass (54.3%), facial pain (52.1%), disturbance of smell (43.6%), and others.

Symptoms grouped under the heading 'others' include sneezing (30.9%), watering from eyes (29.9%), diminished hearing (29.9%), mouth breathing (26.6%), change in voice (28.7%), lump in throat (10.6%) and tinnitus (15.9%).

In this series, all nasal polyps were sent for histopathological examination. 1 case (1.1%) was identified as having a lesion that differed histologically from the clinical diagnosis made at the time of surgery and which altered its further management. Thus, the diagnosis based on clinical examination shows that it is not specific enough for predicting the nature of ta mass in the nose; therefore sending all nasal masses for histopathological examination is justified as routine an ethical surgical practice. Loannis et al,[10] determined the incidence of discrepancies between clinical and histological diagnosis. They identified 1.1% lesion that deferred histologically from the clinical diagnosis made at the time of surgery and altered their further management. These findings are in agreement with the recommendation of pelausa EO et al and Hellequest BH et al.[11,12]

CONCLUSION

Nasal masses are most common in males. Antrochoanal polyps are the most frequently occurring nasal masses amongst the population of the region, maximum cases being presented in younger age group. Histopathological examination for all nasal masses is a must for accurate diagnosis.

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