

POLYPOIDAL MASSES IN NOSE: A CLINICO-PATHOLOGICAL CORRELATION STUDY

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ABSTRACT: INTRODUCTION: A polypoidal mass in the nasal cavity is a condition commonly encountered by the Otorhinolaryngologist. A diverse group of lesions may present themselves as polypoidal masses. A number of benign looking polyps often turn out to be malignant lesions or vice versa. **OBJECTIVES:** This study is intended to clinically differentiate the various conditions presenting as nasal polypoidal lesions, to understand their exact nature by histopathological examination and thereby learn the relative incidence of individual conditions encountered. **METHODOLOGY:** Detailed history, clinical examination and histopathological examination of nasal polypoid masses were done in 73 patients. Incidence, clinical features and histopathological correlation of all the polypoidal masses were ascertained. **RESULTS:** Of the 73 cases, 53 (72.6%) cases were non-neoplastic and 20 (27.4%) were neoplastic lesions. The non-neoplastic lesions included nasal polyps, rhinosporidiosis, pyogenic granuloma and mucocoele. Benign neoplasms included inverted papilloma, haemangioma, angiofibroma, neurilemmoma and pleomorphic adenoma. Malignant neoplasms included squamous cell carcinoma, adenoid cystic carcinoma and olfactory neuroblastoma. **CONCLUSION:** Polypoidal masses in the nose may range from non-neoplastic lesions to benign and malignant neoplasms with various histopathologic findings. It is impossible to distinguish between such lesions clinically. Hence, it is essential that all polypoidal masses removed should be evaluated histopathologically, to make a correct diagnosis.

KEYWORDS: Nasal polypoidal masses, clinical and histopathological correlation.

INTRODUCTION: A polypoidal mass in the nasal cavity is a commonly encountered condition by Otorhinolaryngologists. Despite the high prevalence, its treatment often presents a clinical dilemma.¹ A diverse group of lesions present as polypoidal masses in the nasal cavity. They range from simple inflammatory mucosal polyps to various other pathological entities like infective granulomatous diseases, papillomas, vascular masses or malignant neoplasms. A number of deceptively benign looking polyps often turn out to be malignant lesions or vice versa. The inverted papilloma exemplifies the difficulty faced by the clinicians. However, only by histopathological examination of excised polypoidal tissues one can arrive at the final diagnosis.²

The world literature abounds with the reports of series, many retrospective, obtained from collective institutional experiences. This study is intended to assess and clinically differentiate the various conditions presenting as nasal polypoidal lesions, to understand their exact nature by histopathological examination and try to establish their pathogenesis, placing them under established classification and thereby learn the relative incidence of individual conditions encountered.

METHODOLOGY:

Type of Study: Cross sectional, Descriptive study.

Source of Data & Study Period: Patients who reported to the department of Otorhinolaryngology of Sri Devraj Urs Medical College & Hospital between 01 Jan 2008 and 31 Dec 2009.

Study Subjects & Sample Size: A total of 73 patients who conformed to the inclusion & exclusion criteria and consented to participate in the study.

Inclusion Criteria: Patients of all age groups and both sexes presenting with nasal symptoms and who on anterior rhinoscopy revealed polypoidal mass in either or both nasal cavities. A polypoidal mass was defined as any mass of tissue that bulges or projects outwards from the normal mucosal surface, with a broad base (sessile) or a slender stalk (pedunculated).

Exclusion Criteria: Patients presenting with congenital nasal masses and patients presenting with a nasal mass of intracranial origin such as basal meningocoele, basal meningo-encephalocoele and nasal glioma.

Method of collection of data: All surgically excised polypoidal masses were subjected to histopathological examination in the department of Pathology, Sri Devraj Urs Medical College & Hospital. Haematoxylin and eosin stains were used for all section's for histopathological examination. Other special stains were used as and when required and nature of polypoidal masses was ascertained. Polypoidal masses were classified into appropriate groups depending on the clinical features, and histopathological findings

Statistical Analysis:

1. For comparison of groups, the descriptive status was calculated by mean standard deviation and proportions.
2. Chi-square test was used for testing associations. The level of significance was taken as 0.05 (when p is < 0.05 the results are considered significant).

RESULTS: A total number of 73 cases of nasal polypoidal masses who presented to the hospital were studied during the two year period. The patients were aged between 6 to 72 years. The mean age was 37.3 years with a standard deviation of 18.34. 48 (65.7%) were males and 25 (34.3%) were females. Of the 73 cases, 53 (72.6%) were non neoplastic and 20 (27.4%) were neoplastic.

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Non neoplastic nasal polypoidal masses 53 (72.6%)	Nasal polyps 48 (65.8%)	Ethmoidal polyps	28 (38.3%)
		Antrochoanal polyps	18 (24.6%)
		Mixed	01 (1.4%)
		Sphenoidal polyps	01 (1.4%)
	Rhinosporidiosis		03 (4.1%)
	Granuloma		01 (1.4%)
	Mucocoele		01 (1.4%)
Neoplastic nasal polypoidal masses 20 (27.4%)	Benign 14 (19.2%)	Inverted Papilloma	05 (6.8%)
		Haemangioma	04 (5.4%)
		Angiofibroma	03 (4.1%)
		Neurillemmoma	01 (1.4%)
		Pleomorphic adenoma	01 (1.4%)
	Malignant 06 (8.2%)	Squamous cell carcinoma	04 (5.4%)
		Adenoid cystic carcinoma	01 (1.4%)
		Olfactory neuroblastoma	01 (1.4%)
		Total	73 (100%)

Table 1: Distribution of types of nasal polypoidal masses

Table 1 shows the distribution of the nasal polypoidal masses. Nasal polyps constituted 65.8% of the nasal polypoidal masses. Ethmoidal polyps (38.3%) and antrochoanal polyps (24.6%) accounted for more than half of the nasal polypoidal masses. The other non-neoplastic nasal polypoidal masses were Rhinosporidiosis, mucocoele and granulomas.

The number of cases of benign nasal polypoidal masses (19.2%) was significantly more than the malignant nasal polypoidal masses (8.2%). The most common benign nasal polypoidal mass was inverted papilloma (6.8%) followed by hemangioma (5.4%) and angiofibroma (4.1%). The most common nasal malignant nasal polypoidal mass was squamous cell carcinoma (5.4%).

	0-20 years	21-40 years	41-60 years	>60 years	Male	Female	Total
Ethmoidal polyps	04	12	10	02	21	07	28 (52.8%)
Antrochoanal polyps	08	04	06	Nil	07	11	18 (34.0%)
Mixed polyps	Nil	01	Nil	Nil	01	Nil	01 (1.9%)
Sphenoidal polyps	Nil	01	Nil	Nil	01	Nil	01 (1.9%)
Rhinosporidiosis	02	01	Nil	Nil	02	01	03 (5.7%)
Granuloma	Nil	Nil	Nil	01	Nil	01	01 (1.9%)
Mucocoele	Nil	01	Nil	Nil	01	Nil	01 (1.9%)
Total	14 (26.4%)	20 (37.7%)	16 (30.2%)	03 (5.7%)	33 (62.3%)	20 (37.7%)	53 (100%)

Table 2: Distribution of Non neoplastic nasal polypoidal masses according to age & sex

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Table 2 shows the distribution of the non-neoplastic nasal polypoidal masses among the study group according to age and sex. The non-neoplastic nasal polypoidal masses were more among 21- 40 years of age (37.7%) followed by 41-60 years age group (30.2%) and 0-20 year age group (26.4%). The occurrence of non-neoplastic nasal polypoidal masses was significantly higher in males (62.3%) as compared to female (37.7%). The ethmoidal polyps were predominantly seen in adults aged between 20 and 60 years. The antrochoanal polyps were more common among the age group 0 and 20 years. Ethmoidal polyps were more common in males whereas antrochoanal polyps were more commonly seen in females. The polypoidal mass due to Rhinosporidiosis were seen more commonly in males.

Symptoms	Frequency (n=53)
Nasal Obstruction	52 (98.1%)
Rhinorrhea	45 (84.9%)
Post Nasal Discharge	39 (73.6%)
Sneezing	35 (66.0%)
Headache	28 (52.8%)
Smell Disturbances	24 (45.3%)
Nasal Mass	18 (34.0%)
Epistaxis	10 (18.9%)

Table 3: Presenting symptoms of patients with non-neoplastic polypoidal masses

As shown in Table 3, almost all patients with non-neoplastic polypoidal masses presented with nasal obstruction. Most of them also had Rhinorrhea and post-nasal discharge. Sneezing, headache and smell disturbances were common presenting symptoms among those with non-neoplastic polypoidal masses.

	Laterality			Numbers		On post Nasal Examination		Total
	Right	Left	Bilateral	Single	Multiple	Present	Absent	
Ethmoidal Polyp	3 (10.7%)	2 (7.1%)	23 (82.2%)	3 (10.7%)	25 (89.3%)	nil	28 (100%)	28
Antrochoanal Polyp	12 (66.7%)	6 (33.3%)	nil	18 (100%)	nil	13 (72.2%)	5 (27.8%)	18
Mixed	nil	nil	1 (100%)	nil	1 (100%)	1 (100%)	nil	01
Sphenoidal polyps	nil	1 (100%)	nil	1 (100%)	nil	1 (100%)	nil	01
Rhino sporidiosis	3 (100%)	nil	nil	nil	nil	nil	3 (100%)	03

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Granuloma	nil	1 (100%)	nil	1 (100%)	nil	nil	1 (100%)	01
Mucocoele	1 (100%)	nil	nil	1 (100%)	nil	nil	1 (100%)	01

Table 4: Clinical findings in the non –neoplastic nasal polypoidal masses

Table 4 shows the clinical findings of the non-neoplastic nasal polypoidal masses. Most of the ethmoidal polyps were bilateral (82.2%) and most of them were multiple (89.3%). None of them showed post nasal extension. All the antrochoanal polyps were unilateral, single and 72.2% of them had post nasal extension.

Neoplastic nasal polypoidal masses:

		0-20 years	21-40 years	41-60 years	>60 years	Male	Female	Total
Benign	Inverted Papilloma	nil	nil	3	2	4	1	05 (25.0%)
	Haemangioma	2	nil	2	nil	2	2	04 (20.0%)
	Angio fibroma	2	1	nil	nil	3	Nil	03 (15.0%)
	Neuri lemmoma	nil	nil	1	nil	nil	1	01 (5.0%)
	Pleomorphic adenoma	nil	1	nil	nil	1	Nil	01 (5.0%)
Malignant	Squamous cell carcinoma	nil	nil	1	3	4	Nil	04 (20.0%)
	Adenoid cystic carcinoma	nil	1	nil	nil	nil	1	01 (5.0%)
	Olfactory neuroblastoma	nil	nil	1	nil	1	Nil	01 (5.0%)
		04 (20.0%)	03 (15.0%)	08 (40.0%)	05 (25.0%)	15 (75.0%)	05 (25.0%)	20 (100%)

Table 5: Distribution of neoplastic nasal polypoidal masses according to age & Sex

Neoplastic nasal polypoidal masses occurred in persons aged >40 years of age (65.0%). As seen in table 5, 75% of neoplastic polyps occurred in men. Among benign neoplastic nasal polypoidal masses, all inverted papillomas occurred in patients aged 40 years and above, and all cases of angiofibroma occurred in patients aged less than 40 years of age. Among malignant neoplastic nasal polypoidal masses, all cases of squamous cell carcinoma were seen in patients aged 40 years and above.

Symptoms	Frequency (n=20)
Nasal Obstruction	17 (85.0%)
Epistaxis	17 (85.0%)
Nasal Mass	10 (50.0%)
Headache	10 (50.0%)
Smell Disturbances	07 (35.0%)
Rhinorrhea	07 (35.0%)
Post Nasal Discharge	03 (15.0%)
Sneezing	02 (10.0%)

Table 6: Presenting symptoms of neoplastic nasal polypoidal masses

As seen in table 6, most patients with neoplastic nasal polypoidal masses presented with nasal obstruction and epistaxis. While nasal epistaxis and nasal mass were uncommon as presenting symptoms among those with non-neoplastic nasal polypoidal masses, they were common presenting symptoms among those with neoplastic nasal polypoidal masses

DISCUSSION: The age of the patients with polypoidal masses varied between 6 and 72 years. In a study conducted by Roy S.K and Sarma U in Gauhati, the age of the patients varied between 8 and 62 years.¹ In a study conducted by Chopra H, Dua K, Chopra N and Mittal V the mean age of the patients was 40.12 years while the mean age in our study was 37.3 years Most studies have reported a male preponderance of nasal polypoidal masses. In our study the male to female ratio was 2: 1. Chopra et al report a male: female ratio of 3: 2.7.² In a study conducted by Kumari MKK and Mahadeva K.C, the male: female ratio that was noted was 2.36: 1.³ In the study done by Roy S.K et al, the male to female ratio was 2.08: 1.¹

In our study, 73% were non neoplastic and 27% were neoplastic. In the study done by Kumari MKK, 66% of the polypoidal masses were non-neoplastic and 34% of the masses were neoplastic.³ In a study conducted by Lathi A. Syed MMA, Kalakoti P, Qutub D, Kishve SP nasal polypoidal masses were neoplastic in 71.4% of the patients and non-neoplastic in 28.6% of the patients.⁴

Among the non-neoplastic masses, in our study, nasal polyps were the most common. Ethmoidal polyps followed by Antrochoanal polyps were the most common type of polypoidal masses encountered in the study. Similar findings were observed in the study conducted by Lathi et al.⁴ In the study conducted by Roy et al., antrochoanal polyps were more common than ethmoidal polyps.¹ Granulomatous polypoidal masses have been reported from other studies conducted in Bangalore and Maharashtra similar to this study where there were three cases of Rhinosporidiosis and one case of chronic specific granuloma.^{3, 4}

In our study, benign lesions were significantly more than malignant lesions. The most common benign lesion that was observed was inverted papilloma followed by hemangioma and angiofibroma. In a study conducted by Kumari et al., there was an equal frequency of benign and

malignant lesions, and the most common benign lesion that was observed was angiofibroma followed by inverted papilloma and schwannoma.³ In a study conducted by Bist SS, Varshney S, Baunthiyal V, Bhagat S, Kusum A, the most common benign lesions were angiofibroma followed by fibro-osseous lesion and hemangioma.⁵ The most common malignant lesion observed in our study was squamous cell carcinoma followed by adenoid cystic carcinoma and olfactory neuroblastoma. Similar observations were noted in a study conducted by Bist SS.⁵ In the study conducted by Kumari et al., the most common malignant lesion that presented as polypoidal mass was anaplastic carcinoma followed by squamous cell carcinoma.³ Whereas, in a study conducted by Chopra et al., the most common tumor was lymphoma followed by adenoid cystic carcinoma.²

The most common presenting symptom of non-neoplastic lesions was nasal obstruction followed by nasal discharge. On the other hand, most common presenting symptom for neoplastic polypoidal masses were epistaxis and nasal obstruction in equal frequencies. Nasal obstruction and nasal discharge were the most common symptoms observed in a study conducted by Roy S.K.¹ The most common presenting symptoms as reported by Bist SS were nasal obstruction found in 87.27% cases which was unilateral in 55.45%, and bilateral in 31.81% cases, followed by nasal discharge (69.09%) and headache.⁵

CONCLUSION: Among the 73 cases of nasal polypoidal masses reporting to the hospital, non neoplastic polyps were more common than neoplastic polyps. Ethmoidal polyp was the most common non-neoplastic nasal polypoidal mass, and inverted papilloma and squamous cell carcinoma were the most common benign and malignant nasal polypoidal masses respectively. Polypoidal masses in the nose may range from non-neoplastic lesions to benign and malignant neoplasms with various histopathologic findings. It is quite impossible to distinguish between such lesions clinically. Hence, it is essential that all polypoidal masses removed should be evaluated histopathologically, to avoid misleading diagnosis.

REFERENCES:

1. Roy S.K, Sarma U. Polypoid Mass of Nasal Cavity and Paranasal Sinus - not Always Inflammatory Origin. Indian journal of applied research 2014; 4: 457-9.
2. Chopra H, Dua K, Chopra N, Mittal V. Histopathology of nasal masses. Clinical Rhinology: An international Journal 2010; 3; 81-5.
3. Kumari MKK, Mahadeva K.C. Polypoidal Lesions in the Nasal Cavity. J Clin Diagn 2013; 7: 1040-2.
4. Lathi A. Syed MMA, Kalakoti P, Qutub D, Kishve SP. Clinico-pathological profile of sinonasal masses: a study from a tertiary care hospital of India. ACTA otorhinolaryngologica italica 2011; 31: 372-377.
5. Bist SS, Varshney S, Baunthiyal V, Bhagat S, Kusum A. Clinico-pathological profile of sinonasal masses: An experience in tertiary care hospital of Uttarakhand. National Journal of Maxillofacial Surgery 2012; 3: 180-6.

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