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## Original Article

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# Pathology of nasal mass lesions in a tertiary care center in Hyderabad, Telangana, India – A retrospective three years study

Sravan Chinthakindi<sup>1\*</sup>, Akina Prakash<sup>2</sup>, [Colonel] Ramanan Duraiswami<sup>3</sup>, V Indira<sup>4</sup>

<sup>1</sup> & <sup>2</sup> Assistant Professor, <sup>3</sup> Professor, <sup>4</sup> Professor & HOD, Department of Pathology, Malla Reddy Institute of Medical Sciences, Suraram, Hyderabad, Telangana, India

**\*Corresponding Author:**

Email: [sravan1784@gmail.com](mailto:sravan1784@gmail.com)

### Abstract:

**Background:** The aim of the study was to identify the pattern of pathologies involving nasal mass lesions which were received for histopathological evaluation at a tertiary hospital in Hyderabad during the period January 2014 to December 2016.

**Methods:** The data pertaining to samples of nasal mass lesions received for histopathological evaluation at the laboratory of a tertiary care hospital in Hyderabad from January 2014 to December 2016 were analyzed to determine the pattern of pathologies diagnosed during such evaluation and the age distribution of all lesions.

**Results:** A total of 62 specimens labeled as nasal masses were received during the period studied. The majority of patients, whose samples were received, were in the age group of 21 – 30 years [35.48%], with very few patients from either extreme of age. Inflammatory nasal polyp was the most common histopathological diagnosis given [26 out of 62 cases, 41.93%] followed by allergic nasal polyp [19 out of 62 cases, 30.64%]. Only one lesion was diagnosed as malignant [squamous cell carcinoma]

**Conclusion:** The majority of nasal mass lesions received for evaluation were inflammatory or else allergic nasal polyps. Most patients were in the third decade of life.

**Keywords:** Nasal mass lesions; inflammatory nasal polyps; allergic nasal polyps; incidence of pathologies.

### Introduction:

The nose, apart from being one of the most prominent features on a person's face, is also host to a variety of polypoidal lesions. Polypoidal lesions in the nasal cavity are very commonly encountered in clinical practice<sup>1, 2</sup>. The presence of a mass in the nose is a seemingly simple problem, but raises questions regarding the histopathology of the lesion in question. The nose is exposed to a variety of deleterious agents such as allergens, infectious agents, physical trauma, all of which may play a part in the development of tumor – like or truly neoplastic lesions<sup>3</sup>. Clinically sometimes, it becomes quite impossible to distinguish between inflammatory conditions presenting as simple polyps, polypoidal lesions due to specific disease and polypoid neoplasm (benign and malignant). Therefore it becomes important that all polyps and polypoidal lesions should be subjected for histopathological evaluation.

### Material and Methods:

The study was undertaken as a retrospective systematic study using existing patient data retrieved from the records of the Department of Pathology, Malla Reddy Hospital.

During the period from January 2014 to December 2016, 62 specimens labeled as nasal masses or polyps were received for evaluation in the Hospital Laboratory of a tertiary care hospital located in Hyderabad.

All samples were received from the Operation Theater in buffered formal saline as per protocols given in the Standard

Operating Procedure [SOP] for Histopathology of the Hospital. Samples were grossed on the same day that they were received, after ensuring adequate tissue fixation. Tissue slices were taken and processed as per SOP. Micro sections of 5 microns thickness were taken onto glass slides and stained by standard Hematoxylin and Eosin stains as per protocols. After mounting and labeling, all slides were viewed by at least two Pathologists before final reporting.

For the purpose of this study, all records pertaining to the study period were retrieved. Details of the histopathological diagnoses of the nasal masses evaluated, as well as the age distribution of the patients, were analyzed. All patient data were kept confidential. Data was analyzed using an MS Excel worksheet and calculations of incidence made from the same.

### Results:

A total of 62 samples of nasal masses were received for histopathological evaluation at our Hospital, a tertiary care hospital located in Hyderabad in Telangana, India during January 2014 to December 2016. The age – wise distribution of the patients is given in Table 1. Patients in the age group of 21 – 30 years constituted the largest group [22 out of 62 patients, 35.48% of patients]. Less than 1% of lesions each were from patients in the first and seventh decades of life. Males [35 out of 62 patients, 56.45%] constituted the majority of patients.

The distribution of lesions diagnosed is given in Figure 1. Inflammatory nasal polyp was the most common histopathological diagnosis given [26 out of 62 cases, 41.93%] followed by allergic nasal polyp [19 out of 62 cases, 30.64%]. Only one specimen was diagnosed as malignant, that being a squamous cell carcinoma. In our study, the benign neoplastic lesions encountered were hemangioma [3], inverted papilloma [4], angiofibroma [1], benign spindle cell lesion [1], sebaceous adenoma [1] and schwannoma [1]. The histopathological patterns of lesions found in our study are depicted in Figures 2 - 5.

### Discussion:

Polypoidal masses in the nasal cavities often present a diagnostic conundrum to the treating ENT surgeon on clinical evaluation, it being difficult to distinguish clinically between neoplastic and non - neoplastic lesions.<sup>4</sup> Patients in the age group of 21 - 30 years constituted the largest group [22 out of 62 patients, 35.48% of patients]. This is in agreement with other studies [Modh et al<sup>2</sup>; Zafar et al<sup>5</sup>].

A total of 47 cases of nasal polyps were diagnosed in our study [75.80%] thus constituting the largest group of lesions. This is similar to the findings in other studies [Modh et al 83.64%<sup>2</sup>; Zafar U et al 82.06%<sup>5</sup>; Tondon et al 62.85%<sup>6</sup>; Raj et al 80.49%<sup>7</sup>]. Inflammatory polyps were more common, matching the findings of Raj et al<sup>7</sup> and Dafale et al.<sup>8</sup>

True nasal polyps are tumor-like polypoid masses arising from nasal cavity and sinuses. Their formation is associated with inflammation, allergy, or mucoviscidosis. Allergic polyps are associated with nasal allergy and predominant eosinophilic infiltrate in the stroma whereas inflammatory polyps are found in chronic sinonasal infection. Eosinophils are not restricted to polyps having a presumed allergic pathogenesis, although they are more numerous in them.

We did not find any case of fungal infections in our study, although other authors have reported such cases presenting as nasal masses<sup>2,9</sup>.

Benign tumors constituted 11 out of 62 lesions [17.74% of lesions analyzed]. Of these, inverted papilloma [4] and hemangioma [3] were the most commonly diagnosed lesions, others being a Schwannoma [1], benign spindle cell lesion [1], angiofibroma [1] and a sebaceous adenoma [1].

Inverted papilloma was the most commonly diagnosed benign tumor diagnosed [4 out of 11 cases, 36.36% of benign tumors], akin to the finding of Garg and Mathur [5 out of 11 cases, 45.46%]<sup>9</sup>, Humayun et al [3 out of 9 cases, 33.3%]<sup>11</sup> Kulkarni et al<sup>15</sup> and Narayanaswamy et al.<sup>16</sup>

Hemangioma constituted 27.27% of the benign tumors in our series, which is higher than Modh et al (19.4%)<sup>2</sup> or Garg et al (18.18%)<sup>3</sup> but less than Bijjaragi et al (61.1% of benign tumors).<sup>1</sup>

Schwannoma in the nasal cavity are rare and we found only two other authors who reported these lesions in their series<sup>2,9</sup>. We were able to demonstrate Antoni A and B areas in the tumor that we reported as a Schwannoma.

The wide variation in the incidence of various benign lesions reported in various series reflects the wide diversity of lesions arising from the native tissues of the nasal cavity and sinuses.

We found only one case of a malignant tumor in our series, which was diagnosed as a squamous cell carcinoma [1.6% of all lesions]. Squamous cell carcinomas are the most commonly diagnosed malignant lesions in several series studying the histopathology of sino - nasal masses<sup>2,7,9,12,13,14</sup>. However the incidence of malignant lesions was higher in other studies [Bijjaragi et al 8%<sup>1</sup>; Garg and Mathur 8%<sup>9</sup>].

### Conclusion:

We present our findings of pathologies diagnosed on histopathological evaluation of nasal mass lesions received during a three year period from January 2014 to December 2016. Our distribution of benign neoplasms and non neoplastic lesions was similar to other studies; however, we had a very small percentage of malignant lesions [1.6%] as compared to other studies. We propose a more detailed prospective study, to include genetic profiling, to establish the reason for this low incidence of malignant lesions in our dependent population.

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**Table 1: Age wise distribution of nasal masses**

Age (years)	Number	Percentage
< 10	01	1.6
11-20	11	17.74
21-30	22	35.48
31-40	08	12.90
41-50	07	11.29
51-60	10	16.12

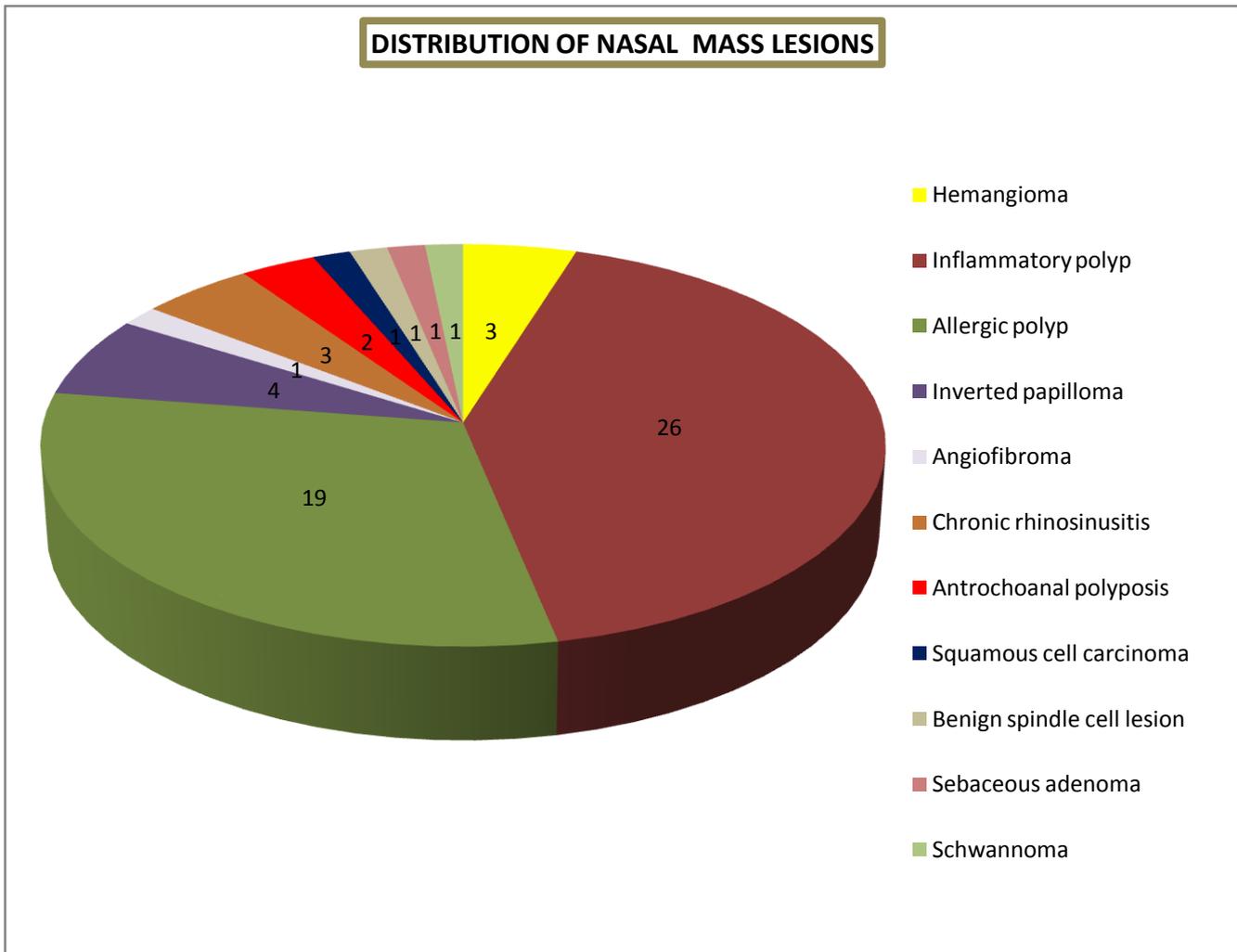
**Table 2: Gender wise distribution of nasal masses**

Type of mass	Male	Female	Total
Non neoplastic	25	25	50
Neoplastic	0	0	0
Benign	10	01	11
Malignant	01	0	01
Total	36	26	62

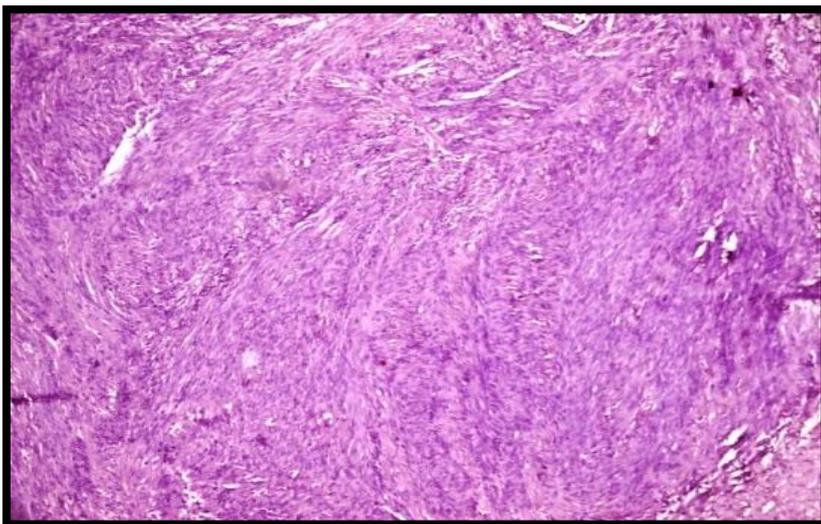
**Table 3: Comparison of present study with other studies**

Study	Non neoplastic lesions (%)	Neoplastic lesions (%)
Modh et al	67.90	32.09
Zafar et al	60	40
Dafale et al	88.57	11.42
Dinesh Garg et al	73.6	26.4
Kalpana Kumari et al	66	34
Present study	80.64	19.35

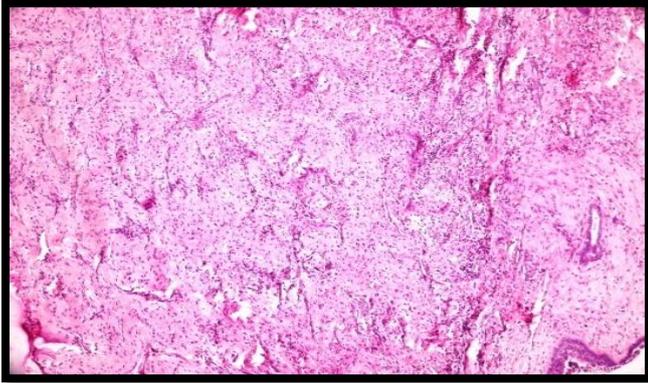
**FIGURE 1**



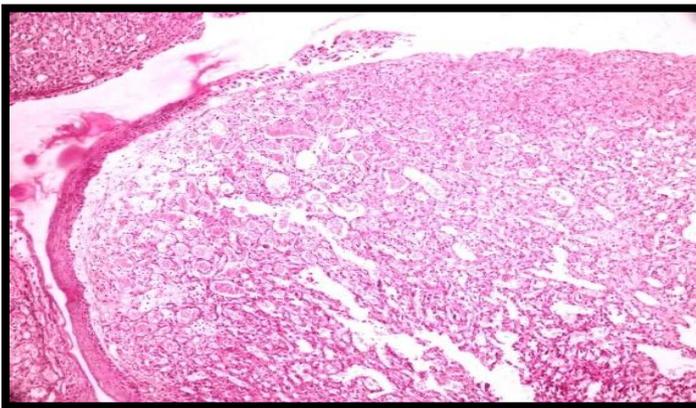
**Figure 2: photomicrograph of Schwannoma showing Antoni A areas with verrocaay body formation (H & E 100X)**



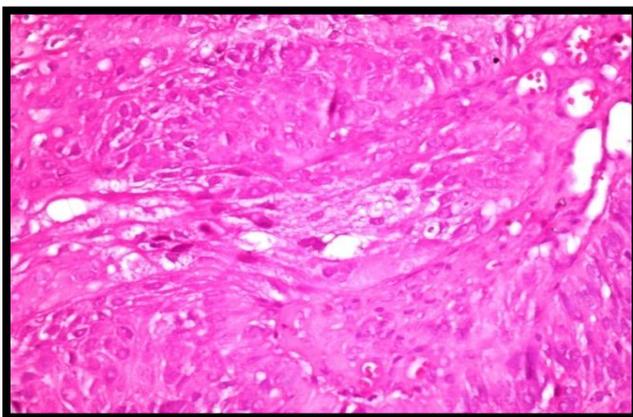
**Figure 3 - Photomicrograph of Angiofibroma showing thin walled capillaries surrounded by fibrous tissue (H&E, 100X)**



**Figure 4 - Photomicrograph of Hemangioma showing blood filled capillaries below respiratory epithelium (H&E, 100X)**



**Figure 5: Photomicrograph of Squamous cell carcinoma showing atypical squamous cells (H&E, 400X)**



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