

ORIGINAL ARTICLE

Histopathological Analysis of Lesion of Nasal Cavity, Paranasal Sinus and Nasopharynx- A Clinical Study

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Background: A variety of non-neoplastic and neoplastic lesions in the nasal cavity, paranasal sinuses and nasopharynx are commonly seen. Polypoidal mass in the nose is a very common lesion encountered in clinical practice. The present study was conducted to histopathological pattern of masses of nasal cavity, paranasal sinus and nasopharynx. **Materials & Methods:** It included 115 specimens of both gender of nasal cavity, paranasal sinus and nasopharynx received in the department. All the specimens were fixed in 10% formal-saline, then processed into paraffin embedded sections and stained with hematoxylin and eosin. **Results:** Out of 115 patients, males were 60 and females were 55. The difference was non- significant (P=1). Of 115 pathologies, 62 were non- neoplastic and 53 were neoplastic. Most common was seen in age group 51-60 years (30) followed by 41-50 years (25), 61-70 years (14) and 21-30 years (13). Benign lesions were 22 and malignant were 31. The difference was non- significant (P>0.05). following masses were found, inflammatory polyp (62), allergic polyp (13), tuberculous granulomatous lesion (5), sinonasal papilloma (12), hemangioma (3), angiofibroma (4), undifferentiated carcinoma (2), squamous cell carcinoma (5), hemangiopericytoma tumour (2), olfactory neuroblastoma (4) and non- hodgkin lymphoma (3). Inflammatory polyp was seen in the most. The difference was significant (P<0.05).

Conclusion: Histopathological examination is simple, reliable and cost effective diagnostic procedure for the detection of various lesions of nasal cavity, nasopharynx and paranasal sinuses. Most commonly occurring lesion was inflammatory polyp.

Key words: Nasal cavity, Nasopharynx, Paranasal sinus

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INTRODUCTION

Malignant tumours of the nasal cavity and paranasal sinuses are relatively rare, accounting for only 0.4% of all new malignant cases. A variety of non-neoplastic and neoplastic lesions in the nasal cavity, paranasal sinuses and nasopharynx are commonly seen. Polypoidal mass in the nose is a very common lesion encountered in clinical practice. It can be an inflammatory polyp, granuloma, tumour, either benign or malignant.¹ Nasal polyps are the most common nasal masses affecting up to four percent of the population and are defined as prolapsed lining of the nasal sinuses,⁵ that extends into nasal cavity, paranasal sinuses and nasopharynx. Nasal polyps most frequently occur in middle-aged males. Malignant tumours in the nasal cavity and paranasal sinuses account for less than 1% of all carcinomas and for about 3% of the neoplasms of the head and neck regions. Primary

nasal malignancies consist of 0.2%-0.8% of all the malignant tumours and 3.6% of the malignant upper airway tumours.²

Symptoms include trouble breathing through the nose, loss of smell, decreased taste, post nasal drip, and a runny nose. The growths are sac-like, movable, and nontender. They typically occur in both nostrils in those who are affected.^[1] Face pain may occasionally occur. Complications may include sinusitis. The exact cause is unclear. They occur more commonly among people who have allergies, cystic fibrosis, aspirin sensitivity, or certain infections. They are overgrowths of the mucous membranes. Diagnosis may occur by looking up the nose and a CT scan may be used to help plan treatment.³

The pathogenesis of nasal polyps is unknown. Nasal polyps are most commonly thought to be caused by allergy and rarely by cystic fibrosis although a significant number are

associated with non-allergic adult asthma or no respiratory or allergic trigger that can be demonstrated. Nasal mucosa, particularly in the region of middle meatus becomes oedematous due to collection of extracellular fluid causing polypoidal change. Polyps which are sessile in the beginning become pedunculated due to gravity and excessive sneezing.⁴ The present study was conducted to histopathological pattern of masses of nasal cavity, paranasal sinus and nasopharynx.

MATERIALS & METHODS

This study was conducted in the department of general pathology. It included specimens of nasal cavity, paranasal sinus and nasopharynx received in the department. All the specimens were fixed in 10% formal-saline, then processed into paraffin embedded sections and stained with hematoxylin and eosin. The purpose of the study was explained to the institutional ethical committee. Study was initiated after obtaining ethical clearance. Results were tabulated and subjected to statistical analysis.

RESULTS

Table I Distribution of patients

Total- 115		
Male	Female	P value
60	55	1

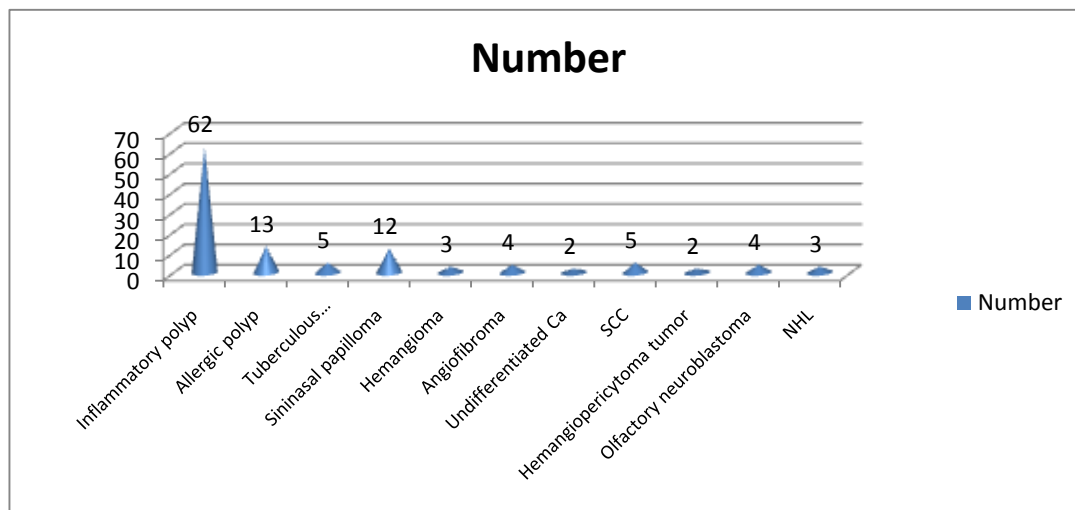
Table I shows that out of 115 patients, males were 60 and females were 55. The difference was non- significant (P=1).

Table II Age distribution of masses

Age group	Non- neoplastic mass	Neoplastic mass		Total
		Benign	Malignant	
<10	2	2	0	4
11-20	8	4	0	12
21-30	7	3	3	13
31-40	6	0	4	10
41-50	15	4	6	25
51-60	18	5	7	30
61-70	4	2	8	14
>70	2	2	3	7
Total	62	22	31	115

Table II shows that out of 115 pathologies, 62 were non- neoplastic and 53 were neo- plastic. Most common was seen in age group 51-60 years (30) followed by 41-50 years (25), 61-70 years (14) and 21-30 years (13). Benign lesions were 22 and malignant were 31. The difference was non- significant (P>0.05).

Graph I Histopathological findings of nasal masses



Graph I shows that following masses were found, inflammatory polyp (62), allergic polyp (13), tuberculous granulomatous lesion (5), sinonasal papilloma (12), hemangioma (3), angiofibroma (4), undifferentiated carcinoma (2), squamous cell carcinoma (5), hemangiopericytoma tumour (2), olfactory neuroblastoma (4) and non-hodgkin lymphoma (3). Inflammatory polyp was seen in the most. The difference was significant ($P < 0.05$).

DISCUSSION

Nasal polyps are commonly encountered nasal masses. In early stages, surface of nasal polyp is covered by ciliated columnar epithelium, but later it undergoes metaplastic change to squamous type on atmospheric irritation. Submucosa shows large intercellular spaces filled with serous fluid.⁵ In this study, out of 115 patients, males were 60 and females were 55. We observed that out of 115 pathologies, 62 were non-neoplastic and 53 were neoplastic. Benign lesions were 22 and malignant were 31. Most common was seen in age group 51-60 years followed by 41-50 years, 61-70 years and 21-30 years. This is in agreement with Karki et al.⁶

We found that most commonly encountered lesions were inflammatory polyp, allergic polyp, sinonasal papilloma, squamous cell carcinoma, tuberculous granulomatous lesion, angiofibroma, hemangioma, olfactory neuroblastoma and non-hodgkin lymphoma, undifferentiated carcinoma, hemangiopericytoma tumour. Inflammatory polyp was most commonly occurring lesion. This is similar to Maru AM et al.⁷ There are various diseases associated with polyp formation such as chronic rhinosinusitis, aspirin-exacerbated respiratory disease (AERD), cystic fibrosis, allergic fungal sinusitis, Kartagener's syndrome, Young's syndrome, Eosinophilic granulomatosis with polyangiitis and nasal mastocytosis.⁸

There are two criteria (major and minor) that must be met. The former in the form of facial pressure, nasal blockage, decreased smell and the latter in the form of fever, headache, cough and dental pain. On a CT scan, a nasal polyp generally has an attenuation of 10–18 Hounsfield units, but this is similar to that of mucus. Yet, nasal polyps may have calcification.⁹ Many different histological tumour types are found in the nasal cavity and the paranasal sinuses. The proportion of squamous cell carcinoma is less than what is seen in other sites in the head and neck region.¹⁰ The location of the nasal cavity and the paranasal sinuses make them extremely close to vital structures. Sinonasal malignancies (SNM) can grow to considerable size before presentation, and aggressive therapy may be needed in areas close to the skull base, orbits, cranial nerves, and vital blood vessels. Sinonasal malignancies (SNM) can be lesions of immense importance.

They produce few if any signs while the tumor is in its early stages. This problem is exacerbated by the fact that the initial manifestations (eg, unilateral epistaxis, nasal obstruction) mimic signs and symptoms of many common but less serious conditions.¹¹

A large number of diseases affecting these structures are due, to many of the specialized tissues, each with its own aberrations that exist in the region. The presenting features and symptomatology and advanced imaging technique help to reach a presumptive diagnosis but histopathological examination remains the mainstay of definitive diagnosis. Thus careful histological workup is essential for a correct diagnosis and timely intervention.¹²

CONCLUSION

Histopathological examination is simple, reliable and cost effective diagnostic procedure for the detection of various lesions of nasal cavity, nasopharynx and paranasal sinuses. Most commonly occurring lesion was inflammatory polyp.

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