

**ORIGINAL RESEARCH**

# Lesions of nasal cavity- A Histopathological study

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**ABSTRACT**

**Background:** Nasal cavity lesions are rather prevalent. It could be either non-neoplastic or neoplastic. The present study was histopathological pattern of lesions of nasal cavity. **Materials & Methods:** 78 tissue specimens of nasal cavity of either gender received from ENT department were fixed in 10% formalin. Following staining with hematoxylin and eosin, drying, and mounting in DPX, the slices were prepared for microscopy in general pathology department. **Results:** The age group 20-40 years had 11 males and 15 females, 30-40 years had 16 males and 18 females, 40-50 years had 5 males and 6 females and >50 years had 3 males and 4 females. The difference was non-significant ( $P > 0.05$ ). Non-neoplastic nasal lesions were 48 such as polyps in 43, rhinophyma in 3 and mucormycosis in 2 cases. Neoplastic benign lesions were angiofibroma in 2, ossifying fibroma in 8, inverted papilloma was seen in 12, hemangioma in 5. Out of 3 neoplastic malignant lesions, SCC was seen in 2 and BCC in 3 cases. The difference was significant ( $P < 0.05$ ). **Conclusion:** The common nasal lesions age group 30-40 years had maximum nasal cavity lesions. Nasal polyp constituted maximum cases.

**Key words:** Nasal cavity, Neoplastic, polyp

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**INTRODUCTION**

Nasal cavity lesions are rather prevalent. It could be either non-neoplastic or neoplastic. Nasal cavity diseases include tumors, inflammations of the nasal mucosa, and bacterial, fungal, and viral infections.<sup>1</sup> Common lesions affecting the nasal cavity include broken nose, rhinitis, nasal polyps, common colds, and deviated nasal septum.<sup>2,3</sup> The most frequent reason for nasal blockage is nasal polyps. Infections, asthma, and allergies are the most frequent causes. In clinical practice, polypoidal masses in the nose are a very prevalent lesion.<sup>4</sup> It could be caused by the most common type of simple nasal polyp or polypoidal lesions caused by a range of other pathologic entities, such as malignant polypoid neoplasms or infectious illnesses. Nasal tumors are typically uncommon. Malignant tumors account for 0.2% to 0.8% of total malignancies and only 3% of all malignant tumors of upper aerodigestive tract.<sup>5</sup> Nasal cavity masses are a diverse group of lesions with a wide range of histological characteristics. Many of these lesions are classified as nasal polyps since it is extremely difficult to distinguish between non-neoplastic and neoplastic

ones clinically. Clinicians ignore it because they cannot distinguish between benign and malignant conditions, or neoplastic and non-neoplastic conditions, which delays diagnosis and therapy.<sup>6</sup> The present study was histopathological pattern of lesions of nasal cavity.

**MATERIALS & METHODS**

This present study consisted of 78 tissue specimens of nasal cavity of either gender. All patients gave their written consent to participate in the study.

Demographic data such as name, age, gender etc. was recorded. After being fixed in 10% formalin, all tissue samples were stored for the night. Following three changes of six hours each of graded alcohol for tissue dehydration, two changes of one hour each of xylene were used for clearing. Blocks were made, 5 $\mu$  pieces were cut, and impregnation and paraffin embedding were completed after that. Following staining with hematoxylin and eosin, drying, and mounting in DPX, the slices were prepared for microscopy. Results were tabulated and subjected to statistical analysis. P value less than 0.05 was considered significant.

**RESULTS**

**Table I Distribution of patients**

Age group (Years)	Male (35)	Female (43)	P value
20-30	11	15	0.41
30-40	16	18	
40-50	5	6	
>50	3	4	

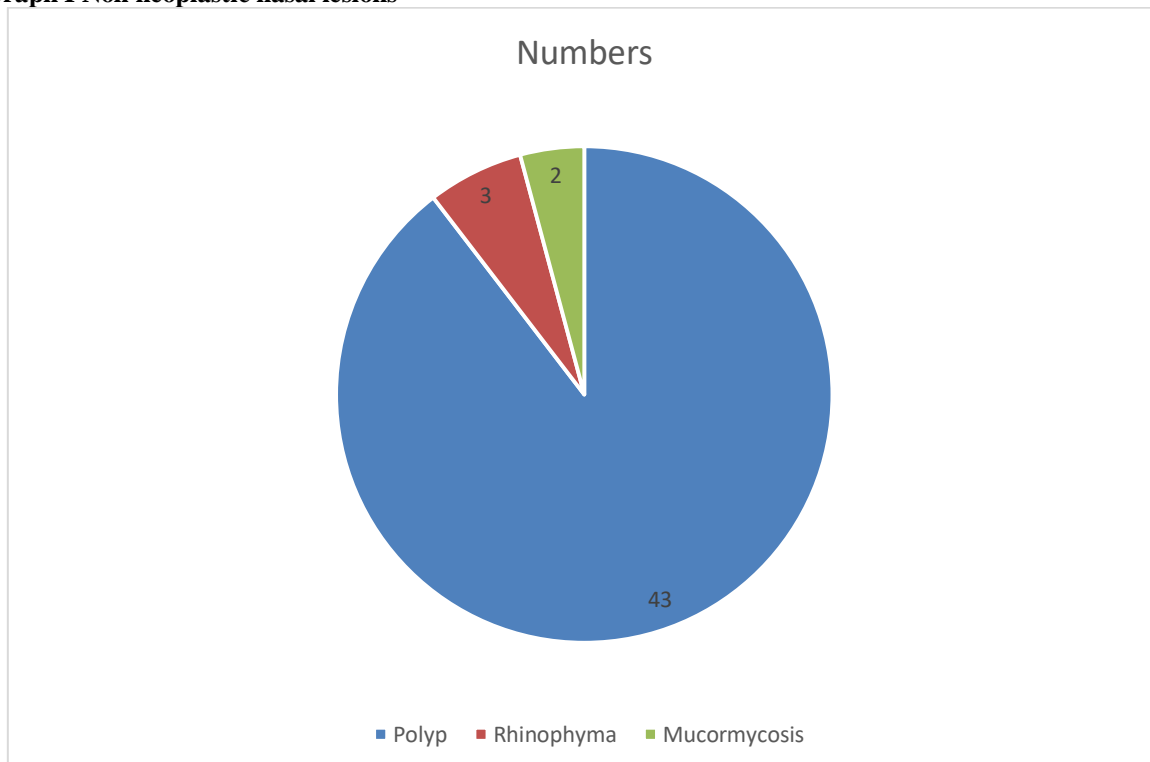
Table I shows that age group 20-40 years had 11 males and 15 females, 30-40 years had 16 males and 18 females, 40-50 years had 5 males and 6 females and >50 years had 3 males and 4 females. The difference was non-significant (P> 0.05).

**Table II Assessment of histopathological diagnosis**

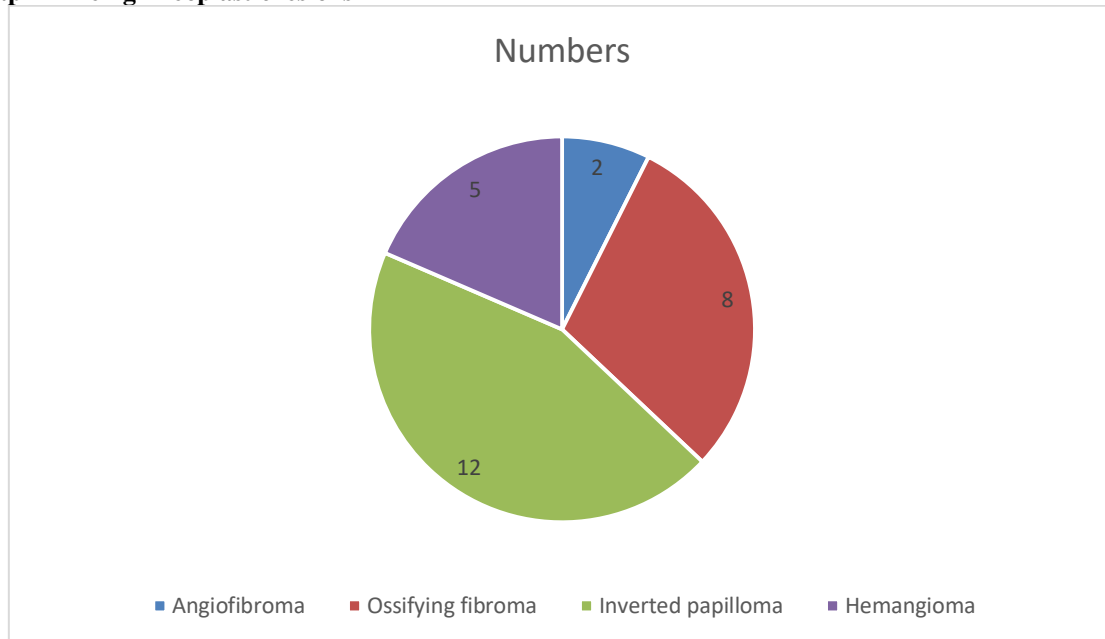
Parameters	Variables	Numbers	P value
Non neoplastic (48)	Polyp	43	0.032
	Rhinophyma	3	
	Mucormycosis	2	
Benign lesions (27)	Angiofibroma	2	
	Ossifying fibroma	8	
	Inverted papilloma	12	
	Hemangioma	5	
Malignant lesions (3)	SCC	2	
	BCC	3	

Table II, graph I, II, III shows that non neoplastic nasal lesions were 48 such as polyps in 43, rhinophyma in 3 and mucormycosis in 2 cases. Neoplastic benign lesions were angiofibroma in 2, ossifying fibroma in 8, inverted papilloma was seen in 12, hemangioma in 5. Out of 3 neoplastic malignant lesions, SCC was seen in 2 and BCC in 3 cases. The difference was significant (P< 0.05).

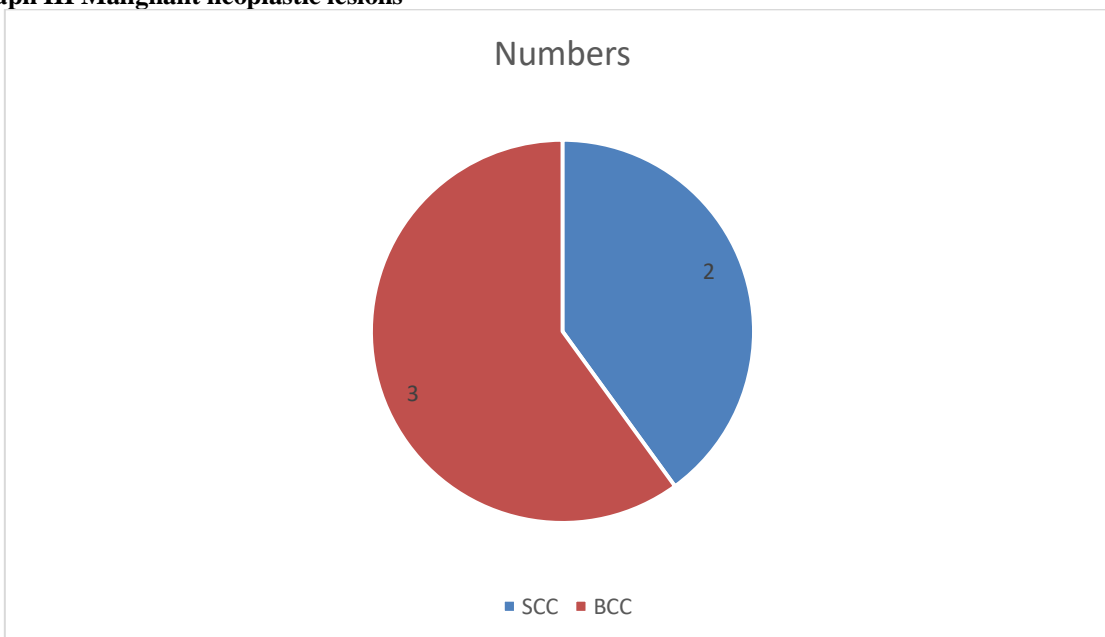
**Graph I Non neoplastic nasal lesions**



**Graph II Benign neoplastic lesions**



**Graph III Malignant neoplastic lesions**



**DISCUSSION**

Lesions of the nasal cavity can encompass a wide range of abnormalities, including benign growths, inflammatory conditions, infectious processes, and malignant tumors.<sup>7,8</sup> Benign lesions are non-cancerous growths that may include nasal polyps, nasal septal deviations, benign tumors (such as papillomas or hemangiomas), and inflammatory conditions like rhinitis or sinusitis.<sup>9,10</sup> Infectious lesions are caused by various pathogens, including bacteria, viruses, and fungi. Examples include acute or chronic sinusitis, nasal vestibulitis (infection of the nasal vestibule), and fungal infections like allergic fungal sinusitis or invasive fungal sinusitis. Malignant lesions are cancerous growths that may arise from the lining of

the nasal cavity or adjacent structures.<sup>11</sup> Common types of malignant nasal cavity lesions include squamous cell carcinoma, adenocarcinoma, adenoid cystic carcinoma, and esthesioneuroblastoma (olfactory neuroblastoma).<sup>12,13</sup> The present study was histopathological pattern of lesions of nasal cavity. We found that the age group 20-40 years had 11 males and 15 females, 30-40 years had 16 males and 18 females, 40-50 years had 5 males and 6 females and >50 years had 3 males and 4 females. Kulkarni et al<sup>14</sup> found that the formalin fixed specimens were received with complete clinical and radiological features. Routine gross examination and required number of sections were taken and stained with hematoxylin and eosin. Periodic acid Schiffs and reticulin stains were

used wherever necessary. The incidence of lesions in nasal cavity (NC) and PNS was 16.71 cases per year, non-neoplastic lesions constituted 86% of these cases and their incidence was 14.42% and neoplastic lesions constituted 12%. All the cases were carefully examined histopathologically and it was found that the region was affected by variety of lesions. Among 117 cases, 101 were non-neoplastic and 16 were neoplastic. The commonest site was NC, followed by PNS. They occur commonly in second and third decades with predominance in males. Amongst the non-inflammatory lesion, nasal polyp is the commonest lesion followed by rhinoscleroma and rhinosporidiosis. The common age group is second and third decades, with male predominance. Amongst benign neoplastic lesions capillary hemangioma was common followed by inverted papilloma. The common age group is second and third decades, with male predominance. Malignant lesions were comparatively less to that of benign lesions.

We observed that non- neoplastic nasal lesions were 48 such as polyps in 43, rhinophyma in 3 and mucormycosis in 2 cases. Neoplastic benign lesions were angiofibroma in 2, ossifying fibroma in 8, inverted papilloma was seen in 12, hemangioma in 5. Out of 3 neoplastic malignant lesions, SCC was seen in 2 and BCC in 3 cases. Korata et al.<sup>151</sup> assessed incidence of various nasal lesions and compared these lesions in relation to demographic data of the patients. The specimens were fixed in 10% formalin, processed and then stained with haematoxylin and eosin. The present study was conducted on a total of 100 cases. Amongst these, 61 were males and 39 were females. An overall male predominance was noted. Maximum numbers of cases were diagnosed in the age group 31-40 years. Non neoplastic constituted N=86 cases (86%), neoplastic benign lesions constituting N=10 cases (10%) and malignant masses constituted N=04 cases (04%) of the total lesions in the present study. Inflammatory polyps were the most commonly diagnosed cases and few fungal rhinosinusitis in postCOVID-19 patients were noted in the present study. Inverted papillomas were predominant benign neoplastic lesions whereas nasopharyngeal carcinomas were noted as predominant malignant lesions.

## CONCLUSION

Authors found that common nasal lesions age group 30-40 years had maximum nasal cavity lesions. Nasal polyp constituted maximum cases.

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