

“HISTOPATHOLOGICAL SPECTRUM OF NON NEOPLASTIC AND NEOPLASTIC LESIONS OF NASAL CAVITY AND PARANASAL SINUS: AN OBSERVATIONAL STUDY IN WESTERN RAJASTHAN

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ABSTRACT-

OBJECTIVE- To study histopathological patterns of nasal cavity and paranasal sinuses lesions, to categorize them and to correlate them with age and gender and sociodemographic data.

METHODOLOGY: Hospital based observational study was conducted in Department of Pathology ,Dr. S.N. Medical College, Jodhpur on Paraffin block of cases that fulfilled the inclusion criteria. Patient name, age, gender, registration number, path number, type of biopsy specimen and its gross feature was noted. The specimens were received in 10% formalin along with requisition form which also included the clinical data. The material was processed as routine histopathological examination, special stains were done wherever required.

RESULTS :-Total 74 cases were analyzed, and lesions were classified as neoplastic and non neoplastic (inflammatory) and neoplastic were further classified as benign and malignant. Tumor were of nasal cavity and paranasal sinus were classified according to WHO classification and observation compared with other studies. . Nasal cavity(61.18%) was more effected by non neoplastic and neoplastic lesions than paranasal sinus (38.82%), Nasal obstruction was the most common presenting symptoms followed by nasal masses. 71.19% of the cases showed a unilateral presentation as the most common side. Most common non neoplastic lesion was nasal polyp with 43 cases which includes 95.65% of all nasal masses. Nasal polyps were most common in the third decade of life and showed an M:F ratio of 1:1.03. Allergic polyp were much more common then non allergic polyp. The other non-neoplastic lesions also observed were Rhinoscleroma, Mucormycosis, tuberculosis, chronic rhinitis and chronic sinusitis in population. Most common benign neoplastic lesions were haemangioma with 4 cases which constituted 30.77% of all benign neoplastic lesions and showed a high incidence in the sixth decade of life with female predominance. . Most common malignant nasal mass is squamous cell carcinoma constituting 53.33% of all lesions. Out of 8 cases males were more commonly effected by malignant lesions in the fifth and sixth decade of life. Second most common malignant lesion observed was basal cell carcinoma it was 40% of all malignant lesions commonly nodular type followed by nasopharyngeal carcinoma (6.67%) more common in fifth and sixth decade of life. **DISCUSSION;-** Most of the nasal cavity lesions present with non specific and overlapping symptoms. From the clinical and macroscopic examination it is difficult to comment on the nature of the lesion. A careful histopathological examination is needed for a definitive diagnosis. Sinusal masses have various differential

diagnosis. Malignant lesions should be distinguished from non malignant lesions. The objectives of this study was to study the histopathological patterns, proportion of various lesions in the nasal cavity and paranasal sinuses and to correlate histomorphological features with their clinical features **CONCLUSION** :-From this study it is quite evident that masses in the nasal cavity and paranasal sinuses form a complex and wide spectrum of lesions ranging from non-neoplastic lesions to benign and malignant neoplastic lesions. Non neoplastic lesions were more common than neoplastic lesions Sinonasal polyps were the most common lesions in the present study ,the age incidence ranges from 1st decade to 7th decade. There was slight female preponderance. Maximum number of non-neoplastic lesions were found in the third decade of life, benign and malignant neoplastic lesions were found in the fifth decade of life. Histopathological examination is very important in diagnosing the lesions. All the cases were classified according to WHO classification 2017. The age of incidence of nasal masses ranged from seven to eighty with an almost equal sex predilection and overlapping presentation. This may cause a diagnostic dilemma for the accurate and timely diagnosis and intervention which signifies the need of a more accurate diagnostic method.Features like nasal bone involvement, necrosis and epistaxis suggestive of malignancy were also seen in fungal infections like Mucormycosis and Aspergillosis. There were specimens with dual lesions which was almost impossible to diagnosed clinically.

KEYWORDS-Histopathological study of non neoplastic, neoplastic lesions of nasal cavity and paranasal sinus

INTRODUCTION

We perceive our environment through our sensory receptors like nose, ‘Sinonasal tract’ is a collective term used for nasal cavity and paranasal sinuses. The main functions of the sinonasal tract are filtering and humidifying inhaled air. The nasal cavity also has specific olfactory receptors for airborne odorant molecules. Nasal cavity comprises of anterior and posterior part, paranasal sinuses and nasopharynx. These functions lead to exposure of various allergens, pathogens, chemical and physical irritants and other environmental influences. As a result of these multifaceted exposures, various inflammatory conditions, infections and neoplasms can occur in the sinonasal tract. The presenting symptomatology of all tumors is similar and using advanced imaging, computed tomography, and/or magnetic resonance imaging, a presumptive diagnosis is often made. However, a careful histopathological examination is necessary to decide the nature of any particular lesion.

MATERIAL AND METHODS

Present study will be conducted in the Department of Pathology with Department of ENT, Dr. S. N. Medical College and its associated group of hospitals, Jodhpur. patient attending outpatient department(opd) with complain of nasal mass in nose ,nasal blockage ,or nasal discharge were

selected from January 2020 and will be select till January 2022 for this study. All received nasal biopsies in department of pathology from E.N.T department during the period of Jan 2020 to Jan 2022 taken for study purpose. All samples of nasal and paranasal sinus collected through Departments of ENT and Surgery from Operation Theatre and transported to Department of Pathology, in 10% Formalin.

RESULTS -TABLE 1: HISTOPATHOLOGICAL FINDINGS OF BENIGN NEOPLASTIC LESIONS -

| Histopathological diagnosis | No. of benign neoplastic patients | Percentage |
|-----------------------------|-----------------------------------|------------|
| Cholesteatoma | 1 | 7.69 |
| Angiofibroma | 2 | 15.38 |
| Haemangioma | 4 | 30.77 |
| Fibromyoma | 1 | 7.69 |
| Lymphangioma | 1 | 7.69 |
| Nasopharyngeal Angiofibroma | 1 | 7.69 |
| Schawannoma | 2 | 15.38 |
| Sino nasal Papilloma | 1 | 7.69 |
| Total | 13 | 100.00 |

Above table depicts that Haemangioma is most common benign lesion(30.77%) followed by Angiofibroma(23.07%) and Schawannoma(15.38%).

TABLE 2 :- HISTOPATHOLOGICAL FINDINGS OF NON NEOPLASTIC LESIONS-

| Histopathological diagnosis | No. of non neoplastic patients | Percentage |
|-----------------------------|--------------------------------|------------|
| Allergic polyposis | 9 | 21.74 |
| Antrochonal polyp | 2 | 4.35 |
| Allergic Inflammatroy polyp | 31 | 67.39 |
| allergic Rhinitis | 1 | 2.17 |
| Mucormycosis | 1 | 2.17 |
| Granulation tissue | 1 | 2.17 |
| Rhinoscleroma | 1 | 2.17 |
| Total | 46 | 100.00 |

Table no. 2 shows **polyps** (inflammatory or non-inflammatory) are most common non neoplastic lesions (93.48%) in our study followed by other non neoplastic lesions.

TABLE 3 :-HISTOPATHOLOGICAL FINDINGS OF MALIGNANT NEOPLASTIC LESIONS -

| Histopathological diagnosis | No. of malignant neoplastic patients | Percentage |
|-----------------------------|--------------------------------------|------------|
| Basal cell carcinoma | 6 | 40.00 |
| Squamous cell carcinoma | 8 | 53.33 |
| Nasopharyngeal carcinoma | 1 | 6.67 |
| Total | 15 | 100.00 |

Table no. 3 shows Squamous cell carcinoma is most common malignant lesion(53.33%) followed by basal cell carcinoma (40.00%) and nasopharyngeal carcinoma (06.67%).

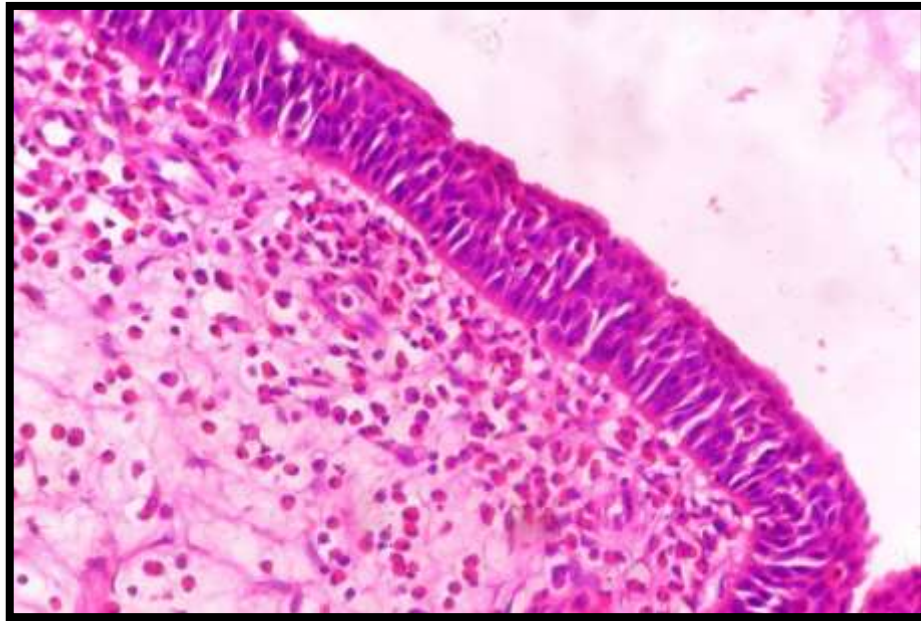


Figure 1: -Allergic Nasal polyp showing predominance of eosinophils (H&E, 40x)

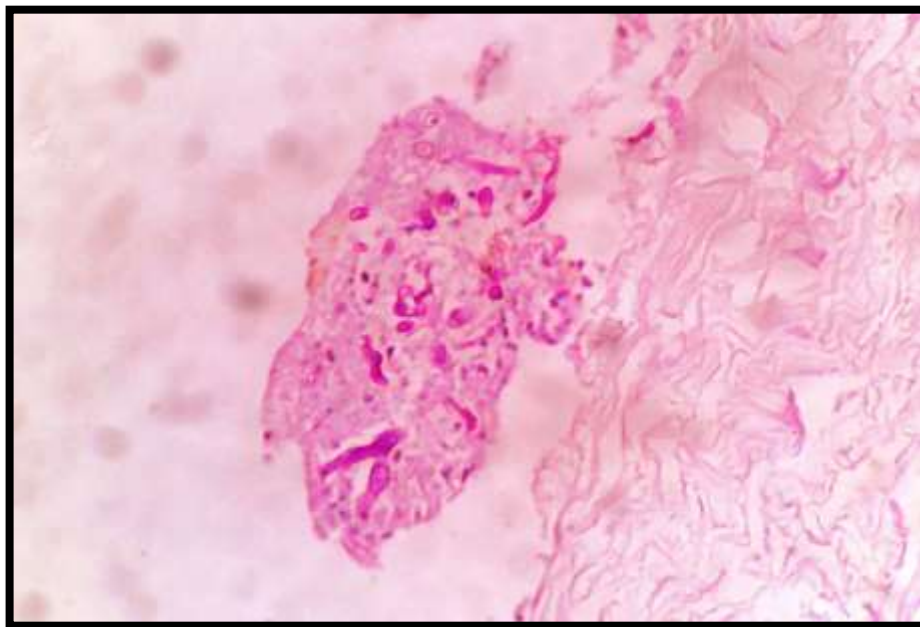


Figure 2:- Mucormycosis showing broad hyphae (PAS, 40x)

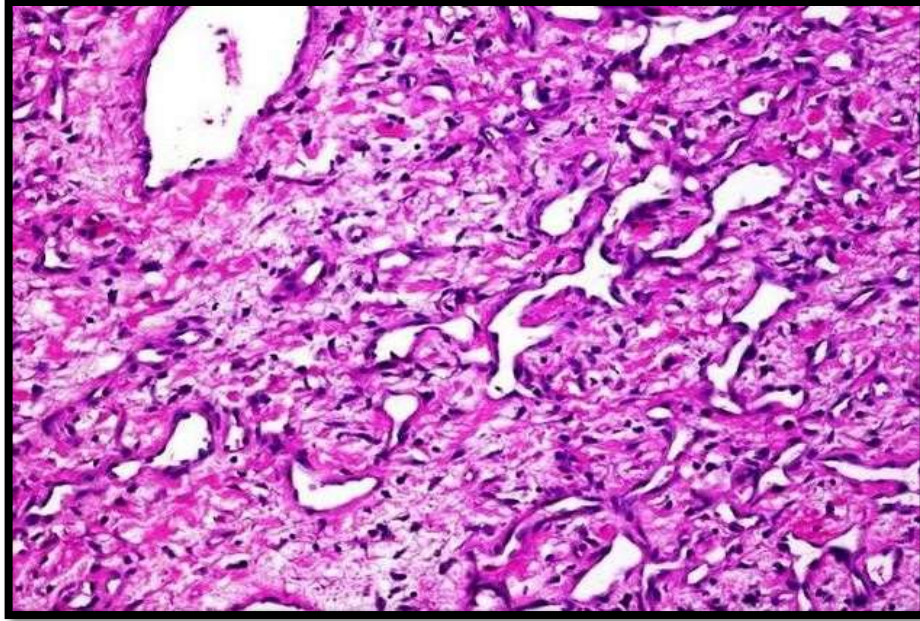


Figure 3:- Angiofibroma showing variable sized large irregular vessels and a fibrous connective tissue myxoid stroma (H&E, 40x)

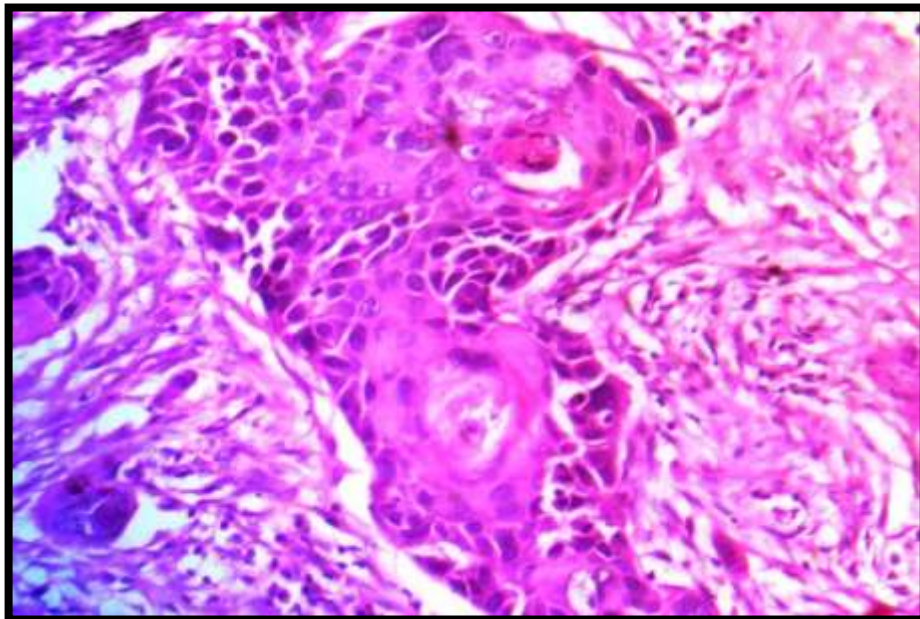


Figure 4:- Keratinized squamous cell carcinoma showing nests of Atypical squamous cells

DISCUSSION - Most of the nasal cavity lesions present with non specific and overlapping symptoms. From the clinical and macroscopic examination it is difficult to comment on the nature of the lesion. A careful histopathological examination is needed for a definitive diagnosis. Sinusal masses have various differential diagnosis. Malignant lesions should be distinguished from non malignant lesions. The objectives of this study was to study the histopathological patterns, proportion of various lesions in the nasal cavity and paranasal sinuses and to correlate histomorphological features with their clinical features.

SUMMARY

The Present study was a three years study form June 2020 to May 2023 including all the lesions presenting in the nasal cavity and paranasal sinuses sent to the department of pathology, S.N medical college Jodhpur. This included 74 cases.

All the cases were classified according to WHO classification 2017

Non neoplastic lesions were the most common with 46 cases which included 62.16% of all nasal masses followed by 13 cases of benign neoplastic lesions which included 17.56% of all nasal masses and 15 cases of malignant neoplastic lesions which included 20.27% of all nasal masses. Age incidence ranges from 1st decade to 9th decade with an almost equal sex predilection and an M:F ratio of 1:1.02. Nasal cavity (61.18%) was more effected by non neoplastic and neoplastic lesions than paranasal sinus (38.82%) with headache and pain comprising as most commonly observed clinical manifestation. Nasal obstruction was the most common presenting symptoms followed by nasal masses. 71.19% of the cases showed a unilateral presentation as the most common side.

Most common non neoplastic lesion was nasal polyp with 43 cases which includes 95.65% of all nasal masses. Nasal polyps were most common in the third decade of life and showed an M:F ratio of 1:1.03. Allergic polyp were much more common then non allergic polyp. The other non-neoplastic lesions also observed were Rhinoscleroma, Mucormycosis, tuberculosis, chronic rhinitis and chronic sinusitis in population. Most common benign neoplastic lesions were haemangioma with 4 cases which constituted 30.77% of all benign neoplastic lesions and showed a high incidence in the sixth decade of life with female predominance. . Most common malignant nasal mass is squamous cell carcinoma constituting 53.33% of all lesions. Out of 8

cases males were more commonly effected by malignant lesions in the fifth and sixth decade of life. Second most common malignant lesion observed was basal cell carcinoma it was 40% of all malignant lesions commonly nodular type followed by nasopharyngeal carcinoma (6.67%) more common in fifth and sixth decade of life.

CONCLUSION;- From this study it is quite evident that masses in the nasal cavity and paranasal sinuses form a complex and wide spectrum of lesions ranging from non-neoplastic lesions to benign and malignant neoplastic lesions. Maximum number of non-neoplastic lesions were found in the third decade of life, benign and malignant neoplastic lesions were found in the fifth decade of life. But this was not completely complimenting for an accurate diagnosis because benign and malignant neoplastic conditions such as lobular capillary haemangioma and olfactory neuroblastoma were presented in the second decade of life and nasal polyps also presented in the seventh and eighth decade of life. The age of incidence of nasal masses ranged from seven to eighty with an almost equal sex predilection and overlapping presentation. This may cause a diagnostic dilemma for the accurate and timely diagnosis and intervention which signifies the need of a more accurate diagnostic method. Features like nasal bone involvement, necrosis and epistaxis suggestive of malignancy were also seen in fungal infections like Mucormycosis and Aspergillosis. There were specimens with dual lesions which was almost impossible to diagnosed clinically. Histopathological study was needed to diagnose these cases. The main strength of the study is that it gives the histopathological pattern along with clinical finding of the sinonasal mass. Histopathological examination is very important in diagnosing the lesions. It is the only means of determining the nature of the disease, and differentiate inflammatory from the neoplastic lesions.

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