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Histopathological Spectrum of Nasal Diseases- A Study of 100 cases

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Abstract: *Nose and paranasal sinuses are aptly called air conditioner for lung.Various authors have studied lesions of nose and paranasal sinuses in different aspects.The present study includes 100 cases of nasal cavity and paranasal sinuses presented to Department of Pathology, Government medical college, Patiala from December 2010 to October 2012. In this study of 100 cases, 81 were non-neoplastic and 19 were neoplastic lesions forming a ratio of non-neoplastic to neoplastic lesions as 4.2: I and the ratio of benign neoplastic and malignant lesions as 2.1:1. The incidence of nasal polyps in our study is 81% of all the non-neoplastic lesions of nasal cavity and PNS thus forming the commonest nasal lesion in this study. Allergic polyps were much more common than inflammatory polyps. In the present study, there were 8 males and 3 females forming a ratio of 2.7:1. Out of all neoplastic lesions, inverted papilloma (11 out of 19 cases) was the most frequent, representing 57.90%. Of the 6 malignant tumours, SCC (5 out of 19 cases) was the commonest. One case of sino-nasal adenocarcinoma was diagnosed during the study period. Thus the adenocarcinomas were found to be rare. Thus categorizing the sino-nasal lesions according to histopathological features into various types helps us to know the clinical presentation, treatment, clinical outcome and prognosis of the disease.*

Keywords: *sino-nasal lesions, histopathological spectrum*

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I. Introduction

Nose acts as an interface between the body and the external world[(21).] Diseases of nose can be classified as :

Diseases of external nose such as Cellulitis ,Nasal deformities ,Benign tumours like papilloma, haemangioma, Malignant tumours such as Basal cell carcinoma, Squamous cell carcinoma, Melanoma [(1)]. Salivary gland tumours-Tumours of salivary gland origin occur in the nasal cavity as well as in sinuses ,Neurogenous and related tumours and tumour like conditions. Meningiomas located intracranially may invade the sphenoid or frontal sinuses secondarily. They can also present as nasal or paranasal masses.Astrocytomas and other glial tumours can also extend into the root of the nasal cavity from their initial intracranial location.[(2,3)]Carcinoid tumour has been found in rare cases to present as an intranasal tumour[(4))]Pituitary adenoma can present as a primary lesion of the nasopharynx or nasal cavity, presumably arising from ectopic anterior pituitary like cells.Paragangliomas have been reported both intranasally and in the nasopharynx. [(5)].Malignant lymphoma can present initially as mass in the sino-nasal region or nasopharynx[(6,7)]Nearly all cases are of non Hodgkin type and the large majority fall into one of the three categories: 1) Natural killer/T cell type 2) B cell type 3) Peripheral T cell type.[(8))]

Plasmacytoma arising in the nasal cavity and nasopharynx may present primarily in the nose as a soft bleeding mass. Microscopic examination shows a monomorphic infiltration by immature plasma cells.[(9-12))].Hodgkins lymphoma presenting as a primary disease in this region is exceptional, but isolated cases of this occurrence have been reported. [(13)].Pseudolymphoma may present as a polypoid intranasal mass. [(14)]

Granulomatous diseases of nose[(15))]**:**Rhinoscleroma,syphilis,Leprosy,Tuberculosis, Rhinosporodiosis: Aspergillosis, Mucormycosis: Wegenersgranulomatosis: True nasal polyps are subdivided into allergic nasal polyps and inflammatory nasal polyps.[(16))]

Neoplasms of nasal cavity:

- Benign – Squamous papilloma, inverted papilloma, pleomorphic adenoma, schwannoma and meningioma, haemangioma, chondroma, angiofibroma, intranasal meningoencephalocele, gliomas and nasal dermoid.
- Malignant–Carcinoma of nasal cavity, malignant melanoma, haemangiopericytoma, olfactory neuroblastoma, lymphoma and plasmacytoma[(1)]

Acute sinusitis is generally a complication of acute or allergic rhinitis and rarely secondary to dental sepsis.Mucocele is filling up of the sinus with mucus while empyema of the sinus occurs due to collection of pus.

II. Material And Method

The material included resected and biopsies specimen of the nasal lesions, submitted to Department of Pathology, Govt. Medical College Patiala. This study included all the age groups. Multiple tissues pieces from different areas of the received resected specimen were taken and processed. In most of the cases, routine haematoxylin and eosin stained sections were prepared and studied. Special stains like Periodic Acid Schiff were used wherever necessary.

OBSERVATIONS

TABLE 1: INCIDENCE OF NEOPLASTIC AND NON-NEOPLASTIC LESIONS

TYPE NO.	NO.
NON-NEOPLASTIC LESIONS	81(81%)
NEOPLASTIC LESIONS – BENIGN	13(13%)
NEOPLASTIC LESIONS – MALIGNANT	06(6%)
TOTAL	**100**

TABLE 2: SEX DISTRIBUTION OF NON-NEOPLASTIC LESIONS

SEX	NO.
MALE	51(62.96%)
FEMALE	30(37.04%)
TOTAL	**81**

TABLE 3: AGE DISTRIBUTION OF NON-NEOPLASTIC LESIONS

AGE GROUP (YEARS)	NO.
≤ 10	10(12.35%)
11-20	20(24.69%)
21-30	30(37.04%)
31-40	15(18.52%)
41-50	5(6.17%)
51-60	1(1.23%)
≥ 61	-
TOTAL	**81**

TABLE 4: SITE OF NON-NEOPLASTIC LESIONS

SITE	NO.
NASAL CAVITY	46(59.79%)
PARANASAL SINUSES	35(43.21%)
TOTAL	**81**

TABLE 5: HISTOLOGICAL DIAGNOSIS OF NON-NEOPLASTIC LESIONS

HISTOLOGICAL TYPE	NO.
Allergic polyps	60(74.08%)
Inflammatory polyps	21(25.92%)
Total	**81**

TABLE 6: SEX DISTRIBUTION OF BENIGN NEOPLASTIC LESIONS

SEX	NO.
MALE	8(61.54%)
FEMALE	5(38.46%)
TOTAL	**13**

TABLE 7: AGE DISTRIBUTION OF BENIGN NEOPLASTIC LESIONS

AGE GROUP (YEARS)	NO.
≤ 10	-
11-20	-
21-30	-
31-40	-
41-50	1(7.69%)
51-60	12(92.31%)
≥ 61	-
TOTAL	**13**

TABLE 8: SITE OF BENIGN NEOPLASTIC LESIONS

SITE	NO.
NASAL CAVITY	13(100%)
PARANASAL SINUSES	0
TOTAL	**13**

TABLE 9: HISTOLOGICAL DIAGNOSES OF BENIGN NEOPLASTIC LESIONS

HISTOLOGICAL TYPE	NO.
INVERTED PAPILLOMA	11(84.62%)
HEMANGIOMA	1(7.69%)
NEUROFIBROMA	1(7.69%)
TOTAL	**13**

TABLE 10: SEX DISTRIBUTION OF MALIGNANT LESIONS

SEX	NO.
MALE	5(83.33%)
FEMALE	1(16.67%)
TOTAL	**6**

TABLE 11: AGE DISTRIBUTION OF MALIGNANT LESIONS

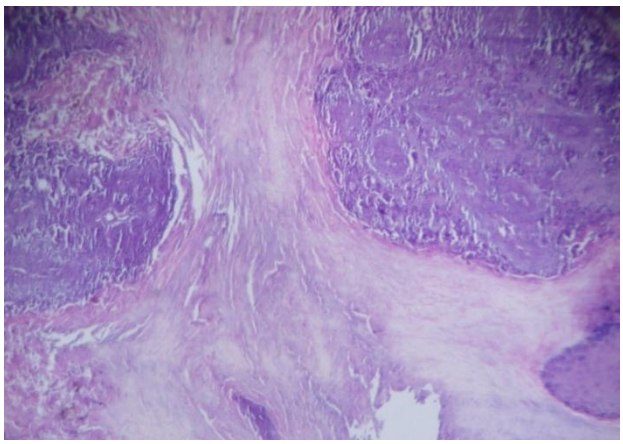
AGE GROUP (YEARS)	NO.
≤ 10	-
11-20	-
21-30	-
31-40	-
41-50	2(33.33%)
51-60	4(66.67%)
≥ 61	-
TOTAL	**6**

TABLE 12: SITE OF MALIGNANT LESIONS

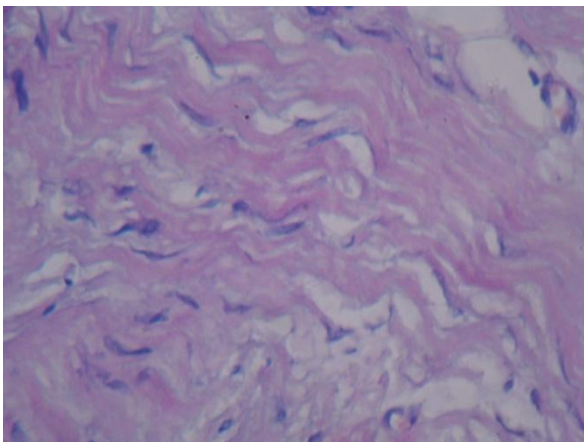
SITE	NO.
NASAL CAVITY	1(16.67%)
PARANASAL SINUSES	5(83.33%)
TOTAL	**6**

TABLE 13: HISTOLOGICAL DIAGNOSES OF MALIGNANT LESIONS

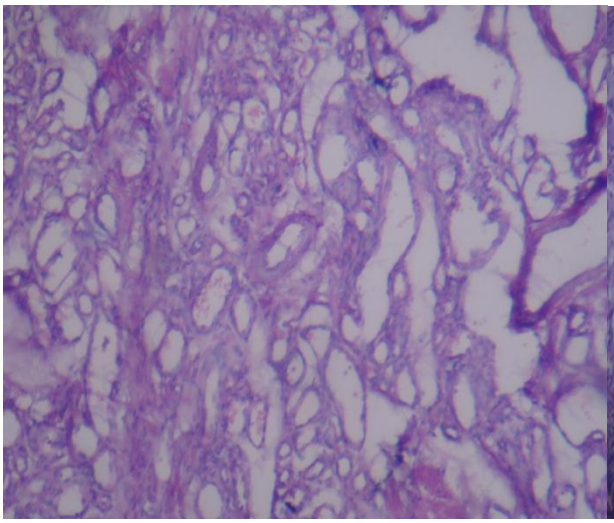
HISTOLOGICAL DIAGNOSIS	NO.
SQUAMOUS CELL CARCINOMA	5(83.33%)
ADENOCARCINOMA	1(16.67%)
TOTAL	**6**



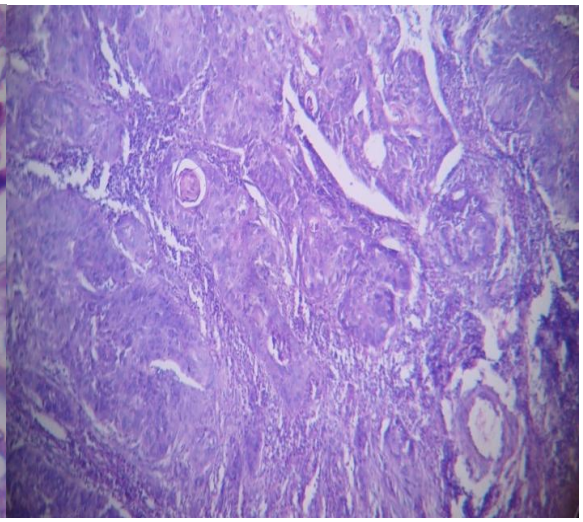
Photomicrograph of Inverted papilloma (H&E X400)



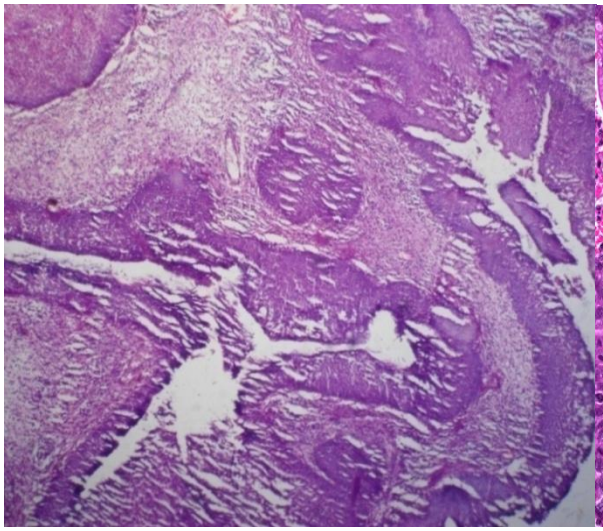
Photomicrograph of Neurofibroma (H&E x400)



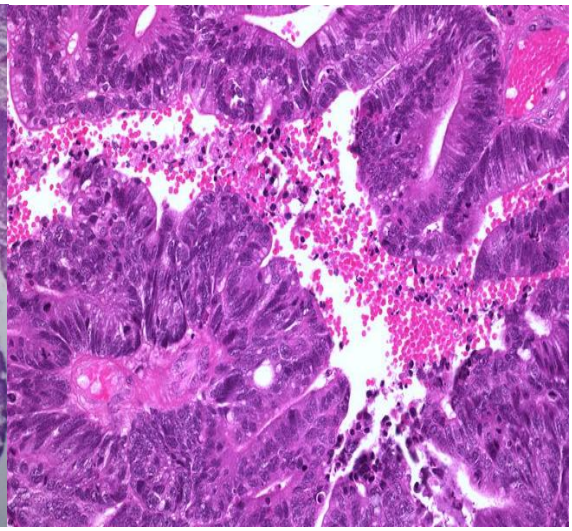
Photomicrograph of Hemangioma (H&E x100)



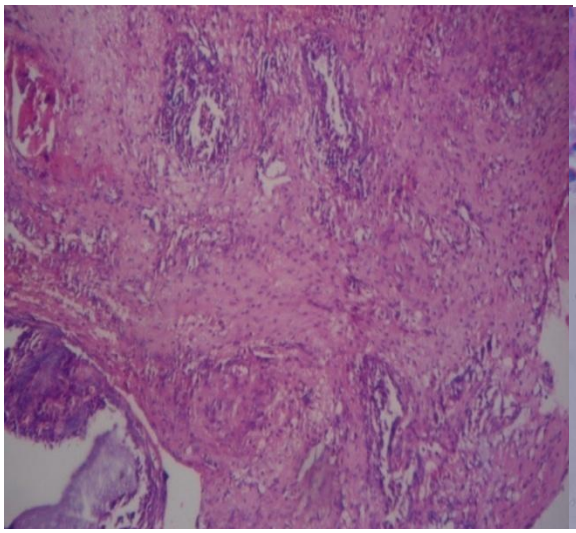
Photomicrograph Squamous cell CA(well)



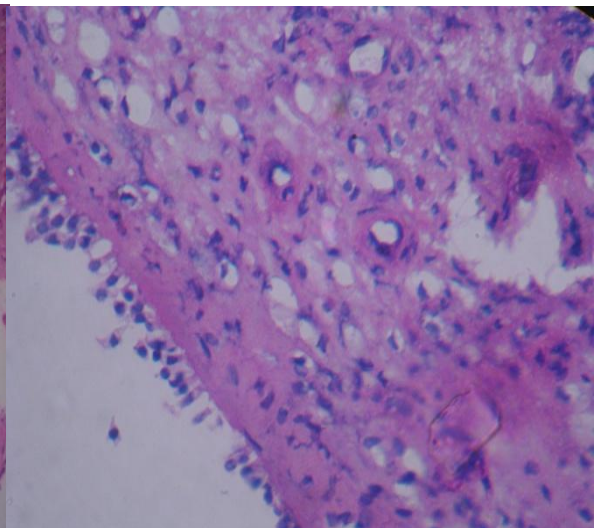
Photomicrograph of inflammatory polyp (H&E x40)



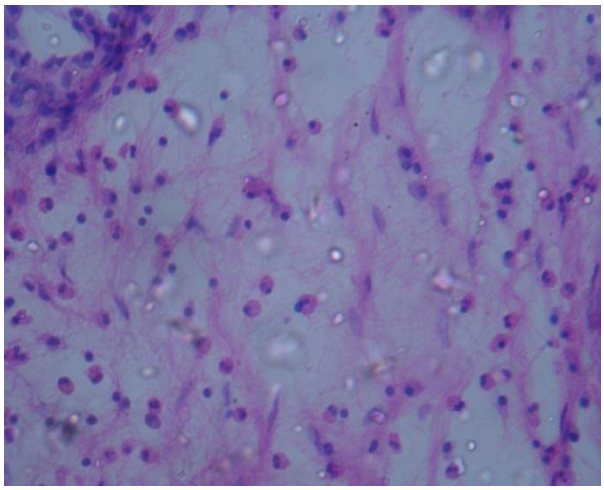
Photomicrograph of sino-nasal adenocarcinoma



Photomicrograph of inflammatory polyp (H&E x40)



photomicrograph inflammatory polyp(H&EX400)



Photomicrograph allergic polyp(H&EX400)

III. Discussion

The present histopathological study includes 100 lesions of nasal cavity and paranasal sinuses from December 2010 to October 2012.In our study of 100 cases, 81 were non-neoplastic and 19 were neoplastic lesions forming a ratio of non-neoplastic to neoplastic lesions as 4.2: I and the ratio of benign neoplastic and malignant lesions as 2.1:1.Non neoplastic lesions (81%) are more common than neoplastic lesions (19%) which are exactly matching the study of Husban AH et al [(50)].Lathi A et al [(35)] and KhorshedAlam ABH et al [(76)] also observed similar findings in their studies respectively.The incidence of nasal polyps in our study is 81% of all the non-neoplastic lesions of nasal cavity and PNS thus forming the commonest nasal lesion which is comparable to the observation by Zafar U et al[17)] who also found nasal polyps to be the commonest nasal lesions.More than 50 percent of our cases are in the 2nd and 3rd decade of life which is comparable with study of Lathi A et al. [(16)]Zafar U et al [(17))] also observed peak incidence in 2nd and 3rd decade of life.In our study we had 11 cases of inverted papillomas; the maximum number of cases were seen in 6th decade (10 cases) followed by 5th decade (1case). Lyndoh NC et al [(18)] found maximum number of patients between 6th and 7th decade and Sousa AMA et al [(19)] found predominance in 5th and 6th decade of life in their studies respectively.

In present study, there were 8 males and 3 females forming a ratio of 2.7:1. Lyndoh NC et al [(55)] and Sousa AMA et al [(18)]also observed male preponderance in their studies. Thus, it appears that papillomas are more common in males.

In our study, 11 cases were involving the nasal cavity and none involving the paranasal sinuses. Nasal cavity was observed as the commonest site of involvement by Lyndoh NC et al [(18)] and Sousa AMA et al .[(19)]

SCC was commoner in males (80%).

IV. Summary And Conclusion

1. Non-neoplastic lesions were more common than neoplastic lesions. Out of 100 total cases, 81 cases were non-neoplastic lesions and 19 cases were neoplastic lesions of nasal cavity and paranasal sinuses.
2. Out of all neoplastic lesions, inverted papilloma (11 out of 19 cases) was the most frequent, representing 57.90%.
3. Nasal polyps were the most common lesions in the present study. The age incidence ranges from 1st decade to 6th decade. There was male preponderance (62.96%).
   Allergic polyps were much more common than inflammatory polyps.
4. Out of 19 cases of neoplastic lesions, 13 were benign and 6 were malignant tumours. Thus the incidence of benign neoplastic lesions was more than the malignant tumours.
5. Among benign tumours inverted papilloma (11 out of 13 cases) was the most common histologic entity (84.62%).
6. Amongst the neoplastic lesions only one case each of hemangioma and neurofibroma were reported.
7. Of the 6 malignant tumours, SCC (5 out of 19 cases) was the commonest.
8. One case of sino-nasal adenocarcinoma was diagnosed during the study period. Thus the adenocarcinomas were found to be rare.

To conclude, categorizing the sino-nasal lesions according to histopathological features into various types helps us to know the clinical presentation, treatment, clinical outcome and prognosis of the disease.

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