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A Comparative Histopathological Study of Lesions of Nasal Cavity, Nasopharynx And Paranasal Sinuses At Tertiary Care Hospital of Western Rajasthan

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Abstract

Background- A variety of non-neoplastic and neoplastic conditions involve the nasal cavity (NC), paranasal sinuses (PNS) and these are very common lesions encountered in clinical practice. 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.

Methods- The study was conducted in the department of Pathology, Sardar Patel Medical College, Bikaner , over a period of 5 years both retrospectively and prospectively. 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 stain were used wherever necessary.

Results- The incidence of lesions in nasal cavity (NC) and PNS was 28.6 cases per year. Out of total 143 nose and PNS biopsy cases, 50(34.97%) were Neoplastic lesion and 93(65.03%) Non-neoplastic lesions. Out of 50 neoplastic lesion, 33(66.00%) were benign and 17(34.00%) malignant.

Conclusion- Malignant lesions were comparatively less to that of benign lesions.

Keywords: Non neoplastic and neoplastic,Rhinoscleroma ,Rhinosporidiosis .

Introduction

A variety of non-neoplastic and neoplastic conditions involve the nasal cavity and paranasal siuses and these are common in humans.lesins in these sites are important from clinical and pathological perspectives and they give rise to a varieties of histological patterns and grades of malignancies.lesions in these structure are associated with many of the specialized tissues present at this site, each with its own aberrations that exist in the region[1.]. Clinically sometimes it becomes quite impossible to distinguish between inflammatory conditions presenting as simple polyps, polypoid lesions due to specific disease and polypoid neoplasms (benign and malignant). For this reason it is essential that all the polyps and polypoid masses removed from nose and nasal sinuses should be fully examined histopathologically Inflammatory and benign lesions are more commonly found only found than the malignant ones. Primary nasal malignancies consist of 0.2% - 0.8% of all nasal malignancies consist of 0.2% - 0.8% of all malignant tumors and 3.6% of the malignant upperairway tumors [2].The Need of this study was to identify the prevalence of benign nasal,paranasal and nasopharyngeal pathology to that of malignant pathology in northwestern Rajasthan,India.

Material and Methods

- **Study design:** Hospital based study {was performed retrospectively as well as prospectively}.
- **Study duration**: 5yr study ,from Jan. 2013 to Dec. 2017).
- **Study place**: Dept. of Pathology, S.P.Medical College and P.B.M Hospital, Bikaner.
- **Sample size:** All patients reporting to the Pathology dept. within study duration .
- **Sampling Method:** Convenience sampling.(in this there is no inclusion criteria to selection of subject i.e all subjects are invited to participate)
- Data for retrospective study was obtained from departmental records . Tissue blocks and slides would be retrieved and reviewed. Data for prospective study was obtained from clinical records and tissue specimens.
- Gross examination was carried out on specimens. Tissue bits was routinely processed. 5 micron thick sections was made from paraffin blocks and was stained with H&E stain. Special stains shall be done whenever necessary.

Results

Total 143 cases presented as nasal /paranasal and nasopharyngeal mass/lesion.overall male predominance was noted,male affected were 81 i.e 56.64%,female were 62 i.e 43.36%.table 2,maximum 18.88% patients belong to 41-50 yrs age group and minimum 2.80% belong to 0-10 year age grouptable1.Area distribution of study group shows most of the patients from urban area 91 i.e 63.64% Table 3,year wise data of total biopsies to that of nasal and paranasal sinus biopsies shows that in year 2017 out of 8632 total biopsies ,35(0.40%) were of nose and PNS ,and as per last 5 year record ,out of total 36576 histopathological biopsies ,143(0.39%) were from nasal and PNS(Graph1,Table 4).Out of total 143 nasal , PNS and nasopharyngeal biopsies 50(34.97%) were Neoplastic lesion and 93(65.03%) were Non –neoplastic lesion(table 1,Graph 2).Out of 50 Neoplastic lesion,33(66.00%) were benign and 17(34.00%) malignant.Out of total 93 Non –neoplastic lesion, most 70(75.27%) were of inflammatory polyp,13 (13.9%) were of acute or chronic inflammatory cells,05(5.37%) were of fungal infection,one each(1.07%) of Rhinosleroma and Rhinosporidiosis respectively.

Table 1:Distritution of total nasal ,PNS and nasopharyngeal cases(n=143)

lesion	No. Of cases	percentage
Neoplastic lesion	50	34.97%
Non-neoplastic lesion	93	65.03%
Total	143	100%

Table 2:Gender distribution of study patients(n=143)

Gender	NO. OF PATIENTS	PERCENTAGE%
Male	81	56.64%
Female	62	43.36%
Total	143	100%

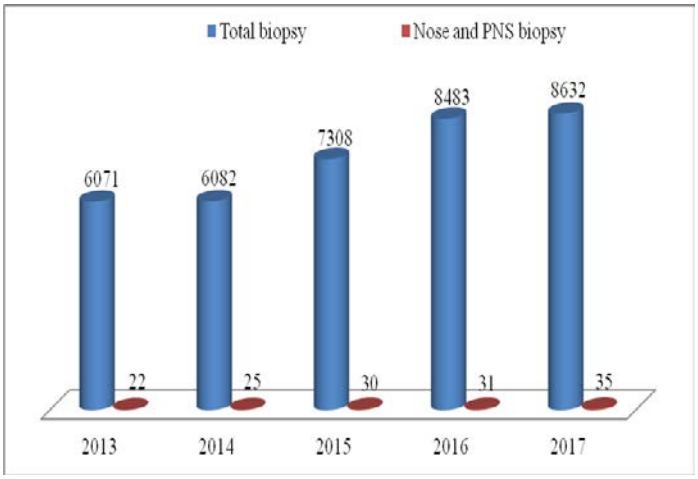
Table 3: Age distribution of study patients (n=143)

Age group(Yrs)	**No. of patients**	**Percentage (%)**
0-10 Yrs	4	2.80%
11-20 Yrs	25	17.48%
21-30 Yrs	26	18.18%
31-40 Yrs	21	14.69%
41-50 Yrs	27	18.88%
51-60 Yrs	22	15.38%
More than 60 Yrs	18	12.59%
Total	**143**	**100%**

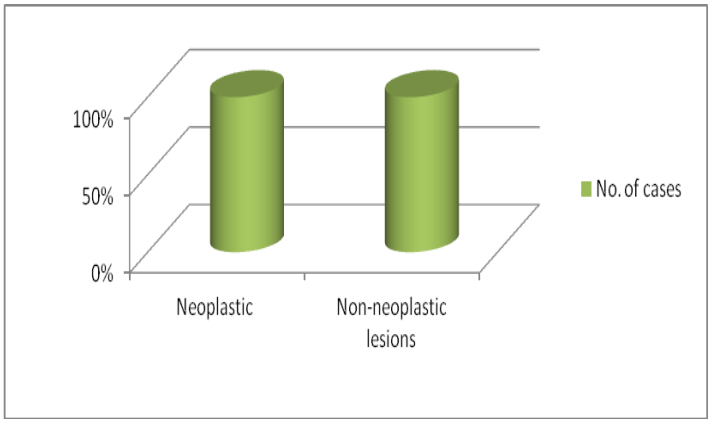
Table 4: Year wise data of the nose and PNS biopsy cases.

Year	Total biopsy	Nose and PNS biopsy
2013	6071	22
2014	6082	25
2015	7308	30
2016	8483	31
2017	8632	35
Total	**36576**	**143**

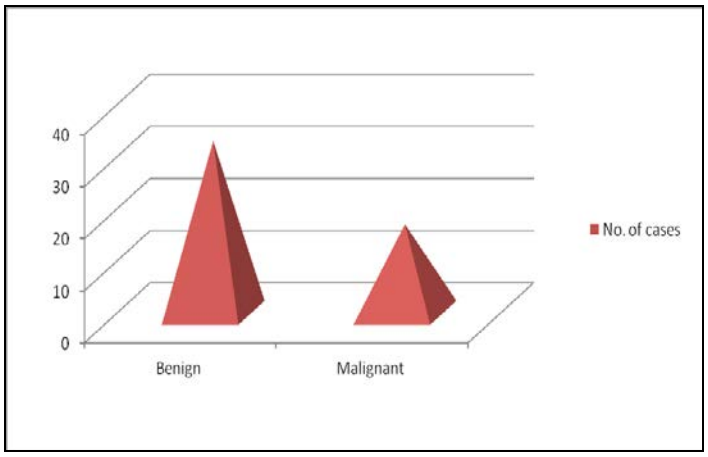
Graph1-Total biopsies and Nasal biopsies.



Graph 2-Neoplastic and Non neoplastic lesions



Graph 3 –Neoplastic –benign and malignant lesions



Discussion

The present study was undertaken to a comparative histopathological study of lesions of nasal cavity, nasopharynx and paranasal sinuses at a tertiary care hospital of western Rajasthan in Dept. of Pathology, S.P. Medical College, Bikaner. This study was conducted on total 143 number of cases.

In the present study maximum 18.88 % patients belong to 41-50 yrs age group and minimum 2.80% patients belong to 0-10 Years age group. Male patients were 56.64% and female patients were 43.36%. Most of (63.64%)patients belong to urban area.

A study conducted by Shikha Ngairangbam et al[3] in JN Institute of Medical Sciences, Porompat, Imphal, Manipur found that maximum patients was 51-60 Yrs age group & most of patients were male than female and maximum patients were from urban area.

Satarkar R et al[4] was found that he tumor-like lesions were predominant in the second and third decades in the present study; 61.2% of 116 lesions diagnosed occurred in this age group.

Ghosh and Bhattacharya[5] reported a maximum number of tumor-like lesions in the second and third decades.

Tondon et al[6]reported the incidence of inflammatory lesions as maximum in 20–29 years and maximum patients were male than female.

In our study in last 5 years out of total biopsy 36576, 143(.39%) was nose and PNS biopsy. This is consistent with the findings of Dasgupta et al. [7], who reported an incidence of 17.4 cases per year. However, the incidence reported by Tondon et al[6] was 10 cases per year. Out of total 143 nose and PNS biopsy cases, 50(34.97%) were Neoplastic lesion and 93(65.03%) Non-neoplastic lesions in our study.

A study conducted by Shikha Ngairangbam et al[3] found that out of 102 cases, 57.84% were non-neoplastic and 42.16% neoplastic, same result found study by Lathi et al. [8]and Shulba et al.[9] The former found 72% non–neoplastic and 28% neoplastic cases, while the latter found 91 non-neoplastic and 9 neoplastic lesions in a study conducted on 100 patients.

In this study, non-neoplastic lesions constituted 65.03% of cases with inflammatory polyp being the predominant type. There was male preponderance. Similar observations were made by Dasgupta et al[7]., [10]Kalpana et al.,[11] Mysorekar et al., [12] Zafar et al., [13] Garg et al. and Fazel et al. [14] while a Nigerian study Bakari et al. [15] shows a female predominance. Out of 50 neoplastic lesion, 33(66.00%) were benign & 17(34.00%) malignant . Out of total 33 benign lesion maximum 30.30% haemangioma followed by 27.27% were angiofibroma & inverted papilloma each, 12.12% lobular haemangioma and 3.03% capillary haemangioma in our study.

A study conducted by Shikha Ngairangbam et al[3] found that out of 100 cases studied, 43 cases of neoplastic lesions were found out of which 65.12% were malignant and 34.88% benign.

In the study by Shulba et al.[9] out of the 9 neoplastic polyps, 7 were benign and 2 were malignant. Among the benign tumours, epithelial tumours were less common when compared to non-epithelial tumours and in epithelial tumours inverted papilloma was the commonest.

Narayana Swami et al. [16] also reported 13% incidence of inverted papilloma amongst all benign tumours. Amongst non-epithelial tumours, 13.34% each of hemangioma and angiofibroma were seen whereas other study showed higher incidence.

Out of total 17 cases malignant neoplastic lesion, 94.11% cases were SCC and 5.89% were adenocystic carcinoma in our study.

A study conducted by Shikha Ngairangbam et al[3] found that Among the malignant neoplasms, undifferentiated carcinoma was common and seen in 78.58% of the cases followed by squamous all carcinoma.

Lathi A et al [8]and Svane Knudson et al[17].have reported squamous cell carcinoma to be the most commonly encountered malignancy in India and Denmark respectively. The neoplastic lesions were predominant in the fifth,sixth and seventh decades with majority cases occurring in this age group in the present study.

Ghosh and Bhattacharya [5] reported that majority of malignancies at this site occur in the fifth to seventh decades, with which the findings of the present study correlate.

Chaturvedi et al. [18] had reported the most common age group affected be 51–60 years having 43.8% cases.

Conclusion

Histopathological examination is simple, reliable and cost effective diagnostic procedure for the detection of various lesions of nasal cavity, nasopharynx and paranasal sinuses. Non-neoplastic lesions were more common than neoplastic lesions. Most common lesions were Nasal Polyps may be due to dry and desert area. Male preponderance was observed, while most of the cases were presented in 41-50 Yrs of age group. Non-neoplastic lesions were more common than neoplastic lesions. Among neoplastic lesion benign lesions were more common than malignant. The most common histological

type of malignancy encountered was squamous cell carcinoma.

References

1. Parajuli S, Tuladhar A. Histomorphological spectrum of masses of the nasal cavity, paranasal sinuses and nasopharynx. Journal of Pathology of Nepal, 2013; 3: 351-355.
2. Nelson G.Oronez,Juan Rosai.Respiratory tract.In:Rosai and Ackerman's surgical pathology. 9 th edition. Mosby; 2004,vol.1.p.308-324.
3. Ngairangbam S, Laishram RS. Histopathological patterns of masses in the nasal cavity, paranasal sinuses and nasopharynx. J Evid Based Med Healthc 2016; 3(2), 99-101.
4. Satarkar R, Srikanth S. Tumors and tumor-like conditions of the nasal cavity, paranasal sinuses, and nasopharynx: A study of 206 cases. Indian J Cancer 2016;53:478-82
5. Ghosh A, Bhattacharya K. Nasal and nasopharyngeal growth a ten year's survey. J Indian Med Assoc 1966;47:13-8.
6. Tondon PL, Gulati J, Mehta N. Histological study of polypoidal lesions in the nasal cavity. Indian J Otolaryngol 1971;23:3-11.
7. Anjali Dasgupta, Ghosh RN, Chhanda Mukherji. Nasal Polyps Histopathological spectrum. IJO HNS 1997;6(1).
8. Lathi, Syed MMA, Kalakoti P, et al. Clinico – pathological profile of sinonasal masses: a study from a tertiary care hospital of India. ACTA otorhinolamyngologica italica 2011;31:372-377.
9. Shulbha S, Dayananda BS. Clinicopathological study of nasal polyps with special reference to mast cells in inflammatory polyps. Basic and Applied Pathology 2012;5:59-62
10. Kalpana Kumari MK, Mahadeva KC. Polypoidal lesions in the nasal cavity. J Clin Diagn Res. June 2013;7(6):1040-42.
11. Mysorekar VV, Dandekar CP, Rao SG. Polypoidal lesions in the nasal cavity. Bahrain Med Bull 1997;19:67-69.
12. Zafar U, Khan N, Afroz N, et al. Clinicopatholgical study of non-neoplastic lesions of nasal cavity and paranasal sinuses. Indian J Pathol Microbial 2008;51(1):26-29.
13. Dinesh Garg, Kusum Mathur, Clinico-Pathological St udy of Space Occupying Lesions of Nasal Cavity, Paranasal Sinuses And Nasopharynx. Journal of Clinical and Diagnostic Research. 2014. [cited: 2016 Feb 29] FC04 - FC07
14. Fazal I Wahid, Mohammad Habib, Qaiser Khan, et al. Etiolgical profile and treatment outcome of epistaxis experienced at a tertiary care hospital of peshwar, Pakistan: A study of 155 cases. Otorhinolaryngology and Head and Neck Surgery – 2011;8(3):11-13
15. Aminu Bakari, Qlushola A Afolabi, Adeyi A Adoga, et al. Clinico – pathological profile of sinonasal masses: an experience in national ear care center Kaduna, Nigeria. BMC Research Notes 2010;3:186.
16. K. V. Narayana Swamy , B. V. Chandre Gowda. A clinical study of benign tumours of nose and paranasal sinuses. ndian J Otolaryngol Head Neck Surg. 2004 Oct; 56(4): 265–268.
17. Svane – Knudsen V, Jorgensen KE, Hansen O, et al. Cancer of the nasal cavity and paranasal sinuses; a series of 115 patients. Rhinology. Mar 1998;36(1):12-14.
18. Chaturvedi VN, Raizada RM, Jain SK, Hariharan KK, Pakhan AJ. A profile of the malignant tumours of the paranasal sinuses (a study of 57 c ases). Indian J Cancer 1986;23:14-20.