

Clinico-Histological Pattern of Sinonasal Space Occupying Lesions in a Tertiary Care Hospital.

Mohammad Sajjad Khattak¹, Rafiq Ahmad Khattak², Muhammad Akram Khattak³

ABSTRACT

OBJECTIVE: The aim of this study was to describe the clinico-histological pattern of sinonasal space occupying lesions in patients admitted in Ear Nose and Throat (ENT) Department of tertiary care Hospital.

STUDY DESIGN: A retrospective descriptive study.

PLACE AND DURATION: Pathology Department Bannu Medical College and ENT Department Khalifa Gul Nawaz Teaching Hospital Bannu KPK, from 1st January 2011 to 31st December 2016.

METHODOLOGY: In this study a total of 68 patients with sinonasal lesions were analyzed. All patients of any age and sex were studied. Patients clinical record was collected from ENT ward register of the Hospital and biopsy histopathological reports were collected from register of Pathology Deptt of Bannu Medical College. The parameters age, sex, clinical findings and histological pattern of different sinonasal lesions were assessed for frequencies with percentages and mean with standard deviation in Statistical Package for Social Sciences (SPSS) version 20.

RESULTS: The mean age was 31.55±13.5 years with age range of 15 to 65 years. Male patients were 67.64% and female 32.35% and male to female ratio was 2.09:1. Nasal obstruction was present in 57 (83.82%) patients followed by nasal discharge in 42 (61.76%) and epistaxis in 13 (19.11%). The common non neoplastic lesion was inflammatory nasal polyp 34 (50.0%). In benign neoplastic lesions inverted papilloma was the common lesion 9 (13.23%) and squamous cell carcinoma was the common malignant lesion in 5 (7.35%) cases.

CONCLUSION: This study show almost the same clinico-histological pattern of sinonasal mass lesions as in other studies. Inflammatory nasal polyp was the commonest non neoplastic inflammatory lesion, whereas inverted papilloma was the commonest benign neoplastic lesion and squamous cell carcinoma was the commonest malignant lesion in this study.

KEY WORDS: Sinonasal lesions. Nasal obstruction. Inflammatory nasal polyp. Squamous cell carcinoma. Histopathology.

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INTRODUCTION

Nasal cavity contains a variety of tissues like squamous, neuroepithelial and olfactory epithelial tissues as well as mesenchymal tissues like bone, cartilage, muscle and vascular tissues.¹ Despite this wide range of tissues differentiation the incidence of the sinonasal neoplastic lesions is very low i.e. 1/100,000. Primary sinonasal malignancies comprises about 0.2% - 0.8% of all the malignant tumors of the body and only fraction appear in the nasal cavity. The nasal cavity and

paranasal sinuses work together as a functional unit and shares most of the pathologic processes.² The knowledge of anatomy and histology of this area is important as many lesions reveals a strong predilection to specific anatomic location e.g. angiofibromas and lymphoepitheliomas develop almost exclusively in the nasopharynx. Also lobular capillary hemangiomas and schneiderian papillomas arises from the nasal cavity etc.^{3,4}

Nasal cavity and paranasal sinuses are involved by a variety of non neoplastic and neoplastic lesions, the most common of these are inflammatory polyps, followed by benign tumors and rare are malignant tumors. Clinically sinonasal lesions may present with symptoms like nasal obstruction, nasal discharge, epistaxis, headache and facial pain etc. About 9-12% of patients are asymptomatic which causes delay in the diagnosis and hence are in advance stage when diagnosed. Patients of sinonasal lesions with unilateral symptoms have a high suspicious for malignancy.^{5,6} The nasal cavities and paranasal sinuses are in close proximity to each other as well as with paranasal sinuses. This proximity to vital structures like brain, optic nerves, and internal carotid artery make them highly challenging regarding treatment and prognosis.^{7,8} Regional and distant metastases are infrequent even in the presence of advanced stage tumors. The presence of regional or distant

1. Associate Professor of Pathology, Bannu Medical College Bannu, Khyber Pakhtunkhwa
2. Associate Professor of ENT, Khalifa Gul Nawaz Teaching Hospital Bannu, Khyber Pakhtunkhwa
3. Assistant Professor of Community Medicine, Bannu Medical College, Bannu, Khyber Pakhtunkhwa

Correspondence to:

Mohammad Sajjad Khattak
Associate Professor of Pathology,
Bannu Medical College Bannu, Khyber Pakhtunkhwa
Email: sajjadkhattak66@gmail.com

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metastases is a poor prognostic sign of malignancy.⁹ The objective of this study was to see the clinical as well as histopathological pattern of sinonasal lesions in southern district of KPK. Pakistan.

METHODOLOGY

This retrospective descriptive study was carried out in Pathology Department Bannu Medical College and ENT Department of Khalifa Gul Nawaz Teaching Hospital Bannu KPK, from 1st January 2011 to 31st December 2016. A total of 68 patients with sinonasal mass lesions were analysed. All the patients clinical record was collected from ENT ward register of the Hospital and biopsies histopathology reports from Pathology Department of attached Bannu Medical College. The inclusion criteria was all sinonasal lesions of any age and sex, exclusion criteria was patients with absent clinical record and autolysed (unfixed) or insufficient biopsy specimen. The parameters of age, sex, age groups, clinical findings of patients and histological pattern of biopsy reports were assessed for frequencies with percentages and mean with standard deviation in SPSS version 20.

RESULTS

A total of 68 patients with sinonasal lesions were analyzed in this study. The mean age of 31.55±13.5 years and age range was from 15 to 65 years. Out of 68 biopsies 46 (67.64%) were from

headache in 12 (17.64%), nasal mass 09 (13.23%) and fascial pain in 05 (7.35%) patients. (Table- I) The non neoplastic lesions were 37 (54.42%), benign neoplastic lesions were 17 (25.00%) and malignant neoplastic lesions were 14 (20.58%) cases. The most common non neoplastic lesion was inflammatory nasal polyp 34 (50.00 %) followed by fungal granuloma 3 (4.41%), wagner's granulomatosis 2 (2.94%) and rhinoscleroma 01 (1.47%). In benign neoplastic lesions inverted papilloma 9 (13.23%), hemangioma 2 (2.94 %), nasal glioma 2 (2.94%) and in malignant neoplastic lesions squamous cell carcinoma 5 (7.35%), followed by nasopharyngeal carcinoma 4 (5.88%), lymphoma 03 (4.11%) and olfactory neuroblastoma 02 (2.94%) were present in descending order of frequency. (Table-II)

DISCUSSION

In clinical practice sinonasal lesions are commonly encountered in Hospitals. There occurs a variety of non neoplastic and neoplastic lesions in this region of the body. It is clinically important to segregate benign from malignant lesions as both have different treatment modalities.⁸

In this study the mean age was 31.55±13.5 years, age range was from 15 to 65 years and male to female ratio was 2.09:1. In a study conducted by Garg et al⁹ the mean age was 29.1 years and range was from 1 to 76 years and male to female ratio was 1.98:1. Another study conducted by Bakari et al¹⁰ the mean age was 33.3 years and range was from 5-64 years and male to

TABLE-I: FREQUENCY AND PERCENTAGES OF CLINICAL FINDINGS IN PATIENTS OF SINONASAL LESIONS (N=68).

Clinical findings	No of patients	Percentages
Nasal obstruction	57	83.82%
Nasal discharge	42	61.76%
Epistaxis	13	19.11%
Headache	12	17.64%
Nasal mass	09	13.23%
Fascial pain	05	7.35%

TABLE-II: HISTOLOGICAL PATTERN OF VARIOUS SINONASAL LESIONS (N=68).

Main group of lesions	Type of lesion	No. of lesions	Percentages	
Non neoplastic lesion	Inflammatory polyp	34	50%	
	Fungal infection	3	4.41%	
	Wagner's granulomatosis	2	2.94%	
	Rhinoscleroma	1	1.47%	
Neoplastic lesion	Benign	Inverted papilloma	9	13.23%
		Angiofibroma	2	2.94%
		Nasal glioma	2	2.94%
	Malignant	Squamous cell carcinoma	5	7.35%
		Nasopharyngeal carcinoma	4	5.88%
		Lymphoma	3	4.41%
		Neuroblastoma	2	2.94%

males and 22 (32.35%) were from female patients. The male to female ratio was 2.09:1. The common age group involved was 21-30 years followed by 31-40 years and 41-50 years. Nasal obstruction was present in 57 (83.82%) of patients followed nasal discharge in 42 (61.76%), epistaxis in 13 (19.11%) and

female ratio was 1:1.2. Another study conducted by Panchonia et al¹⁴ the age range was from 3-80 years and male to female ratio was 2.2:1. The difference in age range of this study from the above studies indicate a late consultation to doctors especially in cases of children who suffer sinonasal problems.

This may be due to lack of education in this particular area of study.

In present study clinical sign and symptoms were nasal obstruction in 83.82% followed by nasal discharge in 61.76%, epistaxis in 19.11%, headache in 17.64%, nasal mass 13.23% and fascial pain in 7.35% patients. In a study conducted by Garg et al¹² the nasal obstruction was present in 87.07% followed by nasal discharge in 69.39%, nasal mass in 61.90% and paranasal mass in 38.09% cases. Another study conducted by Bakari et al¹³ show nasal obstruction in 97.4% followed by nasal discharge in 94.7%. Still another study conducted by Panchonia et al¹⁴ show nasal obstruction in 53.3% followed by headache in 34.4% and epistaxis in 6.6% cases. In a study conducted by Lathi et al¹⁵ nasal obstruction was found in 97.3% followed by nasal discharge in 49.1%, epistaxis 17.9%, headache in 16.9% and fascial swelling in 11.6% cases.

In our study the non-neoplastic lesions were 54.42%, benign neoplastic lesions were 25.00% and malignant lesions were 20.58%. In a study conducted by Garg et al¹² in 91 cases of nasal and paranasal masses non neoplastic lesions were 73.62%, benign neoplastic were 12.08% and malignant neoplastic were 14.28%. A study by Panchonia et al¹⁴ show non neoplastic lesions in 60%, benign neoplastic in 21.11% and malignant lesions in 15.55% cases.

In this study the most common non neoplastic lesion was inflammatory nasal polyp 50.00 % followed by fungal granuloma 4.41%, wagner's granulomatosis 2.94% and rhinoscleroma 1.47%. In a study conducted by Garg et al¹² inflammatory polyp was present in 65.93% followed by fungal infection in 5.49% and rhinoscleroma in 1.08% cases. Another study conducted by Bakari et al¹³ show nasal polyp in 50% followed by rhinoscleroma in 4.44% cases. Another study conducted by Nepal et al¹⁶ reported nasal polyp in 70% followed by fungal infection in 4.5% cases. Another study by Kulkarni et al¹⁷ show nasal polyp in 63.3% followed by rhinoscleroma in 15.84% and fungal infection in 0.99% cases.

In present study the common benign neoplastic lesions was inverted papilloma 13.23% followed by angiofibroma 2.94 % and nasal glioma 2.94%. In study conducted by Garg et al¹² inverted papilloma was present in 5.49% followed by angiofibroma in 2.29% cases. Another study by Panchonia et al¹⁴ reported inverted papilloma in 8.88%, angiofibroma in 2.22% cases. Still another study conducted by Lathi et al¹⁵ reported inverted papilloma in 6.25%, angiofibroma in 0.89% cases where as hemangioma was reported in 8.03% cases.

In our study the common malignant lesions were squamous cell carcinoma 7.35% followed by nasopharyngeal carcinoma 5.88%, lymphoma 4.11% and olfactory neuroblastoma 2.94%. Garg et al¹² reported squamous cell carcinoma in 6.59% and neuroblastoma in 1.09% cases. Another study conducted by Panchonia et al¹⁴ show squamous cell carcinoma in 6.66% and neuroblastoma in 1.11% cases. Another study conducted by Lathi et al¹⁵ show squamous cell carcinoma in 10.71% and adenocarcinoma in 0.89% cases. Still another study conducted by Nagairangbam et al¹⁸ show squamous cell carcinoma in 14.28%, neuroblastoma and lymphoma in 0.98% cases each.

CONCLUSION

This study show almost the same clinico-histological pattern of sinonasal mass lesions as in other studies. Inflammatory nasal polyp was the commonest non neoplastic inflammatory lesion, whereas inverted papilloma was the commonest benign neoplastic lesion and squamous cell carcinoma was the commonest malignant lesion in this study.

Contribution of authors.

Khattak MS: Conceived Idea, Designed Research Study, Manuscript Writing, Literature Search, and Statistical Analysis
Khattak RA: Literature Search, Data collection and Literature Review.

Khattak MA: Manuscript Writing, Manuscript final reading and approval

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