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Clinicopathological study of masses in sinonasal cavity and nasopharynx

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ABSTRACT

The nasal cavity and paranasal sinuses occupy a relatively small anatomical space, but they give rise to some of the more complex, histologically different group of tumors in the entire human body.[1]Thesinonasal cavity tumors have a similar presenting symptomatology. A presumptive diagnosis is often made using advanced imaging and CT and/or MRI. However, the mainstay of final definitive diagnosis is a careful histopathological examination. This present study was done to look for the occurrence of different masses arising from the nasopharynx and sinonasal tract, and to compare between their histological types and clinical mode of presentation.Comparison ofclinical findings with histopathological finding showed that 47 of the 70 patients had clinically non-neoplastic polyps, of which the maximum were inflammatory polyps.Among the benign neoplastic lesions, maximum cases to be found were Inverted Papilloma followed by Lobular Capillary Haemangioma.Among the malignant lesions reported in this study, Squamous Cell Carcinoma was the most common.Most of the cases in present study presented with nasal discharge, obstruction and nasal mass. Complaints of pain and headache were most common in malignant cases. Thorough examination of patients with complaints of facial pain or headache should be done, to rule out paranasal sinuses malignancies at an early stage.

KEYWORDS: Sinonasal mass, Polyp, Nasal Obstruction, Squamous Cell Carcinoma

INTRODUCTION

Masses in the sinonasal cavity and nasopharynx may be neoplastic or non-neoplastic. The masses produce a wide range of features ranging from epistaxis, respiratory obstruction to destruction of local structures. Inflammation of local tissue produced by these masses may bring changes in local anatomy and physiology.The presenting symptoms of all masses either benign or malignant are almost similar and hence a thorough clinical examination becomes necessary for provisional diagnosis. By use of advance imaging technique like CT scan, MRI, Endoscopy, etc. a presumptive diagnosis is often made.However it is a careful histopathological examination which decides the nature of any particular lesion and also makes possible to implement correct and timely interventions, which is a major deciding factor for better prognosis.The clinic-pathological study also gives the valuable information about the possibility of changing a benign lesion into malignant lesion. This study is primarily focused on the evaluation of clinical behavior, histopathological study of masses in sinonasal cavity and nasopharynx, so as to provide appropriate management at the earliest and increase the patient's quality of life. Hence, this study has

been taken up to classify masses in the sino-nasal cavity and/or nasopharynx as non-neoplastic and neoplastic lesions, and characterization of their clinical profile.

MATERIAL AND METHODS

This study was hence done with the following objectives:

1. To find out the different types of masses in sinonasal cavity and nasopharynx.
2. To compare the clinical and histopathological diagnosis of masses in sinonasal cavity and nasopharynx.

The present study is a clinicopathological study of 70 cases of masses of sino-nasal caivty and nasopharynx, that was conducted on patients attending the department of Otorhinolaryngology at National Institue of Medical Sciences Hospital, Jaipur over a period of one and half years (January 2015 – June 2016).

A detailed history was taken followed by clinical examination, radiological assessment and pathological evaluation and a diagnosis was arrived at.

OBSERVATIONSAND RESULTS

Table 1: Clinical Profile of Sinonasal Masses

Symptoms	Non-neoplastic masses	Benign masses	Malignant masses
Nasal Obstruction	24	8	6
Nasal Discharge	26	5	6
Sneezing	20	5	
Bleeding per nose	1	9	3
Headache	21	1	4
Swellling/Deformity of Nose	1	2	
Disturbance of Smell	5		1
Change in voice			2
Fever		2	
Neck Swelling	1		2
Loosening of tooth/teeth	1		2
Epiphora			1
Sweling cheek		1	1

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Table 2: Comparison of Clinical, Radiological and Histopathological Diagnosis

Clinical Diagnosis	No. of patients	Radiological Diagnosis	No. of patients	Histopathological Diagnosis	No. of patients
Antrochoanal Polyp	27	Antrochoanal Polyp	20	Inflammatory Polyp	20
		Sinusitis with polyposis	7	Inflammatory Polyp	7
Ethmoidal polyp	17	Sinusitis with polyposis	17	Allergic Polyp	17
Fronto-ethmoidal polyp	1	Fronto-ethmoidal Mucocoele	1	Chronic Inflammation	1
Fungal Sinusitis	1	Invasive fungal sinusitis/malignancy	1	Well differentiated squamous cell carcinoma	1
	1	Fungal Sinusitis	1	Mucormycosis	1
Rhinosporidiosis	2	Rhinosporidiosis	1	Rhinosporidiosis	1
		Nasal Mass	1	Lobular Capillary Haemangioma	1
Capillary Hemangioma	2	CT not done	2	Lobular Capillary Haemangioma	2
Inverted Papilloma	7	Inverted Papilloma	3	Inverted Papilloma	3
		Nasal Mass	4	Inverted Papilloma	4
Nasolabial Cyst	1	Nasolabial Cyst	1	Nasolabial Cyst	1
Angiofibroma	3	Angifibroma	2	Angifibroma	2
		Haemangioma	1	Lobular Capillary Haemangioma	1
Tumour Benign/Malignant	1	Fibrous Dysplasia	1	Fibrous Dysplasia	1
Malignant tumor of maxilla	5	Malignant tumour	5	Squamous cell carcinoma(Well-differentiated)	3
				Squamous cell carcinoma (Moderately differentiated)	2
Nasopharyngeal carcinoma	2	Nasopharyngeal carcinoma	2	Squamous cell carcinoma (Well-differentiated)	2

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Based on the methodology and results employed, we have observed that:

- Majority of nasal lesions were observed in the third decade.
- Nasal lesions showed male preponderance of 69% with male to female ratio of 2.18:1.
- Present study showed that non-neoplastic lesions formed the majority (67.2%) and neoplastic lesions constituted 32.8% of nasal lesions.
- Among non-neoplastic lesions, inflammatory polyp was the most common followed by allergic polyp, inflammatory polyps affecting the 2nd decade and allergic polyps affecting the 5th and 6th decades.
- Among the benign neoplastic lesions, maximum cases to be found were Inverted Papilloma (7/15) 46.67% of cases followed by Lobular Capillary Haemangioma 33.33 % cases. 2 cases of Angiofibroma were there, both of them were male.
- Among the malignant neoplasms, squamous cell carcinoma of the maxilla accounted for 75% and two cases of Nasopharyngeal carcinoma were reported accounting to 25%.
- Most of the cases in present study presented with nasal discharge, obstruction and nasal mass. Complaints of pain and headache were most common in malignant cases. This can be attributed to the advanced disease at the time of presentation for seeking medical advice. Thorough examination of patients with complaints of facial pain or headache should be done, to rule out paranasal sinuses malignancies at an early stage.
- Comparison ofclinical findings with histopathological finding showed that 47 of the 70 patients had clinically non-neoplastic polyps; 27 patients had inflammatory polyps, 17 had allergic polyps, 1 case of chronic inflammation, 1 case of mucormycosis and one case of rhinosporidiosis.

DISCUSSION

The incidence of non-neoplastic lesions in the present study was 67.2% and neoplastic lesions were 32.8%. Study conducted by Mysorekaret al[2] and Kumari et al[3] showed similar incidence rates. Other studies by Dafaleet al[4] in Karnataka and Kulkarni et al[5] in kholapur showed higher incidence.

Nasal lesions generally are more common in males worldwide. In this study the percentage of nasal lesions were higher in males (69%) than females (31%), which is similar to studies of other authors. Study conducted by Kulkarni et al[5] showed similar incidence rates.The present study showed that majority of non-neoplastic cases were in age group 20-30 years (affecting mostly the third followed by sixth decades), which was similar to other studies which showed a peak incidence in the 2nd – 3rd decades. Of the benign lesions, study conducted by Lathi et al[6] (2011) in Maharashtra found that most of the cases occurred in the 2nd-4th decade of life and malignancy after 5th decade which was similar to the present study with a peak incidence of malignant tumors in the 6th decade.

Among the non-neoplastic lesions found in this study, allergic polyp and inflammatory polyp formed the majority, which is in agreement to other studies quoted above. The peak incidence of nasal polyps were in third decade, and study conducted by Lathiet al[6] and Mysorekar et al[2] showed that peak incidence of nasal polyps occur in the 2nd-3rd decade. The incidence of mucormycosis and rhinosporidiosis in

the present study is similar to other studies.

Majority of the non-neoplastic lesions had male preponderance with the maximum male to female ratio found in the polyps and average ratio being 1.5:1 which was comparable to studies like Lathiet al[6], Kumari et al[3], Mysorekar et al[2], Zafar et al[7].

In the present study, one case of mucocoele was seen accounting for 2.1 % of the total non-neoplastic lesions. Even as total number of such anomalies studied is small, other casual factors need to be further explored.

Among the benign lesions, papillomas (46%) were the most common benign nasal lesion and capillary hemangioma (27%) was the second most common benign nasal neoplasm in the present study, which was similar to study conducted by Dafaleet al[8]. Whereas studies by Kulkarni et al[5] and Lathi et al[6] showed that hemangioma was the most common benign lesion and inverted papilloma was second in line. The incidence rates of angiofibroma was higher in study by Zafar et al[7], Kumari et al[3] and Mysorekar et al[2] compared to the present study. Angiofibroma has a male preponderance between 10-25 years of age, probably because it is an androgen dependent tumor and represents a hypertrophic response to the physiological hormonal changes occurring at puberty.

All the benign neoplastic cases, except for nasolabial cyst, had male preponderance with maximum male to female ratio of 7:0 found in Inverted papilloma which was higher compared to other studies like Lathi et al,[6]Kumari et al,[3]Mysorekar et al[2] and Zafar et al.[7]Nasolabial cyst showed a female preponderance with a male to female ratio of 0:1. Among the malignant lesions reported in this study, squamous cell carcinoma was the commonest constituting all of the malignant lesions, just varying in the degree of differentiation. Lathiet al[6] showed a peak incidence of squamous cell carcinoma and reported that it is rare before 4th decade of life.nThus the present study provides current hospital based epidemiological data on age of presentation, gender distribution and histological variants of nasal lesions that were incident over a significant period of one and half years in a tertiary care hospital in Rajasthan.

CONCLUSION

In the cases of malignant sino-nasal tumors, due to the ill-defined nature of symptoms which may masquerade as inflammatory or benign disease, diagnosis of patients occurred after a long duration. Computerized tomography scan must be done as a part of the necessary protocol.Histopathological evaluation of nasal lesions is challenging and mandatory as the diagnosis varies from non-neoplastic to rare neoplastic. From this study we have reached to the inference that tumors of the paranasal sinuses are rare but when they occur they are extremely notorious. It is only if they are diagnosed at an early stage and treated radically, does the patient have a chance of good prognosis. Because of this fact it is essential for otorhinolaryngologists to make the general practitioners aware so that they do not go on treating it as a benign sinusitis. Any sino-nasal problem not responding in 6 weeks must be sent to an expert for further evaluation.

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