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Pathology

CLINICOPATHOLOGICAL SPECTRUM OF SINONASAL POLYPOIDAL MASSES

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ABSTRACT **Background:** Aim of this study is to evaluate the clinicopathological profile of sinonasal masses in our environment. **Material and mathods:** Formalin fixed specimens provided with clinical data were sectioned stained with Haematoxylin and Eosin and a histopathological examination is done. **RESULTS:** Analysis of 132 cases revealed 105 cases of non neoplastic and 27 cases of neoplastic origin. Inflammatory polyps constitute 73 cases of non neoplastic polyps. Capillary angioma was the common benign lesion and squamous cell carcinoma was the commonest malignant lesion observed. **CONCLUSION:** Histopathology remains the gold standard for diagnosing sinonasal masses so as to plan for treatment modalities.

KEYWORDS : Sinonasal masses, Inverted papilloma, squamous cell carcinoma,

INTRODUCTION:

Nasal and paranasal sinuses are the site of greatest variety of lesions in the upper respiratory tract. Both non neoplastic and neoplastic lesions are commonly encountered as polyps in clinical practice. Their prevalence in general population is considered to be around 4% [1].It predominantly affects adults usually older than 20. Benign neoplasia of nose and paranasal sinuses is relatively not uncommon[2]. Malignant tumours account for 0.2-0.8% of all carcinomas[3]. Geographical distribution varies with increased prevalence in African, Japanese and Arab countries and lesser in Western Europe and America[4] .The presenting features and advanced imaging techniques reach a presumptive diagnosis but histopathological examinations is the mainstay for final definitive diagnosis

Materials and methods:

All the cases which presented as polypoidal lesions in the nasal cavity and paranasal sinuses over a period of 2 years were included in this study. Formalin fixed specimens were received with clinical and radiological data. Sections of 3-4µm thick were cut and stained with Haematoxylin and Esoin. Special stains like periodic acid Schiff were used wherever necessary.

RESULTS:

The present study included 132 cases of polypoidal lesions of nasal and paranasal sinuses. Of these 105(79.5%) were non neoplastic(simple polyp) and 27 (20.5%) were of neoplastic origin. Simple polyps included 81(61.3%) of non allergic polyps and 24 cases(18.1%) of allergic polyps. Non allergic polyps include 73 cases(55.3%)of non specific polyps,6 cases (4.5%) of fiungal sinusitis and 2 cases (1.5%) of rhinosporidiosis. Out of 27 cases of neoplastic polyps17(62.9%) were benign and 10 (37%) were malignant polypoidal lesions. Benign neoplastic polyps were classified into 8 cases (6%) of capillary angioma, 5 cases(3.7%)of sino nasal papillomas(4 cases of inverted papilloma,1 case of fungiform papillae) and one case each of angiofibroma, solitary fibrous tumour, ossifying fibroma and pleomorphic adenoma. Maligant polypoidal lesions include 5cases (3.7%) of squamous cell carcinoma, 2 cases (1.5%) of adenoid cystic carcinoma and 1 case each of sinonasal undifferentiated carcinoma, Intestinal type of adenocarcinoma and ameloblastic carcinoma.

TABLE NO.1 - TYPE OF LESIONS

NON NEOPLASTIC POLYPS				
S. NO	TYPE	TOTAL NO OF	MALE	FEMALE
1	ALLERGIC	24 (18.11%)	12 (50%)	12 (50%)
2	NON ALLERGIC	81 (61.36%)	45 (55.5%)	36 (44.4%)
NEOPLASTIC POLYPS				
1	BENIGN	17 (12.8%)	11 (64.7%)	6 (35.3%)
2	MALIGNANT	10 (7.57%)	5 (50%)	5 (50%)

TABLE NO.2 - AGEWISE DISTRIBUTION OF POLYPOIDAL MASSES

AGE	NON NEOPLASTIC				NEOPLASTIC										
		NON ALLERGIC			BENIGN						MALIGNANT				
	ALLERGIC	NON SPECIFIC	FUNGAL	RHINOSPORIDIASIS	SINONASAL PAPILLOMA	ANGIOMA	ANGIOFIBROMA	SOLITARY FIBROUS TUMOUR	OSSIFYING FIBROMA	PLEMORPHIC ADENOMA	SQUAMOUS CELL ARCINOMA	ADENOID CYSTIC CARCINOMA	INTESTINAL TYPE ADENOCARCINOMA	SINO-NASAL UNDIFFERENTIATED CARCINOMA	AMELOBLASTIC CARCINOMA
0 – 10		2				1		1							
11 - 20	2	13				2									
21 - 30	8	28	2	1	2						1				
31 - 40	6	7			1	1	1				1	1		1	
41 - 50	1	11	1		2	2							1		
51 - 60	4	7	1						1	1	2				1
61 - 70	3	5	2	1							1	1			
71 - 80						2									
TOTAL	**24**	**73**	**6**	**2**	**5**	**8**	**1**	**1**	**1**	**1**	**5**	**2**	**1**	**1**	**1**
	18.1%	**55.3%**	**4.5%**	**1.5%**	**3.7%**	**6%**	**0.75%**	**0.75%**	**0.75%**	**0.75%**	**3.7%**	**1.5%**	**0.75%**	**0.75%**	**0.75%**

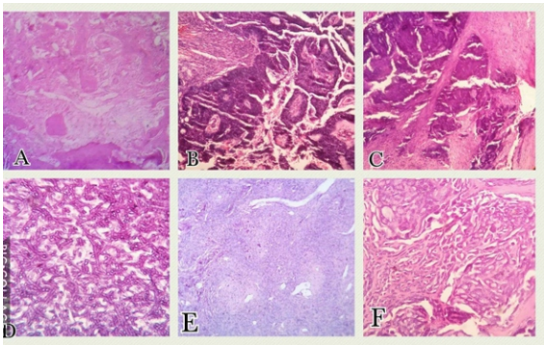

FIGURE-1 A) Ossifying Fibroma showing bony trabeculae and spindle cell proliferation B)Ameloblastic carcinoma- Tumour islands exhibiting cytological atypia C)Sinonasal undifferentiated carcinoma showing sheets of undifferentiated cells D)Aspergillus –Septate hyphae with acute angled branching E)Solitary fibrous tumour showing haemangiopericytic blood vessels and fibroblastic spindle cells in a collagenous background F)Adenoid cystic carcinoma – Basaloid cells with cribriform spaces

DISCUSSION:

The Nose and paranasal sinuses are involved in a wide variety of pathological conditions. Our study included 132 polypoidal lesions of nasal cavity and paranasal sinuses in a period of 3 years. Simple polyp (non neoplastic) 79.5% formed. the largest group followed by neoplastic polyps (20.45%). These observations were consistant with other studies [5,1,3] . In the presnt study the mean age of presentation comes out to be 36.3 years .Sharma R et al had reported a peak incidence of 31.5 years[6] and Bakari et al reported mean age of 33 years[7] while for Zafar et al mean age of presentation was 22.5 years[8]. Sinonasal masses had slight preponderance of males than females in concordance with previous reports. In the present study,there were 74 males and 58 females with M:F ratio of 1.2:1.Zafar et al study showed male to female ratio of 1.7:1. Lathi et al reported male to femalr ratio of 1.5:1[9] and Sharma et al found male to female ratio of 1.38:1[6].On the contrary observations of Bakari et al is at variance of male to female ratio 1:1.2[7].

Majority of our patients presented with nasal obstruction and rhinorrhea comparable with other studies [7]. Among the non neoplstic polyps Inflammatory polyp constitutes 55.3% followed by allergic polyp (18.1%) fungal sinusitis (4.5%) and rhinosporidiasis(1.5%). Cases of mucormycosis and Aspergillus have been reported in our study .Tondon et al has observed 24% of Rhinosporidosis in their study[10] but only1.5% has been noted in our study. Both allergic and nonallergic polyps are found to have peak incidence in 2-3 rd decade.

Neoplastic polyps were common in males in accordance with other studies[5] .Benign neoplasm constitute 12.8% and malignant neoplasm constitute 7.57% in our study. The prevalence of malignant sinonasal polyp in our study is comparable with that of Rawat et at[11] whereas Bakari et al has observed only 2.6% cases in their study[7].

Among benign neoplastic sinonasal masses Angioma was observed in 8 cases (6%)followed by Sinonasal papilloma 5 cases(3.7%) , Angiofibroma and pleomorphic adenoma each contributing 0.75%. Capillary angioma was considered as commonest benign neoplasm in our study (6%) whereas Bakari et al has observed only 2.6% in their study[7]. In the same way, Inverted papilloma 3% with male predilection has been observed in our study whereas Bakari et al have observed 14.5% cases of Inverted papilloma with female predilection[7].

Solitary fibrous tumour is an uncommon fibroblastic lesion that often arises in nasal cavity or paranasal sinuses in hesd and neck region [12].We have encountered one case of Solitary fibrous tumour in a 9 years boy in our study. Another case of rarity Ossifying fibroma has been documented in our study in accordance with previous studies[8] .Chavan et al has observed 12.24% cases of Angiofibroma [13].in contrast only one case (0.75%) has been observed in our study. The incidence of Pleomorphic adenoma is lower in the upper respiratory tract such as the nasal cavity,maxillary sinus and nasopharynx[14].We have reported one case of Pleomorphic adenoma in a 55 years old female in our study.

Carcinoma of nasal and paranasal sinuses accounts for approximately 3% of head and neck cancers[7]. Squamous cell carcinoma is the most common sinonasal malignant neoplasm noted in our study in accordance with literature. We have observed 5 cases (3.7%) of Squamous cell carcinoma predominantly in 6-7th decade with male predilection. Unusual variants of Squamous cell carcinoma like basaloid Squamous cell carcinoma and sarcomatoid carcinoma also have been reported in our study. 2.85%and 8% of Squamous cell carcinoma have been reported in other studies[5,6].

Adenocarcinomas accounts for approximately 10% -20% of all sinonasal malignancies Of the salivary type tumours Adenoid cystic carcinoma is most common.[15]. Sam M.Wiseman et al have stated 5-15% of all paranasal malignancies constitute Adenoid cystic carcinoma[16]. We have observed 2 cases (1.5%) of Adenoid cystic carcinoma in females in our study, of which one case showed features of de-differentiation a rare entity.

We have also recorded cases of sinonasal undifferentiated carcinoma and Intestinal type adenocarcinoma each constituting 0.75% in our study.

Ameloblastoma can present as a primary neoplasm in sinonasal region but malignant transformation is very rare .In correlation with the studies of Angiero et al[17] ,we have observed a case of ameloblastic carcinoma in maxillary sinus that has potential for recurrence at numerous instances.

CONCLUTION:

Sinonasal masses comprises predominantly non-neoplastic polyps yet a variety of benign and malignant lesions are evident. Early recognition, referral and histopathological correlations lead to prompt diagnosis and appropriate management.

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