Research Paper

Volume : 3 | Issue : 9 | September 2014 • ISSN No 2277 - 8179

Histopathological Pattern of Sinonasal Masses Reported in A Tertiary Level Hospital

Medical Science

KEYWORDS : Sinonasal mass, angiofibroma, nasal polyp, squamous cell carcinoma, hemangioma

*** Dr. Usha Sarma** — Resident, Department of Pathology Gauhati Medical College, Guwahati -32 *Corresponding author

Dr. Surajit Kumar Roy — Associate Professor, Department of Pathology Gauhati Medical College, Guwahati -32

ABSTRACT

Nasal obstruction with or without nasal discharge is one of the commonest clinical presentation of sinonasal mass though they have various differential diagnoses. Benign lesion arising from this site may threaten the patient because of high recurrence rate and propensity for malignant potential.A six years retrospective hospital based study was carried out in patients attending ENT department of a tertiary level hospital from north east India with the aim to evaluate the histopathological pattern of sinonasal mass . A total 194 cases were included out of which 59.0% cases were nasal polyp , 38.4% cases were benign tumour and 2.6% cases were malignant lesion. Angiofibroma was the commonest benign tumour detected. Squamous cell carcinoma was the most common malignant tumours. One case of adenoid cystic carcinoma and one case of melanoma were also detected during study period.

Introduction

The nasal cavity, paranasal sinuses and nasopharynx form a functional unit that is reflected in the commonality of the pathological processes that involves the region. This is particularly the case for the first two sites, which are often grouped under the term "Sinonasal"[1]. Sinonasal mass is a common finding in the Otorhinolaryngology Department. It is found in almost all age groups of people. These masses may be inflammatory including allergic, traumatic, granulomas or may be neoplastic[2].

Nasal polyps are the most common nasal masses, which are characterised by bulging of oedematous mucosal connective tissue covered by respiratory epithelium[3]. They are not true neoplasms. Their formation is associated with inflammation, allergy or mucoviscidosis1. Among the benign neoplastic condition, Sinonasal papilloma, Haemangioma and angiofibroma are commonly found in and within nasal cavity. Malignant tumours in the nasal cavity and paranasal sinuses account for less than 1% of all carcinomas and for about 3% of the neoplasms of the head and neck regions[4]. Squamous cell carcinoma is the most common microscopic type of sinonasal neoplasm affecting the nasal skin and nasal cavities[3]. Adenocarcinomas of various types comprise 10% to 20% of all primary malignant neoplasms of the nasal cavity and paranasal sinuses[5]. Adenoid cystic carcinoma usually occurrs in the maxillary sinus and nasal cavity[5]. Mucosal melanoma of the head and neck accounts for less than 1% of the cases in this site[6]. Their most common location is the nasal cavity followed by antrum, ethmoid and frontal sinuses. They arise from melanocytes located in the epithelium and stroma of the respiratory mucosa[1]. considering the importance of complex anatomy of sinonasal tract and its clinical presentation the present study " A Histopathological Study of Sinonasal Masses " was planned and has been undertaken in the Department of Pathology of Gauhati Medical College, Guwahati for a period of six year from July 2007 to June 2013.

Materials and Methods:

This is a retrospective analytical review of all the patients with sinonasal masses that underwent surgical intervention in Gauhati Medical College Hospital over a 6 year (2007-2013) period. Data regarding their clinical profile and histological diagnoses were collected from the medical records departments and records of Biopsy reports from the pathology department. A total 194 cases of sino nasal mass underwent biopsy interpretation. The specimens were fixed in 10% formalin and sent to the morbid pathology section. The specimens were observed grossly and findings were noted in the note sheet. The biopsy tissue were then sectioned and processed in the conventional manner as described by J D Bancroft and Marilyn Gamble7. After completion of processing, they were then made in paraffin blocks and cut in rotatory microtome of about 3- 5µ thickness. The sections were stained by conventional Haematoxylin and Eosin, mounted in DPX and examined under Light microscope and their special features were noted. Immunohistochemical method was utilised in difficult cases to pinpoint the diagnosis.

Results and Observations:

Out of 194 cases, 115 cases (59.0%) were inflammatory, 75 cases (38.4%) were benign tumours and 5 cases (2.6%) were malignant tumours (Cite Figure 1). It was bilateral in 21.31%, left side in 40.98% and right side in 37.70% patients . The age of the patients ranged from 5 to 60 yrs with a mean age of 33 yr . Majority of the patients were in the age groups 11-20 yrs (Cite Table1). There were 118 male and 76 female with M: F ratio of 1.56:1 (Cite Figure 2). The common presentation of the sinonasal masses were nasal obstruction (97.3% cases), rhinorrhoea (49.1%), hyposmia (31.3%) and headache (16.9%). Epistaxis was noticed in 17.9% of cases. Among the benign neoplastic lesion, angiofibroma (16.49%) was the commonest tumour encountered in the present study followed by hemangioma (14.43%) . Among the malignant cases, squamous cell carcinoma was the commonest malignant tumour. One case each of adenoid cystic carcinoma and mucosal melanoma were also detected during the study period (Cite Table2).

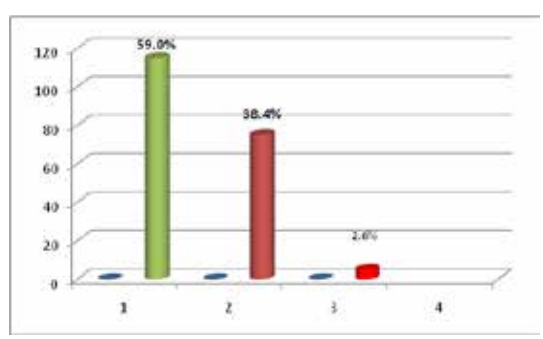


Figure 1. Pathology of Sino nasal mass according to clinical behaviour of the disease

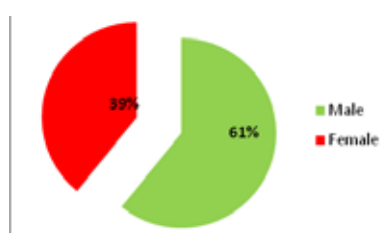


Figure 2: Sex Distribution of diseases producing sinonasal mass

TABLE 1: Age Distribution of Patients presented with sinonasal mass

Age Range	No. of Cases(n=194)	%
1-10	16	8.24
11-20	68	35.05
21-30	46	23.37
31-40	40	20.06
41-50	13	6.70
51-60	11	5.6

TABLE 2: Biopsy Interpretation of sinonasal mass (n=194)

Diseases producing Sinonasal mass	No.Of cases	Percentage (%)
Antrochoanal polyp	79	40.72
Ethmoidal polyp	34	17.53
Angiofibroma	32	16.49
Capillary haemangioma	28	14.43
Inverted papilloma	13	6.70
Neurofibroma	3	1.54
Squamous cell carcinoma	3	1.54
Malignant melanoma	1	0.52
Adenoid cystic carcinoma	1	0.52

Discussion

Nasal obstruction with or without nasal discharge is one of the commonest clinical presentation of sinonasal mass though they have various differential diagnoses. Benign lesion arising from this site may threaten the patient because of high recurrence rate and propensity for malignant potential. The present study revealed that nasal polyps are the commonest sinonasal masses similar to the findings of other authors like Humayun et al(2010), A . Lathi et al(2011) and Seema et al(2013). Among the benign neoplastic lesion, angiofibroma (16.49%) was the commonest followed by hemangioma (14.43%). Nasal angiofibroma is a benign tumour of adolescent male with episodes of epistaxis and nasal obstruction as clinical presentation. Similar picture is reflected in the present study too [2,3,8] . Epistaxis was the commonest clinical presentation in all cases of capillary hemangioma (100%) followed by nasal obstruction (80%) and mass effect in nasal cavity (60%) of the cases. In the present study 13 cases of inverted papilloma were found to produce mass in the sinonasal region constituting 6.7% of the cases. Three cases of Squamous cell carcinoma were detected in the present study . All these squamous cell carcinoma cases belonged to male sex and in 51-60 years age group. They presented with rapid onset nasal mass with nasal discharge and occasional bouts of bleeding per nose. Humayun et al (2010) in their study reported an incidence of 41.67% (5 out of 12 cases) among malignant masses with average age at diagnosis of 51years and male predominance [2]. Svane-Knudsen et al,(1998) have similarly reported squamous cell carcinoma to be the most commonly encountered malignancy of sinonasal tract in Denmark9 . The present study also detected squamous cell carcinoma to be the commonest. similar findings were reported in studies by Humayun et al & Seema et al [2. 8] . The present study revealed a single case of adenoid cystic carcinoma occurring in a 38 year old male patient. He presented clinically with nasal obstruction and epistaxis for 3 months. According to Damjanov and Linder12 adenoid cystic carcinoma accounts for 3-10% of all salivary gland neoplasms and most cases occurs in the fourth to sixth decades of life. It also account for 5-15% of all malignant paranasal neoplasms12. The present study also detected a single case of malignant melanoma occurring in a male patient of age 47 years. According to Kailash et al16 mucosal melanoma forms roughly 4% of head and neck melanoma cases, and comprise 3.5% of all malignancies in the sinonasal region. Leena Jain in her study reported a case of mucosal melanoma of the sinonasal region in a male patient of 45 years[6]. For confirmation of malignant melanoma, immunohistochemistry with marker S100 Protein and HMB45 were utilised as an additional adjunct.

Conclusion:

Sino nasal mass forms a wide spectrum of lesion ranging from non neoplastic inflammatory condition like nasal polyp either inflammatory or allergic type to neoplasm like angiofibroma, capillary hemangioma in one end while squamous cell carcinoma at the other end of the spectrum. Rare tumour like mucosal melanoma was also detected in the study. The main strength of the study is that it gives the histopathologic pattern of the current state of sino nasal mass. Histopathological examination is conclusive in diagnosing the exact polypoid lesions .It is the only means of determining the nature of the disease, i.e. inflammatory versus neoplastic. It is a hospital based study which might not reflect the exact scenario of the population at large. It is the limitation of the study. However, it should be stated that all sinonasal lesions need histopathological examination for proper diagnosis and follow up of patients .

Acknowledgement :

The authors acknowledge the help and co-operation received from Dr. Gautam Kumar Pathak, MS. Assoc. Professor ENT Deptt, Gauhati Medical College, and all the technicians of Histopathology Section, Pathology Deptt, Gauhati Medical College. while conducting the present study.

REFERENCE

1. Juan Rosai . (2011). Rosai & Ackermann's Surgical Pathology, 10th edition, vol: 1, chapter 7, page no. 291-318. | 2. Humayun AHM, Zahurul Huq AHM, Ahmed SMT, et al. Clinicopathological study of sinonasal masses. Bangladesh J Otorhinolaryngol 2010; 16:15-22. | 3. A. Lathi, M.M.A. Syed, P. Kalakoti, D. Qutub, S.P. Kishve . Clinico-pathological profile of sinonasal masses: a study from a tertiary care hospital of India, ACTA otorhinolaryngologica italica 2011; 31:372-377. | 4. Guardiola MI, Sancho MM, Burgos SA, et al. Twenty years of retrospective Study of malignant para nasal sinus tumours. Acta Otorinolarynol. Esp . 1998: 49(4): 289-292. | 5. Ilmo Leivo, Update on Sinonasal Adenocarcinoma: Classification and Advances in Immunophenotype and Molecular Genetic Make-Up, Head Neck Pathol. 2007 September; 1(1): 38–43. | 6. Primary Mucosal Malignant Melanoma of Sinonasal tract: A Case Report ; Dr. Leena Jain; Journal of Orofacial Research; Volume 1: Issue 1 : 2011 | 7. John D. Bancroft and Marilyn Gamble. Theory and Practice of Histological Techniques | 8. Seema K. Modh et al Histopathological spectrum of sinonasal masses-A study of 162 cases, Int J Cur Res Rev, Feb 2013 / Vol 05 (03), pg 83-91 | 9. Svane-KnudsenV1, Jørgensen KE, Hansen O, Lindgren A, Marker P.Cancer of the nasal cavity and paranasal sinuses: a series of 115 patients. Rhinology. 1998 Mar;36(1):12-4. | 10. Damjanov and Linder J.: Anderson's Pathology, 10th ed., 1996. | 11. Kailash Narasimhan, M.D., Omer Kucuk, M.D et al; Sinonasal Mucosal Melanoma: A 13-Year Experience at a Single Institution; Skull Base. 2009 July; 19(4): 255–262. |