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Polypoid Mass of Nasal Cavity and Paranasal Sinus- not Always Inflammatory Origin

KEYWORDS: nasal obstruction, Epistaxis, angiofibroma, nasal polyp, squamous cell carcinoma, capillary hemangioma

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ABSTRACT *Abstract: Aim of the study was to evaluate the differential diagnosis of polypoid sino nasal mass. Seventy four numbers of patient attended ENT department of a tertiary level hospital with sinonasal mass with or without nasal discharge. All the cases presented with polypoid mass and underwent surgical intervention. Ten percent formalein fixed specimens were sent to the histopathology section for biopsy interpretation. Among them, 47 cases (63.51%) showed non- neoplastic change and comprised of nasal polyp. Twenty seven cases (36.49%) were diagnosed to have neoplastic lesion. Angiofibroma was the commonest tumour . Three cases of malignant tumours was also detected. It is a hospital based study which might not reflect the exact scenario of the pattern of sinonasal mass in 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.*

Introduction

Polypoid masses are common clinical presentation by patients attending Ear, Nose and Throat outpatient department of any hospital. Most patients present with complaints of nasal obstruction [1]. Other symptoms include nasal discharge, epistaxis and disturbances of smell. A sinonasal mass can have various differential diagnoses starting from inflammatory pathology to neoplastic entity being either benign common tumours like angiofibroma and capillary hemangioma to the most aggressive tumours like squamous cell carcinoma. Most common nasal mass lesion is nasal polyp. 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 mucoviscidosis[1]. 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[2] . Squamous cell carcinoma is the most common microscopic type of sinonasal neoplasm affecting the nasal skin and nasal cavities[3]. The present study was undertaken with an aim to evaluate the differential diagnosis of sinonasal mass presented clinically in Gauhati Medical College and Hospital over a period of one year.

Materials and Methods

The study was for a period of one year from July 2012 to June 2013. The patients of all age groups of both sexes presenting with nasal symptoms and who on anterior rhinoscopy revealed presence of mass in either or both nasal cavities were included in the study group. Patients presenting with nasal mass of intracranial origin such as basal meningocoele, basal meningo–encephalocoele and nasal glioma or congenital nasal mass were excluded in the study. The study group comprised of patients of all ages and both sexes, who underwent surgical intervention . A total 74 cases underwent surgery and biopsy specimens were fixed in 10% formalein solution. The removed specimens were noted macroscopically and subjected to histopathological study in the Department of Pathology of Gauhati Medical College, Guwahati. 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 Gamble[4]. 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

Nasal obstruction (94.59%) and nasal discharge (51.35%) are the commonest symptoms of sinonasal masses followed by epistaxis (35%) and headache (28%). Out of the 74 cases, 47 cases (63.51%) showed non- neoplastic or benign pathologic change and 27 cases (36.49%) were diagnosed to have neoplastic lesion. The age ranged from 8-60 years. Maximum numbers of non-neoplastic lesions were found between the age group of 11 to 30 years, while neoplastic lesions were between 11 to 20 years .It is observed that there is male preponderance in both the groups (male : female ratio 2.08:1.)

The histological interpretation of sinonasal mass found in the present study are shown in Figure 1. .

Forty seven cases of nasal polyp were found to be in age ranging from 8 to 60 years out of which, 29 cases clinically diagnosed as antrochoanal polyp 25(86.20%) were reported as inflammatory polyp and out of 18 cases clinically diagnosed as ethmoidal polyp 15 (83.33%) were reported as allergic polyp based on more amount of eosinophils in the allergic polyp. Angiofibroma was the commonest benign tumour detected in young age group. Twelve cases of angiofibroma were found , majority of which (66.67%) belonged to the 11-20 years age group and all are male

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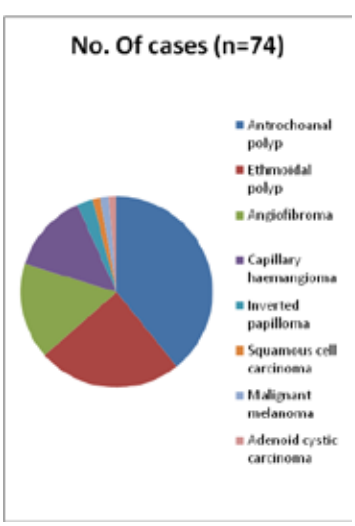
patients. Epistaxis and nasal obstruction were present in all the cases.

Malignant neoplasms were found in 3 out of 27 cases in neoplastic group, the age of the patients ranged from 38 to 54 years with a mean age of 46.34 years with all case occurring in adult males. On local examination a soft, pale, friable mass was seen in the right nasal cavity. Histopathologically it was diagnosed as well differentiated squamous cell carcinoma.The second patient was a 47 year old male presented with nasal obstruction and recurrent epistaxis for 6 months. On local examination a soft, friable, blakish mass was seen completely obstructing the right nasal cavity. CT finding revealed mass lesion filling the right nasal cavity attached to the medial wall of the maxillary sinus. Grossly the tissue appeared blakish and was friable. Microscopic examination revealed large pleomorphic cells with abundant eosinophilic cytoplasm containing brownish melanin granules. Neoplastic cells were arranged in nests and sheets. immunohistochemistry for confirmation. S-100 and HMB 45 was done and it showed strong positivity thus confirming the histopathological diagnosis of malignant melanoma. The third patient was a 38 year old male presented with nasal obstruction and epistaxis for 3 months. On local examination a polypoidal, friable and pale mass was seen in the right nasal cavity. CT finding revealed mass lesion in right maxillary sinus and filling the right nasal cavity. Grossly it appeared pale and was soft and friable. Microscopic examination revealed a cribriform pattern consisting of nests and columns of bland appearing cells that are arranged concentrically around gland-like spaces. Histopathologically it was thus diagnosed as adenoid cystic carcinoma.

Figure 1.Pie Diagram showing distribution of Sinonasal mass lesion



Ten cases of capillary haemangioma were found to produce polypoid mass in the sinonasal area and recurrent epistaxis. The age of the patients ranged from 9 years to 40 years in the study. The majority of cases belonged to 11-30 years age group. The majority of cases (60%) in the study group were males. Two cases were diagnosed of inverted papilloma.

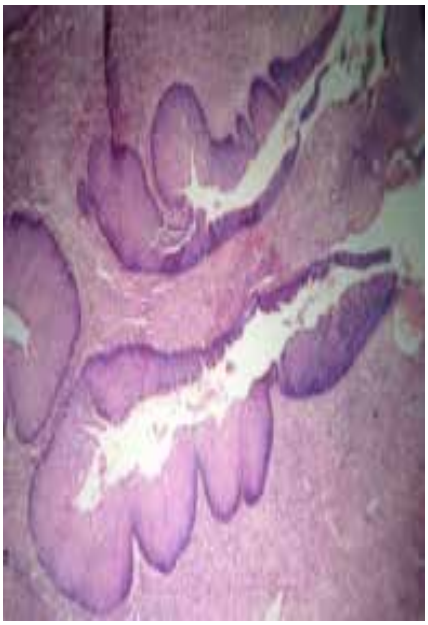


Figure 2. Histology of Inverted Papilloma

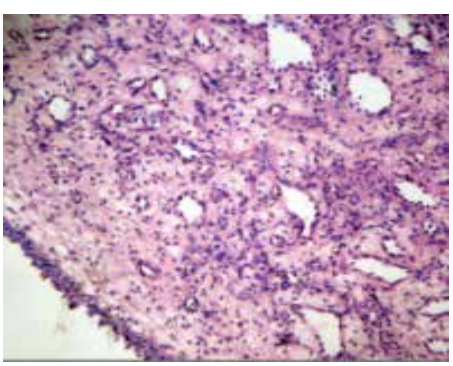


Figure 3. Angiofibroma

Discussion

For a definite diagnosis of sinonasal mass, we should consider the clinical presentation of the patient. Apart from age factor and sex factor clinical behaviour of the sinonasal mass is very important. Angifibroma is always a tumour of young adolescent boys. Similarly malignant lesion is usually detected at an older age group. Patients diagnosed of angiofibroma and hemangioma cases presented with recurrent epistaxis along with nasal mass. Histopathological study helped to give a definite diagnosis in this regards. In our study it is seen that non-neoplastic lesions formed the majority of cases (63.51%) which is similar to the study done by Bist SS et al(2012)[5] who reported 60% of sinonasal masses to be non-neoplastic. Similar findings were also reported by Seema K. Modh et al(2013)[6] and A.Lathi et al(2011)[3] in their study. Humayun AHM et al[7] in their study reported an increase number of antrochoanal polyp than ethmoidal polyp. The present study revealed that the antrochoanal polyp were more common than the ethmoidal polyp . Schramm VL Jr et al[8] in their study also reported an increase number of antrochoanal polyp and in younger age group. Malignancy was noted in 3 cases (3/74) comprising 4.05% of the total cases (Cite Table 1). All the cases clinically presented with nasal obstruction and epistaxis for short duration. In our study, frequency

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of different malignant category was equal. One case each of squamous cell caecinoma, adenoid cystic carcinoma and sino nasal melanoma were detected. Possibility of getting less numbers of squamous cell carcinoma might be due to shorter duration of study period or the patient suspected to have malignant lesion might have attended the nearby regional cancer institute directly . According to Damjanov and Linder[9] 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 accounts for 5-15% of all malignant paranasal neoplasms[10]. The present study also detected a single case of malignant melanoma occurring in a male patient of age 47 years. According to Kailash et al[10] 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[11].

Conclusion

A sinonasal mass can have various differential diagnoses starting from inflammatory pathology to neoplastic entity being either benign common tumours like angiofibroma and capillary hemangioma to the most aggressive tumours like squamous cell carcinoma. Though inflammatory nasal polyp is the commonest in this study, neoplastic entity was also diagnosed including sino nasal melanoma. It was easy to diagnose melanoma when pigmented. That is why, it may be suggested that polypoid mass is not always inflammatory in type. We may encounter several mimics which are confirmed by histology. 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. .

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