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CLINICO-PATHOLOGICAL STUDY OF SINONASAL MASSES

Medical Science

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ABSTRACT

INTRODUCTION: The nose is the most prominent part of the face with substantial aesthetic and functional significance. It is one of the few organs of body invested with an aura of emotional and cultural importance. Anatomical location of the nose and it passage have been regarded as the direct avenue to the brain, man's source of intelligence and spirituality.

AIMS AND OBJECTIVES: To study the incidence, clinical presentation and pathological profile of various types of sinonasal masses at Tata Main Hospital, Jamshedpur, Jharkhand.

To detect the variation of clinical presentation of sinonasal masses in relation to Age, Sex, Risk factors and Occupation, clinical presentation and the histopathological diagnosis of sinonasal masses. Compare the results of this study with the results of the previous workers.

MATERIAL & METHODS: This Prospective, observational study was done in the department of Otorhinolaryngology, Tata Main Hospital, Jamshedpur, Jharkhand. 90 patients presenting with the features of nasal obstruction, nasal discharge, headache, anosmia / hyposmia, epistaxis, facial deformity, ear & eye symptoms will be evaluated by taking history and thorough ENT and head and neck examination(including nasal endoscopy) and subjecting them for the procedure.

RESULT: Out of 90 patients, 59(65.56%) were males and 31(34.44%) were females. In our study, among non neoplastic masses 34 were male and 26 were female. For non-neoplastic lesions the average age of presentation was 36.2 years. Mean age of presentation was 37.21 years.

CONCLUSION: Emergence of newer surgical, medical and radiological intervention have open up a new chapter with these type of patients. . Awareness regarding the disease process and health education should be provided to people regarding smoking, maintenance of hygienic condition and utilization of health facilities.

KEYWORDS

Clinico-pathological, Sinonasal Masses, Risk Factors

INTRODUCTION

The nose is the most prominent part of the face with substantial aesthetic and functional significance. It is one of the few organs of body invested with an aura of emotional and cultural importance. Anatomical location of the nose and it passage have been regarded as the direct avenue to the brain, man's source of intelligence and spirituality[1].

Most patients present with complaints of nasal obstruction, nasal discharge, sneezing, disturbances of smell, epistaxis, ophthalmic complaints like epiphora, proptosis, diplopia and visual disturbances. Facial swelling, pain headache and snoring with sleep apnoeic spells are not infrequent findings in patients with massive sinonasal masses[2].

Sinonasal area is exposed to various infective agents, chemicals, antigens, mechanical and many other influences. These deleterious exposures lead to formation of tumour like and neoplastic conditions. They can range from simple nasal polyps to infective polypoidal, granulomatous lesions to malignant lesions. Nasal polyps are the most common cause of nasal obstruction with 4% of prevalence rate. Their exact pathogenesis is unknown but they have association with allergy, asthma, infections and aspirin sensitivity[3].

Though the nasal cavity and paranasal sinuses occupy a relatively small anatomical space, they are the site of origin of some of the more complex, histologically diverse group of tumors in the entire human body. Moreover they vary widely depending on the age, occupation, addiction habits and other environmental factors related to the patient. Thus they provide a challenging as well as interesting area for detail study for both the Histolopathologist as well as the Otorhinolaryngologist.

This study aims to find out the occurrence of various masses arising from the sinonasal tract and nasopharynx, to categorize them into non-neoplastic and neoplastic (benign and malignant) and also to find the correlation between their various clinical modes of presentation and histological patterns and to compare their incidences[4].

To study the incidence, clinical presentation and pathological profile of various types of sinonasal masses at Tata Main Hospital, Jamshedpur, Jharkhand.

MATERIAL & METHODS:

A) STUDY AREA:

Department of Otorhinolaryngology, Tata Main Hospital, Jamshedpur, Jharkhand.

B) STUDY POPULATION:

90 patients presenting with the features of nasal obstruction, nasal discharge, headache, anosmia / hyposmia, epistaxis, facial deformity, ear & eye symptoms was evaluated by taking history and thorough ENT and head and neck examination(including nasal endoscopy) and subjecting them for the procedure (Diagnostic nasal endoscopy, FESS, Caldwell luc) and biopsy for histopathologic examination after obtaining the written informed consent from June 2015 to May 2017.

F) INCLUSION CRITERIA:

1. Patients who presented with features of nasal obstruction, nasal discharge, headache, anosmia / hyposmia, epistaxis, facial deformity, ear & eye symptoms.
2. Patients who presented with mass in sinonasal cavity or mass diagnosed after complete clinical examination (including endoscopic evaluation) were selected for this study.

G) EXCLUSION CRITERIA:

1. Patients presenting with congenital masses(dermoids, glioma and encephaloceles)
2. Patients presenting with nasal mass of intracranial origin as meningocele, meningoencephalocele etc.
3. Patients not willing to give consent.

RESULT

We found that out of 90 patients, 59(65.56%) were males and 31(34.44%) were females. In our study, among non neoplastic masses 34 were male and 26 were female. Out of 90 patients, only 11 patients were of less than 20 years. 22 patients were between 21-30 years, 20 patients were between 31-40 years and 21 patients were of 41-50 years age group. 6.67% of total cases belonged to higher age group 61-70 years. Amonmg non neoplastic group 28.37% of patient were among age group of 21-30 years.38.89% of malignant lesions were among age group of 41-50 years.

In this study average age of presentation for benign tumours (28.5 years) and malignant tumors (46.39 years). For non-neoplastic lesions the average age of presentation was 36.2 years. Mean age of presentation was 37.21 years. Out of 90 cases 60(66.66%) were non neoplastic, 12(13.33%) cases were benign and 18(20%) cases were malignant. Out of 90 patients 21 were office workers followed by 15 industrial workers, 14 house wives,13 labourers,10 students,9 teachers and 8 businessman.

Our study showed that the duration of symptoms patient came with were divided into 5 categories:- 1-6 months, 6months- 1 year,1-2 year,2-3 year and more than 3 year was considered as longer duration of symptoms. Out of which 12 patients presented within 1-6 month.48 patients came between 6 months-1 year of duration. Most of the patients (48 out of 90) presented to the ENT department between 6 months to one year. In our study nasal obstruction was the most common presentation(94.33%), nasal discharge was present in 75.56% followed by hyposmia (57.78%), headache in 50% patients. Palatal bulging was least common presentation in 8.89% patients.

We showed that out of 90, 44(44.89%) patients with sinonasal masses had history of smoking and 32(35.56%) patients had a habit of alcohol intake.24(26.67%) out of 90 patients had a history of allergy.7 out of 9 patients of rhinopsoridiosis had a history of pond bathing. 25 patients had a history of previous operation. In our study most of the lesions were arising from nasal cavity. 27(30%) cases had lesions on RT nasal cavity,17(18.89%) on lt nasal cavity. We also had 31(34.44%) patients with B//L nasal cavity lesions. Nasopharynx was involved in 11 patients. Ethmoid sinus was involved in 1 patient and maxillary sinus was involved in 6 patients.

In our study we observed that polyp was the most common non neoplastic lesion(51.1%) followed by rhinosporidiosis(10%). Hemangioma was the commonest benign lesion. Among the malignant lesion incidence of squamous cell carcinoma was highest(13.33%). In this study ethmoidal polyp was most common lesion, followed by antrochoanal polyp and rhinosporidiosis. Among malignant cases incidence of CA maxilla and CA nasopharynx were equal(5.56%).

DISCUSSION

The present observation was conducted in the Department of **Otorhinolaryngology** in **Tata Main Hospital,** Jamshedpur. The selection of case was carried out from the patients reporting to the outpatient Department of Otorhinolaryngology. 90 patients were selected for the study from **June 2015 to May 2017** and various sinonasal masses were diagnosed. Variation in clinical presentation in relation to age, sex, risk factors and occupation along with various sites of involvement were analyzed. The results in this study were in concurrence with most of the reviewed studies.

In our study, males were seen to predominate over females with a ratio of 1.9 : 1 which was similar to study done by Zafar et al[5] who found male: female ratio of 1.7: 1. The sex incidence with male preponderance was similar to other studies too. Among the non-neoplastic cases the male to female ratio was 1.3:1 and amongst the neoplastic cases the male predominance was higher 5:1.

Inverted papillomas presented in second and third decades with nasal obstruction, mass and epistaxis. Microscopically, they were composed of invaginations of squamous epithelium into the underlying stroma. Angiofibromas were seen in 2nd decade with the microscopy of intricate mixture of blood vessels and fibrous stroma. Other benign lesions, capillary hemangioma and schwannoma presented in third to fourth decades with characteristic microscopic picture.

Nasopharyngeal masses are not an uncommon entity. Such masses either arise from nasopharynx or from neuroectoderm or nose and paranasal sinuses and present as mass in nasopharynx. Such patients present with nasal obstruction, mouth breathing, epistaxis and earache. In the present study, majority of nasopharyngeal masses were of nasopharyngeal CA followed by 3 cases of nasopharyngeal angiofibroma in contradiction to Scholtz AW et al (2001) reporting antrochoanal polyp as the commonest nasopharyngeal masses[6].

Among 18 malignant cases, squamous cell carcinoma constituted majority of 12 cases (13.33%) comparable two cases of olfactory neuroblastoma (2.22%), one case of adeno carcinoma(2.22%) and two cases of lymphoma(2.22%).

Regarding occupation it is observed that the incidence of sino-nasal mass is more amongst the office worker, industrial worker and labourer in male group of patients and in female group the incidence is found more amongst housewife. Another thing is observed that, the incidence of Sino-nasal mass is more in patients living in poor socio-economic status. This was in accordance with study done by Cann et al[7].

In our study the presenting symptoms in order of most common presentation were nasal obstruction in 93.33% patients and was the most important presenting feature for sinonasal masses as most cases presented late, next was nasal discharge in 75.5% patients followed by epistaxis (44.4%) which was seen from occasional bleeds in inflammatory polyp to recurrent and severe bleeding in angiofibroma and rhinosporidiosis. We observed that headache was present in 50% and hyposmia in 57.5% of patients. These findings compare favourably with other studies done Dasgupta et al[8].

In our study, proptosis was seen in 10% of cases, whereas others studies by Iqbal et al and Das et al reported the incidence of 5.88% and 24% [9,10]. Proptosis in our study was mostly seen in neoplastic lesions (30%) which was in accordance with similar study[10]. In present study, vision was absent in 3.33% and reduced in 6.66% of patients. A similar study reported loss of vision in 1.96% of the patients[9]. Loss of vision in our study was seen in malignant lesions (25%) in which either orbit was involved by the sinonasal mass and caused stretching of optic nerve or when there was intra-cranial extension of mass involving the optic nerve pathway.

Past history of previous operations was documented in 25 out of 90 patients. Most of the cases of Ethmoidal polyps were operated for one or more times. This is in agreement with the observations of Zafar et al who stated that recurrence may occur after polypectomy[5]. It is probable that during intranasal removal one or more small polyp may remain unattended and due to incomplete removal, recurrence may occur. Persistence of the causative factors like allergy also may be the cause of recurrence.

3 out of 9 cases of Rhinosporidiosis were operated previously. This is probably due to the incomplete removal or fresh infection after complete removal.

In this study 7 out of 9 patients of Rhinosporidiosis were pond bathers, which suggests that the infection through infected pond water is an important factor. This finding was similar to the Madke B et al (2011) observation, which is, 90% of patients suffering from Rhinosporidiosis, have habit of pond bathing[11]. Cases other than Rhinosporidiosis does not have any significant association with pond bathing.

Nasal polyps were the commonest non neoplastic lesion of nasal cavity in our study. Its exact pathogenesis is not known but they have strong association with allergy, asthma, aspirin sensitivity and infection[8]. Out of 90 patients 24 patients had allergy as a risk factor in our study.

According to our study, maximum number of sinonasal masses were on right side (35.55%) followed by leftt side (25.55%) and (34.44%) were bilaterally present. This was in accordance with study done by Bakari et al where he reported bilateral sinonasal masses (44.7%) in majority of patients whereas the mass was located in right and left side in 31.6% and 23.6% patients, respectively[12].

In our study the duration of symptoms patient came with were divided into 5 categories:- 1-6 months, 6months- 1 year,1-2 year,2-3 year and more than 3 year was considered as longer duration of symptoms. Out of which 12 patients presented within 1-6 month. 48 patients came between 6 months-1 year of duration.

In this study, it was revealed that most patients of sinonasal mass presented to the hospital either within 6 months to 1 year (53.33%) or after 1 year of onset of symptoms (33.4%). This was seen because in case of malignant condition the symptoms were reported early by the patients as they were either nasal bleed or maxillofacial swelling. On the other hand, mild and chronic symptoms like nasal obstruction, nasal discharge, and headache were reported to the hospital only after they became troublesome. This observation was similar to the study done by Bist et al[13].

CONCLUSION

In the present study of masses in sinonasal cavity and nasopharynx, most of the time patients present with trivial nasal symptoms, and there is always a possibility to miss the diagnosis if great care is not taken while examining the patient. The findings must be interpreted in light of great clinical suspicion and complete ENT examination including radiologic and endoscopic studies.

Clinical diagnosis is often difficult and have to be relied on histopathological examination of biopsy specimen and may require repeat biopsies. Management of these patients is challenging due to varied presentation and lack of a definite protocol.

Timely diagnosis and early medical treatment will decrease the burden of morbidity and mortality in these patients. Sometime combined modalities of treatment should be used for effective treatment. Awareness regarding the disease process and health education should be provided to people regarding smoking, maintenance of hygienic condition and utilization of health facilities.

Emergence of newer surgical, medical and radiological intervention have open up a new chapter with these type of patients.

Sex distribution among the patients, Percentage of each type of lesion and Duration of symptoms shown among the patients

		No. of patients	Percentage
Gender	Male	59	65.56%
	Female	31	34.44%
Type of lesion	Non –neo plastic	60	66.66%
	Benign tumor	12	13.33%
	Malignant tumor	18	20%
	Total	90	100%
Duration of symptoms	1-6 months	12	13.33%
	> 6 months – 1 year	48	53.33%
	> I year – 2 year	24	26.67%
	> 2 year – 3 year	5	5.56%
	> 3 year	1	1.11%
	TOTAL	90	100%

Age distribution among the patients

Age (in year)	Non –neo plastic (n=60)		Malignant (n=18)		Benign (n=12)		Total (n=90)	
	No.	%	No.	%	No.	%	No.	%
11 - 20 year	6	10%	1	5.56%	4	33.33%	11	12.22%
21 - 30 year	17	28.33%	1	5.56%	4	33.33%	22	24.44%
31 - 40 year	16	26.67%	2	11.11%	2	16.67%	20	22.22%
41 - 50 year	12	20%	7	38.89%	2	16.67%	21	23.33%
51 – 60 year	5	8.33%	5	27.78%	0	0%	10	11.11%
61 – 70 year	4	6.67%	2	11.11%	0	0%	6	6.67%

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