

Original Article

Presentation of sinonasal carcinoma

Md. Momenul Haque¹, Mohammad Idrish Ali², Md. Harun-Ar-Rashid³, Md. Tariqul Islam⁴, Mujibur Rahman⁵, M. Allam Chowdhury⁶

Abstract

Objective: To observe the pattern of clinical presentation according to site of origin of sinonasal carcinoma.

Methods: This cross-sectional study was done in the Department of Otolaryngology-Head and Neck Surgery, BSMMU and Dhaka Medical College Hospital, Dhaka during the period from January 2008 to December 2009. Patients of sinonasal carcinoma were evaluated by detailed history, clinical examination and relevant investigations.

Results: The present study included 40 patients of sinonasal malignancy bearing age limits of 4 years to 75 years with mean age 48.29. Male and female ratio was 2.6:1. Most patients (77.5%) came from rural area and illiterate (40%) and most of them were farmers (40%), having poor socio-economic condition (50%). About 35% of them were smokers and more than one other personal habit. Majority patients presented with multiple sinuses involvements (72.5%) and among single sinus involvement maxillary sinus was most common (63.63%), followed by nasal cavity (27.27%) and ethmoidal sinus (9.09%) as primary site.

Conclusion: Though carcinoma of the nose and paranasal sinuses is relatively uncommon, it is not uncommon in our country. This disease generally presents in an advanced stage. Overall prognosis was directly related to diseases stages.

Key words: Clinical presentation, sinonasal carcinoma;

1. EMO, Department of Otolaryngology Head & Neck Surgery, DMCH, Dhaka.
2. Medical Officer, Department of Otolaryngology Head & Neck Surgery, BSMMU, Dhaka.
3. Residential Surgeon, Department of Otolaryngology Head & Neck Surgery, SSMCH, Dhaka.
4. Registrar, Department of Otolaryngology Head & Neck Surgery, DMCH, Dhaka.
5. Assistant Professor, Department of Otolaryngology Head & Neck Surgery, NMC, Dhaka
6. Associate Professor, Department of Otolaryngology Head & Neck Surgery, BSMMU, Dhaka.

Address of Correspondence: Dr. Md. Momenul Haque, EMO, Department of Otolaryngology Head & Neck Surgery, Dhaka Medical College Hospital, Dhaka, Mobile: 01727545669

Introduction

Carcinoma of the nose and paranasal sinuses are rare.¹ Sinonasal malignancies have an incidence of 0.5-1 per 1,00,000 per year. They account for 0.2-0.8% of all malignancies and 3% of all upper aero-digestive tract neoplasm. Most of the tumours develop in the 5th and 6th decades of life. The incidence in men is twice than that of women.²

Cancer of the paranasal sinuses occurs mainly in the maxillary and ethmoid sinuses. Because the maxillary sinuses provide room for the cancer to grow, most people do not develop symptoms until the cancer is fairly advanced.

They are most commonly found in whites, with the incidence in males being twice that

of females. Exposure to industrial fumes, wood dust, nickel refining process and leather tanning have been implicated in the carcinogenesis of certain types of sinonasal malignant tumours. Cigarette smoking and heavy alcohol consumption have long been known to increase the risk of head and neck malignancies, but no significant association has been shown with sinonasal cancer.³

Histologically most common sinonasal malignancy is squamous cell carcinoma (about 80%). Others include adenocarcinoma, adenoid cystic carcinoma, transitional cell carcinoma and neuroblastoma may occur but their incidences are less. Sarcomas are also rare and tend to occur at younger age and behave in a very malignant fashion. Non-Hodgkin's lymphoma may occur but Burkitt's lymphoma rarely occurs in children of this subcontinent. Melanomas are also rare but usually occur in nasal septum or lateral nasal wall of 5th to 8th decade of male population.⁴

Site distribution of sinonasal malignancy varies in different studies. One study showed that almost half of all sinonasal tumours arise from lateral nasal wall, which represent 45%, maxillary antrum 30%, ethmoid sinus 5%, frontal & sphenoid sinus 2% and in 18% cases site could not ascertain due to disease extent.⁶ Another study showed that 55% tumour arises from maxillary antrum, 30% from nasal cavity and 10% from ethmoid sinus and 5% from others sinus.⁵

The high mortality rate and poor prognosis of carcinoma of the maxillary sinuses are related to late diagnosis, which is caused by the early symptomatic latency of these tumours. Therefore, the extent of the disease is the main prognostic factor.^{6,7}

Methods

This cross-sectional study was done in the Department of Otolaryngology Head and Neck Surgery, BSMMU and Dhaka Medical College, Dhaka during the period of January 2008 to December 2009. Patients suspected of sinonasal carcinoma were evaluated properly by detailed history taking, clinical examination and relevant investigation like rigid endoscopy, CT scan, MRI and punch biopsy. The results were presented here as tables, graphs and figures.

Results

Table-I
Age distribution in sinonasal malignancy (n=40)

Age group in years	No. of patients	Percentage (%)
1-10	1	2.5
11-20	4	10
21-30	1	2.5
31-40	1	2.5
41-50	11	27.5
51-60	15	37.5
61-70	6	15
71-80	1	2.5

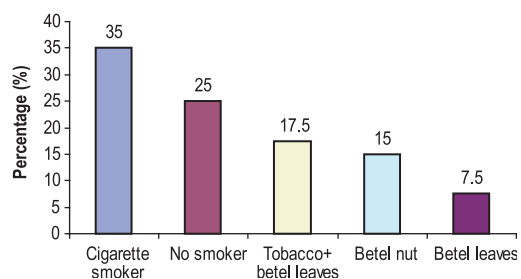


Figure-1: *Personal habits of study patients (n=40)*

Table- II
Presenting symptoms in sinonasal carcinoma (n=40)

Symptoms	No. of patients	Percentage (%)
Nasal obstruction	36	90
Nasal discharge	30	75
Facial swelling	10	25
Facial pain	14	35
Headache	32	80
Epistaxis	35	87.25
Proptosis	11	27.5
Impairment of vision	9	22.5
Toothache	2	5
Bulging of palate	12	30
Epiphora	10	25
Diplopia	4	10
Loosening of teeth	5	12.5
Facial paraesthesia	7	17.5
Anaesthesia of cheek	3	7.5

Table- III
Clinical findings in sinonasal carcinoma (n=40)

Signs	No. of patients	Percentage (%)
Epistaxis	35	87.5
Nasal mass	24	60
Nasal discharge	30	75
Proptosis	11	27.5
Facial swelling	14	35
Palatal swelling	12	30
Neck swelling	1	2.5
Loose tooth	4	10
Involvement of facial skin	3	7.5

Table- IV
Topographic distribution of sinonasal carcinoma (n=40)

Site	No. of patients	Percentage (%)
Maxillary antrum	07	17.5%
Nasal cavity	03	7.5%
Ethmoidal sinus	01	2.5%
Maxillary sinus + Nasal cavity	15	37.5%
Maxillary sinus + Nasal cavity + ethmoid sinus	10	25%
Maxillary sinus + ethmoid+frontal sinus	02	5%
Nasal cavity+ ethmoid	02	5%

Table- V
Involvement of different site of sinonasal carcinoma

Site	No. of patients	Percentage (%)
Maxillary sinus	34	85
Nasal cavity	28	70
Ethmoid sinus	14	35

Table- VI
T stage of the tumour (primary) (n=40)

T stage	No. of patients	Percentage (%)
T ₄	16	40.0
T ₃	13	32.5
T ₂	07	17.5
T ₁	04	10.0

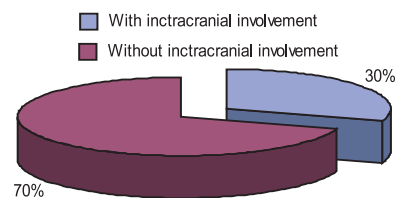


Figure-2: Radiological evidence (CT/MRI) of intracranial extension (n=40)

Discussion

Carcinoma of the nose and paranasal sinuses though not common worldwide, but more common in Japan and among the Bantu people of South Africa. Its incidence is 0.2% to 0.8% of all carcinoma and only 3% of those in the upper aerodigestive tract.¹ It is not uncommon in our country.⁵

In this study age ranged 4-75 years, mean age 48.29 years. This is similar to the study done in our country in which mean age was 52 and similar study done in abroad by Watkinson et al. in which mean age was fifty five⁸.

Considering the sex, majority of the patients in this study were male and male to female ratio is 2.6:1. This was more or less similar to other study.¹ In this series most of the patients came from rural areas (77.5%). This is due to the fact that this is a tertiary centre and patients were referred from all corners of the country.

In this study majority of the patient were poor socioeconomic group (50%) and most of them were illiterate (40%), followed by secondary 25%, primary 20% and graduate 15%. This study is similar to a study done in our country.⁸

This study revealed (35%) patients had a history of smoking habits for 10-20 years. Non smoker, 25%, tobacco and betel leaves chewing 17.5%, betel nut 15% and betel leaves users 7.5% this finding varies from a study done in our country and abroad. A study done in Bangladesh showed 53.33% of patient of sinonasal carcinoma were cigarette smoker which was more or less similar to other studies^{8,9}.

Regarding presentation almost all of the patients presented with multiple symptoms, nasal obstruction was commonest symptoms 90%, followed by epistaxis 87.25%, headache 80%, nasal discharge 75%, facial pain 35%

proptosis 28%, bulging of palate 30%, epiphora 25%, facial paraesthesia 17.5%, loosening of teeth 12.5%, tooth ache 5%. These findings are similar to Walkinson et al., Garcidueñas et al., Robin and Powell.^{1,10,11}

Among the multiple sites involvement maxillary sinus+ nasal cavity 51.72%, maxillary sinus+ nasal cavity+ ethmoid sinus 34.48%, maxillary sinus+ ethmoid sinus+ frontal sinus 6.8%, nasal cavity ethmoid sinus 6.8% this findings is consistent with the findings of Crowley et al.¹²

In overall involvement of different sites maxillary sinus is most common, 34 out of 40 (85%) followed by nasal cavity, 28 out of 40 (70%) and ethmoid 14 out of 40 (35%).

Staging of the tumour were assessed by through clinical and radiological examination shows a decreasing order of frequency T₄ (40.0%), T₃ (32.5%), T₂ (17.5%) and T₁ (10%). This was consistent with a study in this country^{6,9} and abroad by Zy³ka et al.¹³

In present series there were 07 cases of nodal involvement were found e.g. (17.5%). Among them submandibular nodes were 57.1% and jugolodigastric 42.8%. This finding is consistent with the findings of Kim et al.

Squamous cell carcinoma was the commonest type 63%. Adenocarcinoma 17.5% is the second most common carcinoma in this study. Among other carcinoma adenoid cystic carcinoma was 12.5% and other carcinoma 7.5%.

CT scan was carried out systematically on all of the patients. Intracranial involvement found at the time of diagnosis in 30% of the patients. 25% showed orbital involvement. These findings were consistent with the study of Nunez et al.¹⁴

From this series it is obvious that carcinoma maxillary antrum presents in advanced stage.

In case of single site involvement maxillary antral carcinoma was more common than other paranasal sinus carcinoma.

Conclusion

Though carcinoma of the nose and paranasal sinuses is relatively uncommon, it is not uncommon in Bangladesh. This disease generally presents in an advanced stage. As prognosis is directly related to the stage of the disease it is essential to increase awareness of our health professionals and peoples, so that the disease can be detected at an early stage.

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