

Original Article

Clinicopathological Study of Sinonasal Malignancy-Experience in a Tertiary Level Hospital in Bangladesh

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Abstract:

Objectives: To assess the clinical presentation and histopathological types and extensions of the disease at the time of presentation.

Methods: Cross sectional observational study of 40 patients with sinonasal malignancy from the department of otolaryngology and Head neck surgery, Sylhet MAG Osmani Medical College Hospital, Sylhet Bangladesh, period from May 2019 to April 2020. The patients were examined after admission into hospital pre-operatively and in the postoperative period. The surgical specimens were sent for Histopathology.

Results: Majority patients were at 4th to 6th decade where male outnumbered the female with male female ratio was 3.4:1. Out of 40 patients, the majority of patients complaints of nasal obstruction followed by nasal discharge, facial pain, facial swelling and headache. About the site of the lesion maximum patients having the lesion in Maxillary sinus (60%) followed by nasal cavity (15%) multiple sinuses (12.5%) involvement in Ethmoidal sinus (10%) lateral wall of nose (2.5%)

Conclusion: Sinonasal Malignancy is usually a disease of middle age and elderly people. Most of the patients (in this study 65% patients come at T3 & T4 stage) presented late with multiple symptoms.

Key words: Sinonasal Malignancy, Clinical Presentation, Histopathological Types.

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Introduction:

Cancer is one of the few diseases still unconquered in spite of relentless efforts of medical scientists all over the world. Sinonasal Malignancies have an incidence of 0.5-1 per 1000000 cases per year. They account for 0.5-0.8% all Malignancies and 3% of upper aero-digestive tract neoplasm¹. Age incidence of sinonasal malignancy are 4th, 5th and 6th decades². Cancer of Maxillary Sinus is predominant in male having male to female ratio is 2:1.3.

The lining of the anterior part of the nasal cavity and vestibule is continuous with skin and posteriorly by pseudostratified ciliated (respiratory) epithelium reach in goblet cells³. The Maxillary sinus is the most common site of Sinonasal Malignancy (60-70%), followed by the nasal cavity (20-30%), ethmoid sinus(10-15%) and frontal and sphenoid sinuses (1-2%)⁴.

Several carcinogenic compounds have been identified as aetiological factors of Sinonasal Malignancies. Inhalation of these carcinogens is responsible for about 40% of reported Sinonasal Malignancies⁵. Workers exposed to hard wood have a 70 times increased incidence of Sinonasal adenocarcinoma particularly in ethmoid sinuses, soft wood exposer increases the risk of developing squamous cell carcinoma⁵. Exposer to nickel, smoking, radiation, viral and genetic causes have also been proposed⁵. Epstein-barr virus is strongly associated with development of malignant lymphoma⁶.

Though carcinoma of the nose and paranasal sinuses is relatively uncommon but it is not so uncommon in Bangladesh⁷. But regarding this many things are still unknown to us. We have seen our previous discussion that the wood workers are high risk for Sinonasal malignancy and wood dust can lead to Sinonasal cancer is now become the part of

basic medical arrogation. But in our country, we don't see such strong evidence of this statement though a portion of percentage is seen all time. We know it; risk factors don't tell us everything. Though strong evidence is not proved why ratio of wood workers are not in first position among risk factors in our region but a hypothesis is said that in our country most of the wood used in wood factory is procywood but in Africa wood used in wood industry are not processed; processed wood may have less carcinogen. Also, it may another fact that our country is an agricultural country. This study is primarily focused on the evolution of clinical behaviour, histopathological type and treatment of Sinonasal masses, so as to avoid recurrence and increase the patients quality of life. The purpose of this study is to compare the recent findings of data with previous study of such topic.

Objectives:

- To assess the clinical presentation of Sinonasal malignancy.
- To find out the of histopathological types of Sinonasal malignancy.
- To assess the extensions of Sinonasal malignancies at the time of presentation.

Methods:

Type of study: Cross sectional study.

Place and period of study: Department of otorhinolaryngology and head-neck surgery, Sylhet MAG Osmani Medical College Hospital, Sylhet, Bangladesh from may May 2019 to April 2020.

Study Population: Among the target population those who will fulfil the inclusion criteria was considered as study Population. About 40 cases were included in this study.

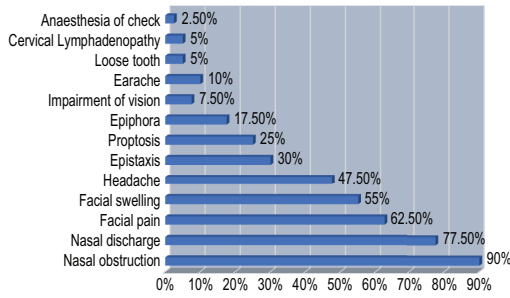
Methods of Sampling: Non probability convenient sampling technique was applied where every patient should have equal chance to be included. All cases in our department

who have fulfilled the exclusion and inclusion criteria are included in our study.

Results:

Table I:
Socio-demographic characteristics of the patients (n = 40):

Characteristics	No (%)
Gender:	
Male	31 (77.5%)
Female	9 (22.5%)
Age (years):	
<= 20	02 (5%)
20-40	08 (20%)
40-60	18 (45%)
60 >	12 (30%)
Occupation:	
Farmer	32.5%
Service Holder	22.5%
Furniture and textile workers	17.5%
Housewife	15%
Building constructor	12.5%



*Multiple response counted

Fig.-1: Distribution of the patients according to symptoms (n=40)

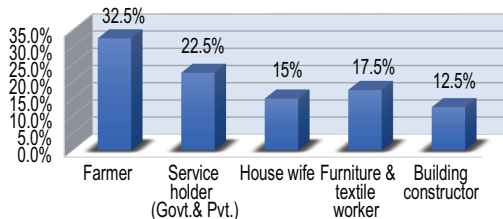


Fig.-2: Distribution of the study patients according to occupation status (n=40)

Table II:
Distribution of tumor extension and radiological evidence (CT) (n=40)

Findings	No (%)
T4	10 (25%)
T3	16 (40%)
T2	10 (25%)
T1	4 (10%)
With bone destruction	36 (90%)
Without bone destruction	04 (10%)
Orbital Involvement	
Yes	03 (7.5%)
No	37 (2.5%)
Intracranial Involvement	
Yes	05 (12.5%)
No	35 (87.5%)

Table III:
Histopathological Analysis (n=40):

Histopathological types	Number of patients (%)
Squamous cell carcinoma	28 (70%)
Adenocarcinoma	03 (7.5%)
Adenoid cystic carcinoma	04 (10%)
Lymphoma	01 (2.5%)
Olfactory neuroblastoma	01 (2.5%)
Malignant fibrous histiocytoma	01 (2.5%)
Rhabdomyosarcoma	02 (5%)

Table IV:
Distribution of the study patients according to neck nodal involvement (n=4)

Neck nodal involvement	No. (%)
Submandibular	03 (75%)
Jugulodigastric	1 (25%)



Figure 3: Pre and Postoperative pictures

Discussion:

Clinicopathological study of Sinonasal malignancy, the fact and figures mention here may vary a large series, but still then as the cases were collected for a period of one year from Sylhet MAG Osmani Medical College Hospital, Bangladesh this study may have credentials in reflecting certain facts regarding Sinonasal malignancy. Actually, there is no national level study in Bangladesh to find out the incidence of Sinonasal malignancy. Different findings of this study are statistically compiled and presented in our previous graphs or charts. In this study almost half 46% patients belonged to age 40-60 years. The mean age was found 48.5+16.8 years with range from 8 to 73 years. In five different studies of Bangladesh and abroad were found 40-65 years⁷⁻¹¹. This is consistent with this study. It can be correlate with the Exposure to carcinogen. As adults are more expose to such carcinogen like wood dust from carpentry, leather dust from shoe making, smoking etc. In this study observed that more than three fourth 31(77.5%) patients were

male and 9(22.5%) patients were female. Male female ratio was 3.4:1 which is consistent with others studies⁸⁻¹¹. In 30 studies by(Bhattacharya, J. etal¹¹ 2015) found male female ratio was 1.8(rages from 1.2 to 5.3).However, in our studies male-female ratio was 3.4:1. Male are more affected in our region, it may be due to some causes that man are involved in wood industry works & man are smokers. For cultural & religious view female smokers number is very few compare to male. Besides housewife in our country female are more involved in garments factory so they have less chance to exposure to carcinogen of Sinonasal malignancy.

In this study showed that 36(90%) patients were nasal obstruction followed by 31(77.5%) nasal discharge, 25(62.5%) facial pain,22(55%) facial swelling,19(47.5%) headache and 12(30%) epistaxis which was consistent with others studies in our countries and abroad^{7-9,12,13}.

In this study observed that 24(60%) patients were found in maxillary sinus, 6(15%) in nasal

cavity 5(12.5%) in multiple sinuses 4(10%) in ethmoidal sinus and 1(2.5%) in lateral wall of nose involvement. This is consistent with the findings of some other studies^{9,14,15}. Breathing in certain substances may increase the risk of developing nasal cavity and paranasal sinus cancers. Here nasal cavity and maxillary sinus is relatively more exposed area. So that may be the cause higher percentages in both of these are to be involved. In our study observed that 16(40%) patients were found in T3 stage followed by 10(25%) in T2, 10(25%) in T4 10 and 4(10%) in T1. This is consistent with other studies of our countries and abroad^{7,9,16-18}. In this study observed that only 4 patients have nodal metastasis and among them three were submandibular region (75%) and one was jugulodiaphragic region (25%). Neck-node involvement in Sinonasal malignancy about 10% in our study. In this study observed that 28(70%) patients were found in squamous cell carcinoma, 4(10%) in adenoid cystic carcinoma, 3(7.5%) in adenocarcinoma, lymphoma, 1(2.5%) in Olfactory neuroblastoma, 1(2.5%) in malignant fibrous histiocytoma and 2(5%) Rhabdomyosarcoma. This is consistent with other studies of home and abroad^{8,9,19,20}. In present study observed that intracranial involvement found in 05(12.5%) and orbital involvement in 3(7.5%). Haque et al⁷ reported intracranial involvement at the time of diagnosis was 30% and orbital involvement was 25%. These findings were consistent with the study of Nunez et al²¹. Ali et al⁹ found intracranial involvement (45%) and orbital extension (17.5%). This is not consistent with other studies because those studies were 10-30 years back. Now-a-days patients come earlier to doctors because of consciousness, increase level of education, positive effect of digitalisation, availability and low cost of CT scan, now ENT specialists are available in almost all districts and some upazillas and

overall development of socio-economic condition of the people of Bangladesh.

Conclusion:

The possibility of early diagnosis of sinonasal malignancy on the basis of clinical presentation in early stage remains a problem, because at this stage there maybe a few or no symptoms and a require a high index of suspicion for diagnosis due to the overlapping presentation of this neoplasm with more commonly and countered infections states. Imaging is essential for staging nasal cavity tumours locally and rule out the presence of metastases. The present study is a hospital-based study with a total of 40 cases only. Most of the results are similar and few are dissimilar to the studies of others in our country and abroad. Further studies should be carried out in a broader spectrum.

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