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ORIGINAL ARTICLE

Incidence of Malignancy in Nose and Paranasal Sinuses

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ABSTRACT

Objectives: To analyze the occurrence of malignancy in nose and paranasal sinuses and to identify the common type of nose and paranasal sinuses tumor.
Study Type: Analytical study
Place and Duration of Study: ENT Outpatients Department, Rai Medical College Teaching Hospital, Sargodha from 1st April 2017 to 31st March 2021.
Methodology: Fifteen patients with nasal endoscopy performed for the diagnosis of tumors were enrolled. Lesion site and extent were determined through computed tomography imaging. Biopsy of each patient was performed under local anesthesia and histopathological findings were documented.
Results: The mean age of patients was 55.3±3.3 years. Tumors of nose and paranasal sinuses were more common in the males (66%) than in the females (34%). It is revealed that majority of cases were diagnosed with squamous cell carcinoma 12 (80%) cases, 2 (13.3%) cases were diagnosed as adenocarcinoma and 1 (6.7%) case was diagnosed as adenoid cystic carcinoma.
Conclusion: Squamous cell carcinoma was the main histopathological category of nose and paranasal sinuses tumor.
Keywords: Sinonasal malignancies, Paranasal malignancies, Squamous cell carcinoma, Nose, Wood dust

INTRODUCTION

Sino-nasal malignancies (SNM) are serious and life threatening conditions but are also very rare and it affects different ethnicities differently. Its frequency is higher in Asia and Africa and especially in Japan than to European countries. It's in time diagnosis, makes it really difficult and challenging sometime due to histological variations, nonspecific clinical-manifestations and limited anatomic access.[1-4] Studies also highlights that it affects men more than women and its incidence rate is higher in adults. Paranasal malignancies usually extend to other adjacent organs which makes survival of the patient extremely difficult.[5]

Diverse range of symptoms described by patients including non-specific symptoms such as bleeding from the nose and sinusitis to advance symptoms when tumor invades the orbit or skull base.[6] Tumor invasions to brain stem or optic nerve makes treatment and cure of the patient highly complicated.[7] Tumor sometime grow to variable size before symptoms presentation and due to this aggressive therapy sometime needed especially in areas adjacent to cranial nerves, orbits and vital blood vessels.[8-10]

Various risk factors can be the reason of SNM ranging from complicated to multifactorial problems. Exposure to wood dust, mustard gas, nickel dust, chromium and isopropyl oil are predisposing factors. Exposure to wood dust is considered as the main source of SNM that increases the risk upto 21 times. These are the primary product of furniture, textile and leather industry. These factors should be carefully evaluated and considered at the time of diagnosis and treatment.[11-13] Present study was designed for the identification of incidence of paranasal malignancies. This would prove beneficial for medical health practitioners for timely diagnosis and treatment plan.

MATERIALS AND METHODS

This analytical study was conducted at ENT Outpatients Department, Rai Medical College Teaching Hospital, Sargodha from April 2017 to March 2021, and 15 patients were enrolled. The enrolled patients were within the age group of 25-69 years where prevalence of tumors related to nose and para-nasal sinuses were more common within the age group of 40 to 60 years. All patients admitted and diagnosed with nose and paranasal sinus tumors were registered as study participants. Clinical history, symptoms, familial history as well as the demographic and socioeconomic information was recorded on a well-structured questionnaire. Features like disease duration, complications, pre/post-operative pathological findings were also documented in the questionnaire. Nasal endoscopy was performed for the diagnosis of tumors. Lesion site and extent were determined through computed tomography imaging. Biopsy of each patient was performed under local anesthesia and histopathological findings were documented. Before anesthesia deliverance routine blood examination, urine testing, blood sugar levels as well as serum electrolytes were done. Electrocardiography and x-ray imaging of chest were also taken before anesthesia deliverance. Data was entered and analyzed by SPSS-25.

RESULTS

The mean age was 55.3±3.3 years. Tumors of nose and para-nasal sinuses were more common in the males 66%than in the female 34% [Table 1).

Table 1: Demographic information of the patients (n=15)

Variable	No.	%
Age (years)		
25-39	1	6.6
40-59	10	66.6
60-69	4	26.8
Gender		
Male	10	66.7
Female	5	33.3

Table 2: Histopathological findings (n=15)

Finding	No.	%
Squamous cell carcinoma	12	80.0
Adenocarcinoma	2	13.3
Adenois cystic carcinoma	1	6.7

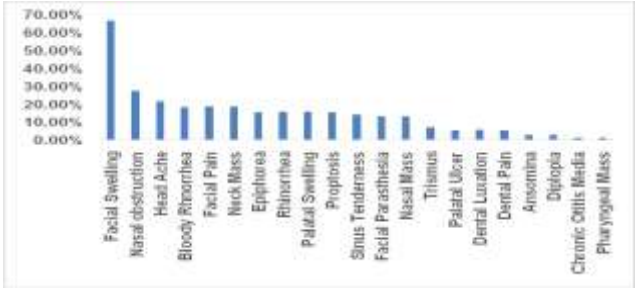

Fig. 1: Clinical symptoms of the patients

The majority of the patients presented with headache, facial pain, epiphora as well as sinus tenderness and palatal swelling signs and symptoms with a few cases also reporting diplopia and pharyngeal mass (Fig. 1).

It is revealed that majority of cases were diagnosed with squamous cell carcinoma 12 (80%) cases, 2 (13.3%) cases were diagnosed as adenocarcinoma and 1 (6.7%) case was diagnosed as adenoid cystic carcinoma (Table 2).

DISCUSSION

Paranasal malignancies are rare but a challenging health condition with unknown etiology.[4] Different epidemiological studies has investigated various causative agents in the progression of these tumors that indicate early sign/symptoms and timely management plan. Present study was designed for the estimation of frequency of paranasal malignancies in teaching hospital of Sargodha.

Result of the current study showed that, paranasal sinuses were more frequent in males as compared to females. Another study conducted by Hopkin et al[14] also proved that patients with tumors of paranasal and nose sinuses were males. Whereas on the other hand, another study contradicts with these findings.[15] Age group of present study was also assessed. Higher number of patients was observed in higher age group especially in age group of 40-50 years. Almost similar has been reported by another study.[16,17]

In current study, majority of the patient had squamous cell carcinoma, few also had adenocarcinoma and adenoid cystic carcinoma. These findings are also in consistent with study reported by Krouse et al.[18] Findings of the study conclude that, it's a rare type of cancer with squamous cell carcinoma as a main histopathological outcome. Further investigations are required for accurate finding.[19,20]

CONCLUSION

Paranasal malignancies were more commonly reported in males as compared to females. Higher cases were reported in 40-50 years age group. Squamous cell carcinoma was the main histopathological category of nose and paranasal sinuses tumor.

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