

# Malignant Tumors of Nose and Paranasal Sinuses

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It is a study of 20 cases of sinonasal malignancies seen over a period of 5 years. The commonest age affected was fifth (35%) and sixth (30%) decades. The disease was more frequently seen amongst males compared to females with a ratio of 3:1. The commonest histological variant was squamous cell carcinoma (70%) followed by adenocarcinoma (15%), adenoid cystic carcinoma (5%), non-Hodgkin's lymphoma (5%) and haemangiopericytoma (5%).

**Key words:** Sinonasal malignancies

Malignancy of nose and paranasal sinuses is a highly lethal condition. The fortunate aspect is that the incidence of these tumors is appreciably low i.e., less than 1% of all malignant tumors of the body and 3 % of upper aero digestive tract malignancies<sup>1</sup>.

Batsakis<sup>2</sup> relates the incidence between 0.2% to 0.8% of all malignancies. The incidence however varies in different parts of the world. It is less common in Europe and America and relatively more common in Asian countries like Japan<sup>2</sup>.

The incidence is highest in the world amongst the Bantu tribesmen of South Africa. The reason is ascribed to African mahogany wood used by them in fires. Squamous cell carcinoma is the common histological type seen in these areas. Adenocarcinoma of nasal cavity and paranasal sinuses is known to be common amongst wood workers<sup>3</sup>.

Generally the prognosis of sinonasal malignancies is poor due to few possible reasons. The rarity of these tumors means that many family physicians might not see a single case in their professional career. Their consequent relative unawareness of the condition and the simulation of symptoms with more frequent inflammatory sinonasal disorders, results in failure to keep high index of suspicion for these malignancies. As a result most of these lesions have already transgressed the bony confines before they present to the Otolaryngologist. The other reason for dismal prognosis may be the complex anatomy of the region and close proximity to the orbit and skull base; and the reluctance of surgeon and radiotherapist to treat aggressively for fear of damage to vital structures and adding further mutilated shape to the disease pattern.

The diagnostic workup of sinonasal tumors includes analysis of symptomatology, clinical examination, radiology and incision biopsy. C.T scan and M.R.I help to determine the site of origin, extent of spread and invasion of adjoining areas. AJCC (American Joint Committee on Cancer) classification of sinonasal malignancies is in vogue these days before offering treatment to the patients.

Various treatment modalities have been employed for these tumors in isolation or in combination. However morbidity and mortality rate has been significantly reduced by more efficient surgical techniques planned in the light

of exact extent of the disease depicted by CT scan and MRI. In this respect endoscopic sinus surgery is worth mentioning for very small localized lesions<sup>4</sup>.

Surgical procedures may range from partial maxillectomy to total and radical maxillectomy with or without orbital exenteration. In case the malignant process has gone beyond the limits of skull base, craniofacial resection is also resorted to<sup>5, 6</sup>. Medial maxillectomy or lateral rhinotomy is a versatile procedure. With some modification it can be used to approach the lateral wall of the nose, paranasal sinuses and nasopharynx<sup>7</sup>.

Other modes of treatment available include radiotherapy and chemotherapy. Survival results obtainable with radiotherapy used as single modality of treatment vary from 10%-45% at 5 years<sup>8</sup>. With combined therapy using surgery and radiation 69% five year survival rates have been reported<sup>9</sup>.

More recently another modality has been developed using photodynamic therapy. This method has real potential for cancer detection and elimination<sup>10</sup>.

## Materials and Methods

This study includes 20 cases of malignant tumors of nose and paranasal sinuses admitted in the department of E.N.T at Services Hospital, Jinnah Hospital and Mayo Hospital Lahore from March 1994 to October 1999. A detailed history, physical examination and investigative workup in each case were carried out. Plain radiographs and CT scan was done. Biopsy specimens were taken from the nose under local anaesthesia while biopsies from the antrum were taken through intranasal antrostomies under general anaesthesia where lesions were only confined to the antrum. Staging of the tumors was done on the basis of clinical workup and CT scan. Mode of treatment was decided on the basis of stage of disease and histological diagnosis.

## Results

Tumors of nose and paranasal sinuses are relatively uncommon in younger age group. Maximum age prone to develop this malignancy is 4<sup>th</sup>, 5<sup>th</sup> and 6<sup>th</sup> decades of life as shown in table 1. Males are affected more (75%) compared



to females (25%) as depicted by table 2.

Squamous cell carcinoma is the commonest histological type (70%) while others like adenocarcinoma (15%), adenoid cystic carcinoma (5%), non-Hodgkin's lymphoma (5%) and Haemangiopericytoma (5%) are relatively rare tumors (Table 3).

### Discussion

Tumors of nose and paranasal sinuses are uncommon. Their incidence varies from 0.2% to 0.8% in USA and UK<sup>2</sup>. This rate of occurrence is lower compared to relatively higher incidence in Japan and other countries of Asia and Africa<sup>11</sup>. Some unidentified environmental and sociocultural factors may be responsible for this disparity. In this particular study patients comprised of varying age groups ranging from 2<sup>nd</sup> to 6<sup>th</sup> decade with peak incidence in the 4<sup>th</sup> and 5<sup>th</sup> decades (35% and 30% respectively). Other studies report a high incidence in 6<sup>th</sup> and 7<sup>th</sup> decades of life<sup>12,13</sup>. Possible explanation of late appearance may be the outcome attributed to cumulative effects of carcinogenic agents affecting the tissues over a long period of time.

Sex distribution of these tumors is 3:1 with male preponderance. Gallagher and Boles<sup>13</sup> report a male to female ratio of 2:1.

The predominant histological tumor type in this study is squamous cell carcinoma (70%) followed by adenocarcinoma (15%), adenoid cystic carcinoma (5%), lymphoma (5%) and haemangiopericytoma (5%). Muir and Nectoux<sup>14</sup> have reported squamous cell carcinoma in 57% of their series and also undifferentiated carcinoma in about 10% of cases but we did not see any undifferentiated carcinoma in our study.

Table 1 Age distribution

Age (Years)	No. of Pts.	%age
00-10	0	0
11-20	1	5
21-30	2	10
31-40	2	10
41-50	7	35
51-60	6	30
61-70	1	5
71-80	1	5

Table 2: Sex ratio of malignant tumors

Sex	No. of Pts.	%age
Male	15	75
Female	5	25
Total	20	100

Table 3: Histological diagnosis

Type	No. of Pts.	%age
Squamous cell Ca	14	70
Adenocarcinoma	3	15
Adenoidcystic Ca	1	5
Non-hodgkin's lymphoma	1	5
Haemangioperi-cytoma	1	5
Total	20	100

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