

NON-EPITHELIAL TUMORS OF THE NOSE, NASOPHARYNX AND PARANASAL SINUSES – A CLINICOPATHOLOGICAL STUDY

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Abstract:

Total 392 sino-nasal tract tumours were examined histopathologically of which 79 cases came out as non epithelial tumors during a study period of three years from 2009 to 2011. Epistaxis and nasal obstruction were the two most common presenting symptoms. Facial swelling, sinus tenderness & nasal airway obstruction were the commonest sign. Capillary haemangioma & nasopharyngeal angiofibroma were the commonest benign tumor where as lymphoma and rhabdomyosarcoma were the two most common malignant lesions.

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Introduction:

Tumors of the nose, nasopharynx & para nasal sinuses are incidence wise not very common, but a wide variety of both benign and malignant tumors occur there¹. As early as 5th century B. C., great physician Hippocrates first described tumors of this region². Series on tumors of sino-nasal tract were published by Ringertz in 1938³ and Eggston in 1947⁴.

Classification of these neoplasm is based upon the international histological classification of tumors by World Health Organization⁵. Broadly the neoplasms are categorized into epithelial, non epithelial and tumors like conditions⁶. We in our study, only included non-epithelial tumors of the sinonasal tract. . All other tumors like conditions, epithelial neoplasms and inflammatory lesions mimicking neoplasm, were excluded from the study.

Aims & Objectives:

The study was done in order to:

- (a) Find out the incidence of non-epithelial tumors (NETs) among all sino-nasal swellings, biopsied.
- (b) Know the age sex distribution, common clinical presentations and usual signs of these neoplasms.

- (c) Study the histopathological classification of non-epithelial tumours of sino-nasal tract with incidence of individual tumors.

Materials and Methods:

Present study was done in the Dept. of ENT, Dhaka Medical College hospital for a period of 3 years from 2009 to 2011.

During this period, the entire patient had surgery for sino-nasal tract tumours & tumours specimen routinely sent for histopathology with request for special stain like reticulin were used as & when necessary. Where the histopathological diagnosis was that of a non-epithelial tumour then detailed history, clinical findings, investigation reports & other relevant information were collected for study purpose.

Finally, all these collected datas are analysed by simple statistical method.

Results:

During the period of study, 392 sinonasal tract tumours were biopsied and histopathological reports were received. The results of histopathological study are described in Table 1.

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Male cases were outnumbered by females in all categories of lesions. Overall, male female ratio was 2.01:1. But in case of non-epithelial tumours, the ratio was approximately 2.59:1.

Table 2 describes the location wise incidence of the non-epithelial tumors of sinonasal tract. In all three sites, male cases were commoner than females and nose was the commonest

location, involved. Age-Sex distribution of these tumors are expressed in Table 3. Maximum number of cases were reported in the 3rd decade 39 (49.37%) followed by 11-20 year(2nd decade) age group 15 (18.98%). Youngest case was a 3 year old female child with haemangioma where as oldest reported case was male aged 67 years with chondrosarcoma.

Table-I
Incidence of lesions(n=392)

No of cases	No of epithelial lesions	No of non-epithelial lesions	No of inflammatory lesions
Male	262	102	57
Female	130	51	22
Total	392(100%)	153(39.03%)	79(20.15%)

Table-II
Site of lesions ,non-epithelial tumour(n=79)

No of cases	Nose	Nasopharynx	Paranasal sinuses	Male	Female
79(100%)	46(58.22%)	09(11.39%)	24(30.38%)	54	25

Table-III
Age-Sex distribution (n=79)

Sex	No of cases	0-10 years	11-20 years	21-30 years	31-40 years	41-50 years	51-60 years	60-70 years
Male	54	02	11	26	07	04	02	02
Female	25	01	04	13	04	02	01	00

Table-IV
Clinical presentation (n=79)

Site of lesions	No of cases	Epistaxis	Nasal obstruction	Nasal Voice	Dysphagia	Headache
Nose	46	44	41	04	00	08
PNS	24	22	07	04	01	11
Nasopharynx	09	07	06	04	02	05
Total	79(100%)	73(92.40%)	54(68.35%)	12(15.18%)	03(3.79%)	24(30.38%)

Table V
Signs of tumours including radiological findings(n=79)

Site of lesions	No of cases	Facial swelling	Sinus tenderness	Nasal airway obstruction	Lymphadenopathy	Radiology, haziness of sinuses
Nose	46	18	41	46	00	46
PNS	24	12	07	24	01	24
Nasopharynx	09	03	06	07	02	05
Total	79(100%)	33(41.77%)	54(68.35%)	77(97.46%)	03(3.79%)	75(94.93%)

Table -VI
Distribution of neoplastic lesions.(n=79)

Site of lesions	No of cases	Benign			Malignant		
		Male	Female	Total	Male	Female	Total
Nose	46	29	10	39	05	02	07
Nasopharynx	09	04	02	06	02	01	03
PNS	24	09	06	15	07	02	09
Total	79	32	18	60	14	05	19

Table-VII
Histopathological diagnosis of non-epithelial tumour (n=79)

Tissue of origin	Benign	No of cases	Malignant	No of cases
Vascular:	Capillary haemangioma	20	Haemangiopericytoma	01
	Nasopharyngeal Angiofibroma	17		
Fibro-osseous:	osteoma	05		
	Ossifying fibroma	07		
<i>Reticuloendithelial:</i>			Lymphoma	06
			Plasmacytoma	02
Neurogenic:	Neurofibroma	03		
	Schwannoma	05		
Fibrous	Fibroma	03	Fibrosarcoma	01
Myogenic			Rhabdomyosarcoma	05
Olfactory			Olfactory neuroblastoma	03
Chondrogenic			Chondrosarcoma	01

Table-VIII
Site distribution of malignant lesions (n=19)

Malignant tumour	Nose	Nasopharynx	PNS	Total
Haemangiopericytoma	01	00	00	01
Lymphoma	02	01	03	06
Plasmacytoma		01	01	02
Fibrosarcoma	01	00	00	01
Chondrosarcoma	00	00	01	01
Rhabdomyosarcoma	01	01	03	05
Olfactory neuroblastoma	02	00	01	03
Total	07(36.84%)	03(15.79%)	09(47.36.%)	19(100%)

Common clinical presentations of these tumors are tabulated in Table 4. Epistaxis was the commonest presenting symptom for nasal lesions. Nasal obstruction was the second most common symptom and along with nasal voice change it qualified for most common symptom for nasopharyngeal lesions.

Nasal obstruction was also the commonest presentation for para nasal sinus lesions.

Signs of the tumors are expressed in Table 5. Nasal air way obstruction & facial swelling were the commonest sign of all tumors, as also for nasopharyngeal and paranasal sinus growths. Sinus tenderness was the commonly elicited

sign 54(68.35%) of which 41 (51.90%) in nasal neoplasms. 75 out of 79 cases (94.93%) showed haziness of sinuses on radiology. But in case of PNS & nasal lesions, sinus haziness is 100%.

Table 6 : Described the site wise incidence of benign and malignant lesions. Benign tumors far outnumbered malignant tumors in the ratio of 3.16:1. Maximum number of malignant cases occurred in Para nasal sinuses on the other hand, maximum number of benign tumors occurred in the nose. Male cases were commoner than females in all category of tumors.

Histopathological diagnosis of individual tumors are discussed in Table 7. Vascular tumors were the commonest lesions (37 out of 79 i.e. 46.84%) and capillary haemangioma 20(25.31%) followed by angiofibroma 17(21.51%) were the most common tumors. In the malignant group, reticuloendothelial tumors (8 out of 79 i.e. 10.12%) and myogenic tumors-rhabdomyosarcoma 05 (6.33%) were the two most common malignant tumor. In the concluding Table 8 the data related to distribution of malignant tumors are tabulated.

Discussion:

As there were only few reported series on non-epithelial tumors of Sino-nasal tract^{6,7,8,9}, we compared our data with the few published data available.

Regarding age distribution, Fu & Perzin^{6,7,8} got most of the tumors in 4th & 5th decade. Comparatively, lower age group of cases in our series (Maximum prevalence in 3rd, followed by 2nd decade), could be due to larger population of vascular tumors (37 out of 79 in our group vs 85 out of 256 in the group of Fu & Perzin)⁶.

Male cases outnumbered females in all study groups supporting our findings.

Regarding symptoms, epistaxis followed by nasal obstruction were most common in our series. In a large series of non-epithelial malignant tumors of this region nasal obstruction followed by epistaxis were the commonest presenting features⁴.

Benign tumors were much more common than malignant lesions series, as also the

experience of Fu & perzin^{6,7,8} and Eggston and Wolff⁴.

Vascular tumors were the commonest sino-nasal non epithelial neoplasm both in our study, as well as in previous studies^{9,10}, Though juvenile angiofibroma was reported to be the commonest vascular tumor in different publication^{8,9} in our experience this tumor came second only to capillary haemangioma regarding incidence.

It is reported that lymphoma account for 1% of all head and neck malignancies. Reticuloendothelial tumors followed by rhabdomyosarcoma were reported previously as most common malignant lesions^{6,7}. Sino-nasal tract lymphomas are common malignancy followed by rhabdomyosarcoma in our series.

There were total 8 cases of neurogenic tumors in our series and majority of them, occurred in the nose & maxillary sinus. Among fibrous lesions, osteoma and ossifying fibroma were quite common.

Olfactoryneuroblastoma was the commonest malignant tumor involving nose and paranasal sinuses. Lymphoma and rhabdomyosarcoma were most common malignant tumour, involving nose, paranasal sinuses & nasopharynx.

Other relatively uncommon tumors reported in our study group included fibroma, plasmacytoma, chondrosarcoma, fibrosarcoma, malignant haemangiopericytoma. These variants were also reported by other workers^{6,9,12,13,14,15}.

A lot of other rare tumors namely glomangioma, oncocytoma, chordoma, malignant paraganglioma, teratocarcinoma etc. were reported by different authors^{16,17,18,19,20}, though not found by us.

Lipoma, so much a common tumor in different parts of the body, was seldom reported from this region²¹ and we also did not get a single case.

Conclusion:

In this study, we wanted to throw light on relatively less searched areas of pathology. As there was scarcity of printed materials in this particular field. Our progress was not very smooth. But in conclusion, we are able to express, data related to the age-sex

distribution, clinical presentation, incidence and histopathological types of non-epithelial benign and malignant tumors of nose, nasopharynx and para nasal sinuses. We hope that it would pare the pathology of further detailed studies of these tumors.

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