RETROSPECTIVE AND PROSPECTIVE CLINICOPATHOLOGIACL STUDY OF LESIONS OF THE NASAL CAVITY, PARA NASAL SINUSES AND NASOPHARYNX

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ABSTRACT: The nasal cavity and the paranasal sinuses form a single functional unit with common pathologic processes affecting both of them. These structures encounter innumerable airborne agents that are potentially infectious,allergic or carcinogenic. Many of the reactive processes and neoplasm provoked by these agents are unique to the upper airway. The present study was carried out in the department of Pathology, Pt. J. N. M. Medical College and Dr. B. R. Ambedkar Memorial Hospital, Raipur (C. G). The study consists of prospective study & Retrospective study. Total 341 cases were studied during this study. It was observed that Majority of lesions in present study were inflammatory in nature. Maximum number of inflammatory cases were Rhinosporidiosis. Benign tumors outnumbered malignant lesions. Benign tumors were seen in second & Third decade while malignant lesions occured mainly beyond third decade. Maximum numbers of lesions were seen to arise from nasal cavity followed by paranasal sinus and nasopharynx,Maximum number of tumors were seen to originate from paranasal sinuses followed by nasal cavity. Common symptoms in both malignant & benign lesions were nasal obstruction, epistaxis. Facial swelling, lymphadenopathy & cranial nerve palsy were seen only inmalignant variety.

KEYWORDS: Paranasal sinuses, Malignant, Benign.

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INTRODUCTION: The nasal cavity and the paranasal sinuses form a single functional unit with common pathologic processes affecting both of them.These structures encounter innumerable airborne agents that are potentially infectious, allergic or carcinogenic.many of the reactive processes and neoplasm provoked by these agents are unique to the upper airway. These lesions are allergic, inflammatory & tumors of the nasal cavity and paranasal sinusesMost of the lesions are largely inflammatory and sinonasal tumors and malignancies constitute only a very small fracion of solid tumors. The sinonasal epithelium though an uncommon site for neoplastic process,can present an entire range of both epithelial & non-epithelial tumors. Nasal polyps are the most common expansile lesions in the nasal cavity. They are the most common expansile lesions in the nasal cavity. They are associated with allergy, Vassomotor rhinitis & inflammation. Nasal polyps are usually seen in of asthma patients.

The tumors of the sinonasal tract present a wide histological spectrum of benign & malignant tumors with high recurrence rate because of their location & consequent incomplete surgical removal.

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In general nasal obstruction,epistaxis & headache are symptoms common to both benign as well as malignant tumors,but faciall swelling, features of orbital and/or intracranial extension and lymphadenopathy are seen exclusively in the malignant variety,especially as evidenced by radiography or CT scan. The clinical presentation of sinus malignancies is nonspecific & often mimic benign disease. It is not surprising that delay in diagnosis is common, most of the patients with paranasal sinuses tumors are stage T_3 or T_4.

The most common sinonasal carcinoma is squamous cell carcinoma.Tobacco and air pollution have been implicated in pathogenesis of these lesions.

MATERIAL & METHODS: The present study was carried out in the department of Pathology, Pt. J. N. M. Medical College and Dr. B. R. Ambedkar Memorial Hospital, Raipur (C.G). The study consists of prospective study & Retrospective study. Total 341 cases were studied during this study.

Prospective Study: This was done from July 2005 to July 2006. In all selected patients,a detailed history, general otorhinolaryngologic examination was done. Routine hematological and Biochemical investigations and X-rays of chest, paranasal sinuses and nasopharynx were carried out. CT Scan was done in cases where site & extent of the lesion,intracranial invoivement & areas of bone destruction

were suspected. All patients were evaluated for any systemic illness like Diabetes mellitus, Hypertension andPulmonary and Cardiovascular diseases.

Retrospective Study: In this blocks & slids of all sinonasal lesions biopsied or surgically excised during the period of Jan 2001 to July 2005 wre retrieved and reviewed. All slides were stained by the routine hematoxylene & eosin stain. Special stains like PAS & Reticulin stains were done as and when required. The histology was correlated with the clinical presentation and investigations obtained from indoor registration paper field in the medical records department in the hospital.

OBSERVATION:

Table 1 Shows Lesions of nasal cavity, para nasal sinuses and nasopharynx.

Table 2 shows presenting sign & symptoms in sino-nasal neoplasm. The common symptoms were nasal obstruction (100%), epistaxis (20%) & headache (20%). Facial swelling, lymphadenopathy & cranial nerve palsy were seen exclusively in malignant variety.

Table 3 Shows Neoplastic lesion of nasal cavity, paranasal sinuses and nasopharynx.

Table 4 shows age wise distribution of tumors of nasal cavity, paranasal sinuses and nasopharynx. most patients with benign tumors were in the second and third decade. Malignant lesions occured mainly beyond 3rd decade. Only one case was seen in 2nd decade.

Out of total 341 cases, maximum number of lesionswere seen to arise from nasal cavity 279(82%) followed by paranasal sinuses 41(12%) and nasopharynx 21(6%). Out of 70 benign & malignant lesions, majority of tumors were seen to originate from paranasal sinuses 36(51%), 21(30%) were from nasopharynx & 13(18.6%) were from nasal cavity. Out of 36 paranasa sinus tumors 23(32%) were arising from maxillary sinuses while 7(10%) were from ethmoid sinus an 3(4%) each were from frontal and sphenoidal sinuses.

DISCUSSION: In our study majority of lesions 271(79.5%) were inflammatry in nature.According to Panchal et al,[1] 2005 the nasal cavity and the paranasal sinuses form a single functional unit with common paathological processes affecting both of them, most of which are inflammatory. In the present study maximum number of cases were of rhinosporidosis. 215(63%) followed by nasal polyps 41(12%) and tubercular granuloma 05(1.5%).

In the present study benign tumors (54.2%) were slightly more than malignant lesions (46%) with ratio of benign: malignant 1.18:1. However other workers reported ahigher incidence of malignant lesions. The incidence in this study is because of slightly higher incidence of paplloma in this study.

In this study benign tumors were seen in second and third decade while malignant lesions occured mainly beyond 3rd.

In the present study majority of tumors were seen to orignate from paranasal sinuse 36(51%) ollowed by nasal cavity 13(18.6%). Lewis and Castor[2], 1972 reported that about 58% of sinus tumors originate from maxillary sinuses, 30% from nasal cavity and rest from other sinuses. According to Lewis JS, castro EB, 1972[2], 58% develop in maxillary antrum, 30% in the nasal cavity, 10% in ethmoid sinuses and 1% in sphenoid and frontal sinuses. Job related exposure to Chromium,isopropyl alcohol and radium also have been associate wih sinonasal squamous cell carcinoma (Rousch GC 1979)[3]. Squamous cell carcinoma of both nasal cavity & paranasal sinuses shows a male predomnance o f approximately 2 to 1 (Barnes Let al 1985[4]). Most patients are in their sixth or seventh decade of life,and cases in patients younger than 40 years of age are extremely rare.in the present study common symptoms in both benign & malignant lesions were nasal obstruction, epistaxis, facial swelling, lymphadenopathy & cranial nerve palsy were seen exclusively in malignant variety. Accordin to Lewis JS, Castro EB, 1972[2], nasal lesions cause obstruction, rhinorrhea, epistaxis or pain. According to Shanmugaratnam et al[5] 1979. In U.S. 78% to 90% of malignant neoplasm arising in nasopharynx are nonglandular carcinomas. According to Heffner DK, 1982[6], The distribution of Low grade sinonasal adenocarcinoma are as follows: nasal cavity-22%, nasal septum-18%, ethmoid or nonethmoid sinus-30%, maxillary or non maxillary sinus -13%, multiple locations-18%.

CONCLUSION: The present study was carried out in the department of Pathology, Pt. J. N. M. Medical College and Dr. B. R. Ambedkar Memorial Hospital, Raipur (C. G). The study consists of prospective study & Retrospective study. The study consists of prospective study of one year from July 2005 July 2006 and retrospective study from July 2001 to 2005. Total 341 cases were studied. It was observed that Majority of lesions in present study were inflammatory in nature. Maximum number of inflammatory cases were Rhinosporidiosis. Benign tumors outnumbered malignant lesions. Benign tumors were seen in second & Third decade while malignant lesions occured mainly beyond third decade. Maximum numbers of lesions were seen to arise from nasal cavity followed by paranasal sinus and nasopharynx, Maximum number of tumors were seen to originate from paranasal sinuses followed by nasal cavity. Common symptoms in both malignant & benign lesions were nasal obstruction, epistaxis. Facial swelling, lymphadenopathy & cranial nerve palsy were seen only inmalignant variety.

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Type of lesion	No. of cases	%
Inflammatory	271	79.5
Neoplastic	70	20.5
Total	**341**	**100**

Table 1: Total 341 lesions of nasal cavity, para nasal sinuses and nasopharynx. Out of total 341 lesions 271(79.5%) were inflammatory in nature & 70(20.5%) were neoplastic

Symptoms	Benign (n=38)	Malignant (n=32)
Nasal obstruction	38	32
Epistaxis	04	10
Headache	06	08
Facial swelling	-	06
Lymphadenopathy	-	01
Cranial nerve palsy	-	01

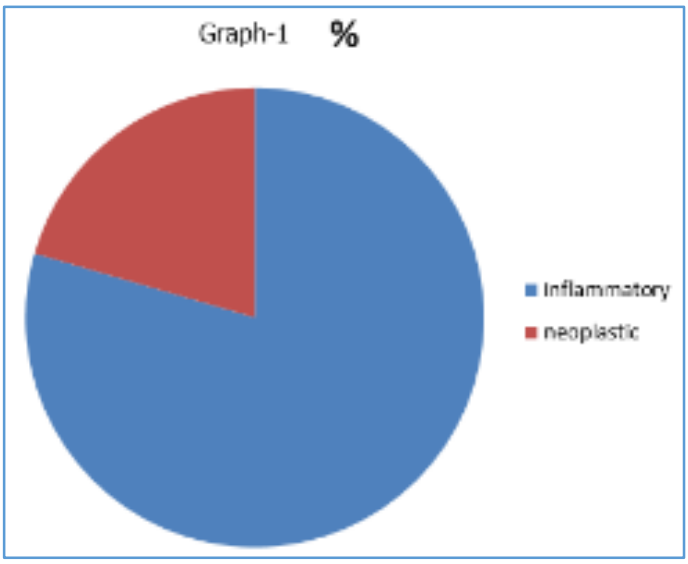
Table 2: Presenting signs & symptoms in sinonasal neoplasms

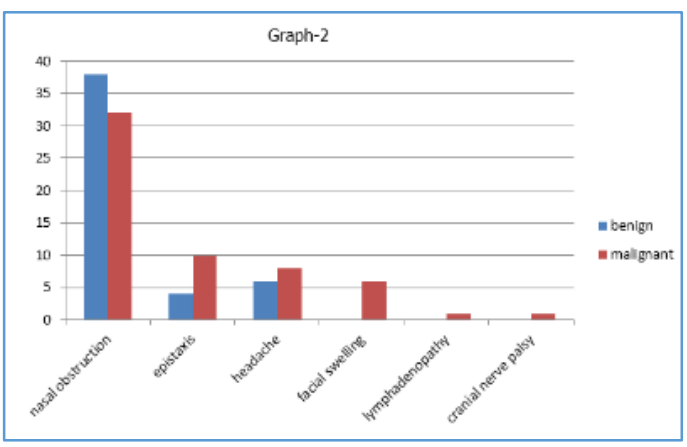
Lesions	No	% n= 70
Benign	38	54%
Malignant	32	46%
Total	70	100%

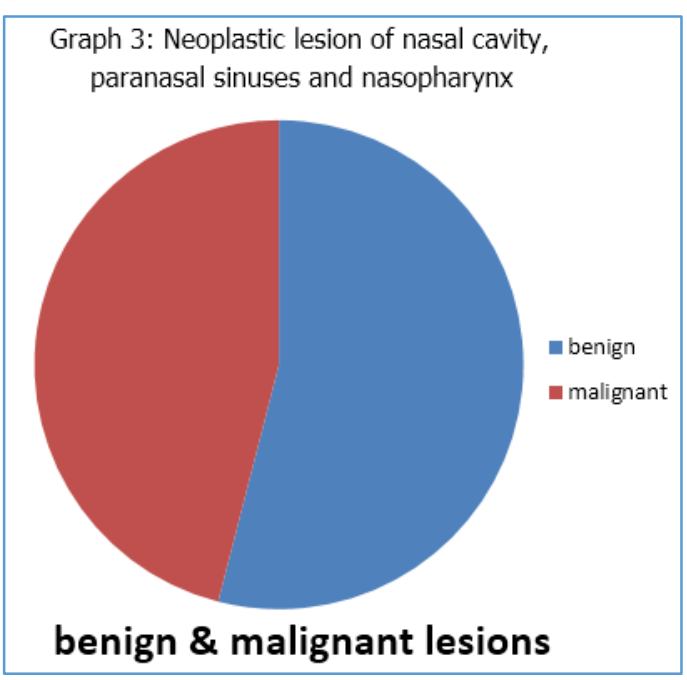
Table 3: That out of total 70 neoplastic lesions 38(54%) were benign and 32(46%) were malignant

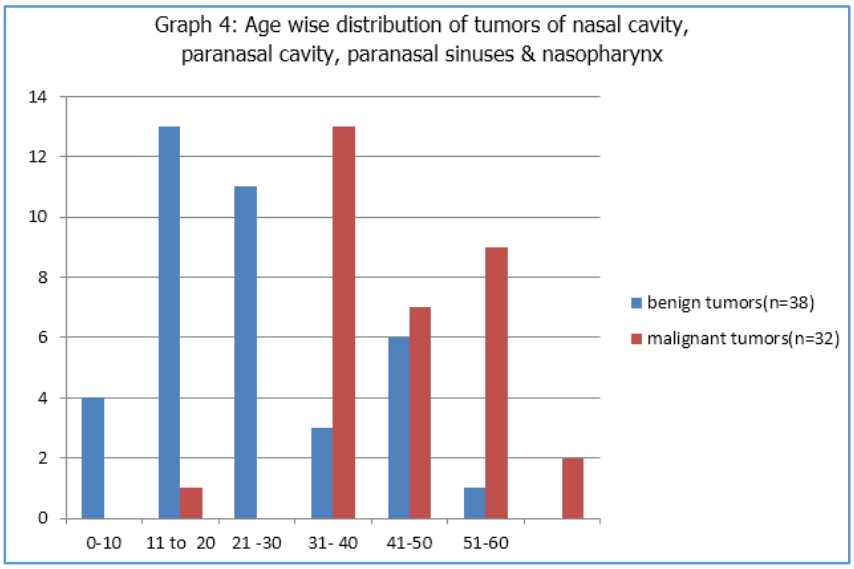
Age in years	Benign tumors (n=38)	Malignant tumors (n=32)
0-10	4	-
11-20	13	1
21-30	11	-
31-40	3	13
41-50	6	7
51-60	1	9
61-70	-	2

Table 4: Age wise distribution of tumors of nasal cavity, paranasal cavity, paranasal sinuses & nasopharynx


Graph-1 %
inflammatory
neoplastic


Graph-2
40
35
30
25
20
15
10
5
0
nasal obstruction
epistaxis
headache
facial swelling
lymphadenopathy
cranial nerve palsy
benign
malignant


Graph 3: Neoplastic lesion of nasal cavity, paranasal sinuses and nasopharynx
benign
malignant
benign & malignant lesions


Graph 4: Age wise distribution of tumors of nasal cavity, paranasal cavity, paranasal sinuses & nasopharynx
14
12
10
8
6
4
2
0
0-10
11 to 20
21 -30
31- 40
41-50
51-60
benign tumors(n=38)
malignant tumors(n=32)