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Original Research Article

Study of Various Clinical Presentations of Sinonasal Tumours from a Tertiary Care Centre in India

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Abstract

Introduction: Sinonasal tumours are relatively common in ENT OPD. These patients have different etiologies but may have similar clinical presentations, which causes hindrances in making a definitive diagnosis.

Aim and objective: The study aims at understanding the various clinical presentations of patients having sinonasal tumours and their histopathological diagnosis.

Materials and Methods: Every consecutive patient of sinonasal tumour attending ENT OPD from Nov 2016 to October 2018 was included in the study, while those having a history of previous sinonasal surgeries and congenital sinonasal tumours were excluded from the study, which turned out to be 72 as sample size.

Results: The study showed an almost equal ratio of males to females. A maximum number of patients in the age group of 31-40 years had nasal obstruction as the most common symptom. The highest number of cases were of non-neoplastic inflammatory etiology, i.e., 47.2%. Among benign neoplastic patients, inverted papilloma had the highest cases, i.e.13.8%, and among neoplastic malignant cases, the highest number belonged to SCC of the maxilla and sinonasal SCC each, i.e., 2.77%.

Conclusion: Various sinonasal tumours may have similar clinical presentations but diverse etiopathogenesis; therefore, detailed history and clinical examination along with incisional or excisional biopsy are to be done to reach the final diagnosis so that the treatment can be given accordingly.

Keywords: sinonasal tumours, histopathology, non-neoplastic inflammatory, non -neoplastic granulomatous, neoplastic benign, neoplastic malignant

Introduction

Concepts of the anatomy of the paranasal sinuses have been known since the turn of the 19th and 20th century. The nasal cavity and paranasal sinuses are collectively called the sinonasal tract and differ from the nasopharynx embryologically and anatomically, though they are in continuity. [1]

It forms a complex system of the upper respiratory tract; this region is endowed

with various elements such as epithelial, glandular, lymphoid, cartilage, and bone. It is also exposed to certain infections and tumors like true neoplastic conditions. The nasal cavity and paranasal sinuses are lined by stratified squamous, pseudostratified columnar, and transitional epithelium. [2, 3]

Sinonasal tumours are a relatively common presentation in ENT Out Patient Department. The tumours of sinonasal tracts can be of a wide variety like inflammatory, non-neoplastic and neoplastic. Malignancy of the sinonasal tract is rare. [4] Presentation of all sinonasal masses is similar, i.e., nasal obstruction, nasal discharge, which may sometimes be blood stained, epistaxis, sneezing, disturbance in smell, orbital symptoms, ear symptoms, snoring, sleep apnoeic spells, etc.. [5] These patients can also have facial deformity due to facial swelling or repeated episodes of epistaxis. Hence the present study was performed to study various clinical presentations of Sinonasal tumours.

Material and Method

It was an observational study at a tertiary healthcare hospital in central India from November 2016 to October 2018. Every consecutive patient with sinonasal tumours attending ENT OPD was included in the study. Those patients with a history of previous nasal surgeries or congenital sinonasal tumours were excluded from the study.

A total number of 72 cases were selected in the study. A detailed history of age, sex, occupation, chief complaints, history, allergic disorders, and addictive habits were taken. A thorough clinical examination of the ear, nose, and throat was conducted. Incisional/ Excisional biopsy was taken under required anaesthesia and sent for histopathological examination for a definitive diagnosis.

Results

The majority of study subjects were males, i.e., 37 (51.39%) as against 35(48.61%) females, with an almost equal ratio of male to female (1.05:1). Out of 72 patients majority were in the age group of 31 to 40 years (20 subjects) followed by 41 to 50 years (15 subjects) and 21 to 30 years (12 subjects). The mean age of study subjects was 37.77± 13.96 years in females and 45.08 ± 14.68 years in males, which was statistically significant. The overall mean age of study subjects is 41.53+14.70.

Based on presenting complaints, nasal obstruction was the most common complaint in 66 cases (91.67%). They were followed by a reduced sense of smell in 37 (51.39%) cases. 36 (50%) cases had nasal discharge, 35(48.61%) cases presented with facial pain, and 31 (43.06%) cases had sneezing. 30 patients (41.66%) complained of nasal mass, 20 (27.28%) had facial swelling, 16(22.22%) had post-nasal discharge, and 9 (12.5%) had ocular symptoms.

Table 1: Age-wise distribution of sinonasal tumours

Age group (in years)	Non-neoplastic		Neoplastic				Total	
	Inflammatory and Granulomatous		Benign		Malignant			
	N	%	N	%	N	%	N	%
10 to 20	4	8.33	2	11.76	0	0	6	8.33
21 to 30	9	18.75	2	11.76	1	14.29	12	16.67
31 to 40	13	27.03	6	35.29	1	14.29	20	27.78
41 to 50	10	20.83	4	23.53	1	14.29	15	20.83
51 to 60	8	16.66	1	5.88	1	14.29	10	13.89
61 to 70	4	9.52	2	11.76	3	42.86	9	12.50
Total	48	100.00	17	100.00	7	100.00	72	100.00

Table 1 shows age wise distribution of sinonasal tumours according to the type of disease on histopathology. Out of 48 cases of non-neoplastic lesions, which include both inflammatory and granulomatous disease majority of patients, 13 (27.03%), were in the age group of 31 to 40 years, followed by 41-50 years and 21 to 30 years, having 10(20.83%) and 9(18.75%) cases. Out of 17 cases of neoplastic benign lesions majority of patients, 6(35.29%), were in the age group of 31-40 years. Out of 7 cases of malignant neoplastic diseases, the majority were in the age group of 61-70, i.e., 3(42.86%) cases.

The mean duration in a month for various symptoms was highest for nasal obstruction at 6.21 months, followed by nasal discharge at 5.74 months. Then the next frequent symptom was facial pain, with a mean duration of 5.6 months. The mean duration for sneezing, reduced sensation of smell, facial swelling, PND, ocular symptom, and nasal mass were 5.43, 5.14, 5.25, 4.9, 2.33, and 2.4 months respectively.

Chart 1 shows that the majority of the sinonasal tumours were on the right side (37.56), followed by bilateral (34.72%), and the least was on the left side (27.72%)

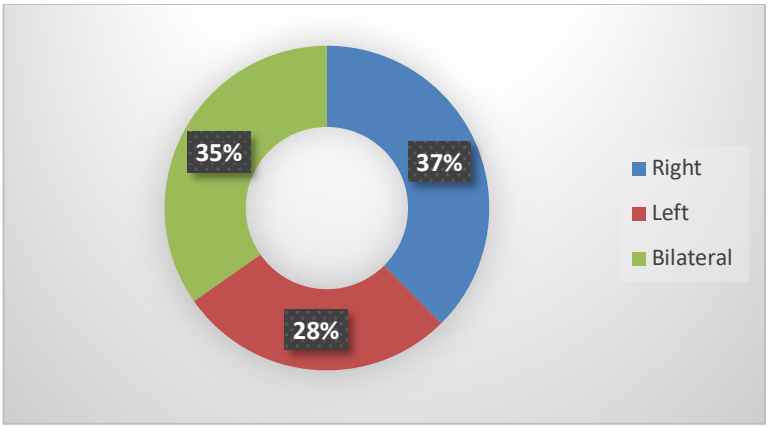

Figure 1: Distribution as per side of sinonasal tumours

Table 2: Distribution of cases based on diagnosis on histopathology

Diagnosis	(N)	(%)
Non-Neoplastic (Inflammatory and Granulomatous)		
Inflammatory Polyps	34	47.2%
Fungal sinusitis with polyp	8	11.1%
Rhinosporidiosis	4	5.5%
Rhinoscleroma	2	2.7%
Neoplastic Benign		
Inverted Papilloma	10	13.8%
Capillary Haemangioma	3	4.16%
Cavernous Haemangioma	2	2.7%
Chondroblastoma	1	1.38%
Osteoblastoma	1	1.38%
Neoplastic Malignant		
Chondroblastic osteosarcoma	1	1.38%
Mucoepidermoid carcinoma	1	1.38%
SCC maxilla	2	2.77%
Sinonasal SCC	2	2.77%
Adenocarcinoma	1	1.38%
Total	72	100%

As shown in Table 2, according to the histopathological report, the maximum number of patients in Non-neoplastic category were of inflammatory polyps, i.e., 34, followed by fungal sinusitis with polyps, i.e., 8. Among non-neoplastic granulomatous lesions, 4 cases of rhinosporidiosis and 2 were of rhinoscleroma. Amongst benign neoplastic patients, a maximum number of cases were of Inverted papilloma, i.e., 10, followed by 3 cases of capillary haemangioma, 2 of cavernous haemangioma, and 1 each of chondroblastoma and osteoblastoma. Amongst neoplastic malignant cases, two patients were squamous cell carcinoma of the maxilla, sinonasal squamous cell carcinoma, adenocarcinoma, Mucoepidermoid carcinoma, and Chondroblastic osteocarcinoma had 1 case each.

Table 3: Gender-wise distribution of sinonasal tumours

Gender	Non-neoplastic				Neoplastic				Total	
	Inflammatory		Granulomatous		Benign		Malignant			
	(N)	(%)	(N)	(%)	(N)	(%)	(N)	(%)	(N)	(%)
Female	24	57.14	1	16.67	5	29.41	5	71.43	35	48.61
Male	18	42.86	5	83.33	12	70.59	2	28.57	37	51.39
Total	42	100.00	6	100.00	17	100.00	7	100.00	72	100.00

Table 3 shows that among 42 cases of inflammatory lesions, 24(57.24%) were females and 18(42.86%) were males. Among granulomatous diseases 1(16.67%) was female and 5(83.33%) were males. Neoplastic benign constituted 17 patients, of which 5(29.41%) were female, and 12(70.59%) were male. Among 7 neoplastic malignant cases, 5(71.43%) were females, and 2 (28.57%) were males.

Figure 1: Patient with inflammatory polyp

Figure 2: Anterior rhinoscopy of a patient with benign nasal mass

Figure 3: Clinical presentation of a case of Ca maxilla

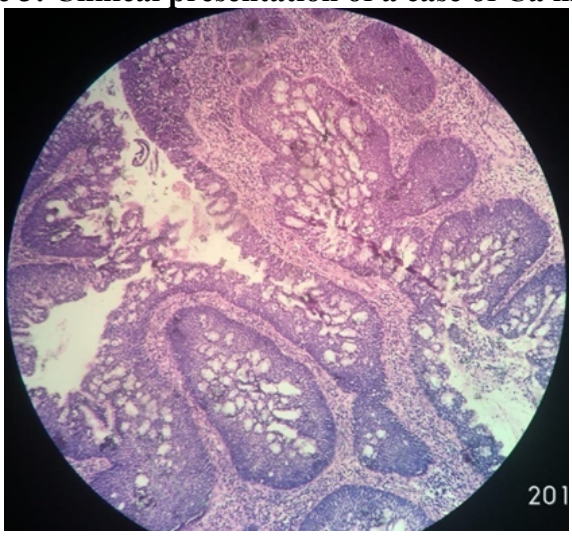

Figure 4: Inverted papilloma on histopathology

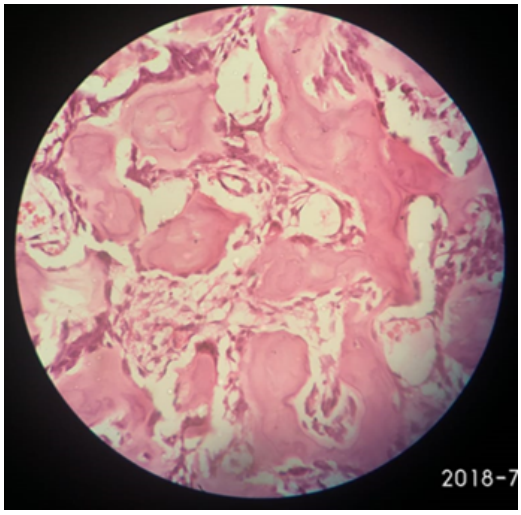

Figure 5: Osteoblastoma on histopathology

Discussion

There was a male predominance in the studies done by Kanwar.SS et al. [6] M: F ratio is 1.3:1, Chaterjee P et al. [7] M: F ratio of 1.6:1. While Bakeri A et al. [8] found minimal female predominance M: F ratio 1:1.2 respectively. In the present study Male is to female ratio was almost equivalent to 1.05:1.

In the study of Vaghela K et al. [9] (N=100), most patients were in the 4th decade, whereas it was the 2nd to 4th decade in Maheshwari A et al [10] studies. In our present study, most cases were in the 4th decade, similar to the above studies.

The mean age of the study population in the Islam T et al. [11] studies (N= 76) and Bist SS et al. [12] study (N=110) was 35.95 years and 39.4 years, respectively, and were 41.53 years in our present study.

Non-neoplastic lesions were commonly seen in the 2nd to 4th decade in Maheshwari A et al [10] study and Majumdar AB et al [13] study, while it was more in the 2nd and 3rd decade in Bhattacharya J et al [14] study. Neoplastic benign lesions were commonly found in the 2nd decade in Rawat DS et al [15] study and Bhattacharya J et al [14] study, 2nd to 4th decade were most commonly involved in Lathi et al [16] study. Neoplastic malignant lesions were commonly seen in patients above 40 years, i.e., 5th decade onwards in Maheshwari A et al [10] and Rawat D S et al [15] studies and the 4th to 6th decade in Majumdar AB et al [13] study our findings were in agreement with above studies. In our study, non-neoplastic sinonasal tumours were common in the 4th decade; benign neoplastic lesions were in the 4th decade, and malignant sinonasal tumours were in the 7th decade.

According to the present study, most masses were present on the right side, 37.56%, followed by bilateral 34.72%, and the least number of cases were present on the left side, 27.72%. These findings were in contrast to Bist et al. 12, where the maximum number of cases were on the left side 37.27%, followed by the right side at 29.09%, and only 25.45% were present bilaterally.

Table 4: Presenting symptoms in various studies

Symptoms	Study			
	Lathi A et al. 2007[16]; N=112	Maheshwari A et al.2017[10]; N=80	Kanwar SS et al 2017[6]; N=91	Present study 2018; N=72
Nasal obstruction	97.3%	88.75	42.3%	91.67%
Reduced sense of smell	31.25%	53.75%	-	51.39%
Nasal Discharge	49.1%	72.5%	40.8%	51.39%
Facial Pain	3.9%	-	33.8%	48.61%
Facial swelling	11.6%	15%	-	27.8%
Sneezing	-	31.25%	-	43.06%
PND	-	-	-	22.22%
Ocular symptoms	10.7%	5%	-	12.50%
Nasal Mass	-	-	-	41.66%
Headache	16.9%	51.25%	67.7%	-

As shown in table 4, nasal obstruction was the most typical presenting symptom, followed by nasal discharge in Lathi A et al. study [16] and Maheshwari A et al. [10] study so also in our research, while Kanwar SS et al. [6] found headache as the most typical presenting symptom followed by nasal obstruction.

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