

Original Research Article

A study of benign sino-nasal tumors in rural tertiary care hospital

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ABSTRACT

Background: The sino-nasal unit, although anatomically a very small space, is quite exceptional in the sense that an eclectic mix of neoplastic tumors originate from here. The diverse nature of the neoplastic pathologies and their unique natural histories prompted for this study.

Methods: In this prospective study of two years, done in a rural tertiary care hospital of India, 46 patients with benign neoplastic tumors of nasal cavity, sinuses and nasopharynx were analyzed for their clinic-pathological and radiological profile and surgical management.

Results: The incidence of benign tumor was predominant in second decade (34.8%) with significant male preponderance (M:F ratio 2.28:1). Unilateral nasal obstruction (100%) and epistaxis (84.8%) were the two most common presenting complaints. Almost half (48%) of the patients presented as late as more than one year after the onset of the symptoms. Nasal cavity was the commonest site of the tumors (50%). The most common benign tumor in present study was capillary hemangioma (41.31%) followed by angiofibroma (26.09%). All tumors were removed by a standard functional endoscopic sinus surgery or combined approach. Except a single case of inverted papilloma, all the other cases showed no recurrence at the end of one year follow up period.

Conclusions: It can be concluded from present study that conjoint application of radiology, endoscopy and histopathology is of utmost importance in dealing with benign neoplastic pathology of sino-nasal region. There is significant success in managing benign sino-nasal tumors with functional endoscopic sinus surgery or by combined approach.

Keywords: Sino-nasal tumors, Benign neoplasm, Unilateral nasal mass, Endoscopic sinus surgery

INTRODUCTION

The nose and sinuses are exposed to a variety of factors like infections, chronic irritants, antigenic stimulants, mechanical trauma and many other influences. Result of these multifaceted exposures may be formation of a tumor like or non-neoplastic and neoplastic conditions.¹

Unilateral nasal mass, although a common clinical entity, can be perplexing at times because of the wide range of the pathologies affecting nasal cavity which represents the area of greatest histological diversity in the body with every tissue type represented.

Neoplastic tumors of nasal cavity are one of the most challenging problems in the field of head and neck surgery as the symptomatology of all nasal masses, neoplastic or non-neoplastic, are non-specific and vague and hence ignored by the patients and the general practitioners alike. As a consequence, patients often present late and owing to the intimate relationship of sino-nasal tract with important adjacent structures, such as orbit and brain, their involvement makes the management of these masses even more difficult.

Significant improvements in imaging techniques and widespread application of endoscopy beyond the confinement of nasal cavity have led to renewed interest

in the management of neoplastic masses of nasal cavity. The present study focuses on the benign neoplastic tumors of the sino-nasal tract presenting as unilateral nasal mass and highlights their management by endoscopic surgery or by combined approach.

Objectives

The objectives were to study age and gender wise distribution of cases with benign sino-nasal tumors; to study clinico-pathological features of these tumors; and to study location of these tumors by nasal endoscopic and radiological examination.

METHODS

This was a facility based prospective observational study, protocol of which was approved by the Institutional Ethical Committee of the medical college. Written informed consent was taken from all study subjects.

Present study included 46 patients with benign sino-nasal tumor diagnosed either clinically, radiologically or histopathologically attending ENT OPD at rural tertiary care institute. Sampling method used was universal. Study was carried out over a period of 2 years from September 2013 to August 2015. Cases with malignant sino-nasal tumors and cases with non-neoplastic sino-nasal mass were excluded.

All cases were analyzed as regard to the history, clinical presentation, routine investigations were carried out in

order to get fitness for surgery. A detailed history was asked in every case, general and systemic examination was performed followed by otorhinolaryngological examination. This was followed by computed tomographic examination of nose and paranasal sinuses and diagnostic nasal endoscopic examination. Details of every case was recorded in separate case proforma. All patients were treated by surgery either endoscopically or by combined approach. All patients were followed up for recurrence for 1 year. Data was collected in pre-structured proforma which was pilot tested and after ensuring its validity. The data collected was then analyzed by using SPSS IBM version 20.

RESULTS

In the present prospective study, there was no lost to follow up and we could analyze all 46 patients giving the response rate of 100%. A total of 46 cases of benign nasal tumors were analyzed. The age distribution of the patients ranged from 7 years to 67 years with majority of the patients seen in the second decade (34.8%). There was a significant male preponderance with 32 male patients and 14 female patients with male to female ratio being M:F=2.28:1. The most predominant symptoms were unilateral nasal obstruction (100%), epistaxis (84.8%) and rhinorrhea (78.3%). Other less frequent symptoms were headache, hyposmia, hypo nasal voice, pain and swelling over face, external nasal deformity and orbital symptoms like proptosis and double vision as shown in Table 1.

Table 1: Symptoms in benign sino-nasal tumors (n=46).

S. no.	Symptoms	Number	Percentage
1.	Nasal obstruction	46	100
2.	Epistaxis	39	84.8
3.	Rhinorrhoea	36	78.3
4.	Headache	19	41.3
5.	Hyposmia/anosmia	11	23.9
6.	Hyponasal voice	7	15.2
7.	Pain over face	5	10.9
8.	External nasal deformity	3	6.5
9.	Facial swelling	2	4.3
10.	Eye symptoms	2	4.3

Table 2: Location of benign sino-nasal tumors (n=46).

S. no.	Site	Number	Percentage
1.	Nasal cavity	23	50
2.	Para-nasal sinuses	13	28.3
3.	Nasopharynx	10	21.7

Table 3: Histopathology of benign sino-nasal tumors (n=46).

S. no.	Histopathology	Number	Percentage
1.	Haemangioma	19	41.31
2.	Angiofibroma	12	26.09

Continued.

S. no.	Histopathology	Number	Percentage
3.	Inverted papilloma	9	19.57
4.	Schwannoma	2	4.35
5.	Fibroma	1	2.17
6.	Paraganglioma	1	2.17
7.	Leiomyoma	1	2.17
8.	Immature Teratoma	1	2.17
Total		46	100



Figure 1: Facial swelling.

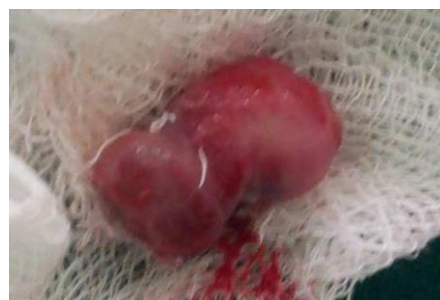


Figure 4: Surgical specimen.



Figure 2: Nasal mass.

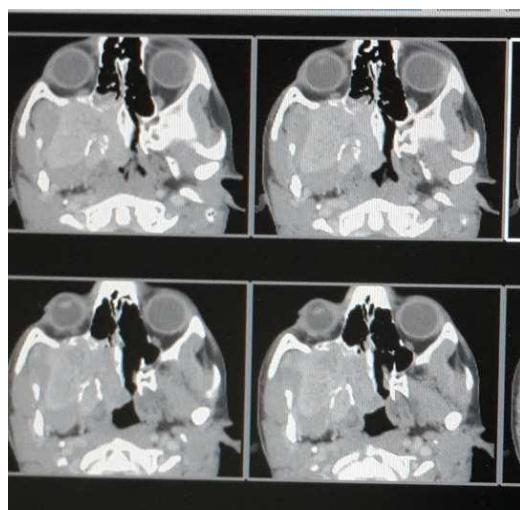


Figure 3: Contrast enhanced computed tomography of paranasal sinuses with 3 mm cuts.



Figure 5 (a and b): Palatal buldge.

Majority of tumors were seen arising from the lateral wall of nasal cavity (28 cases), from nasopharynx (10 cases) followed by tumors arising from medial wall of nasal cavity (8 cases). Radiological study further revealed 23 tumors were confined to the nasal cavity, 13 tumors extending to the sinuses and 10 cases extending into nasopharynx as shown in Table 2.

All the nasal masses were unilateral with left sided nasal masses in 27 cases predominated over right sided nasal masses in 19 cases. Histopathological examination was proven to be confirmatory in clinching the final diagnosis. Hemangioma was the commonest benign sino-nasal tumor in the present study comprising 19 cases (41.31%), angiofibroma was the second commonest tumor with 12 cases (26.09%) and inverted papilloma being next common with 9 cases (19.57%). There were 2 cases of nasal Schwannoma and one case each of fibroma, paraganglioma, leiomyoma and immature teratoma as shown in Table 3.

All cases were treated by surgery either endoscopically or by combined approach. Only one case of inverted papilloma had recurrence with biopsy showing squamous cell carcinoma during follow up period of one year.

DISCUSSION

Present study was conducted for two years from September 2013 to August 2015, at ENT department of tertiary care hospital of rural area. Total 46 cases fulfilling study criterion presented during the study period. In the present study the benign tumors had a strong male predilection with male to female ratio M:F, being 2.28:1 which was similar to a study by Das et al where the ratio was 2.72:1.² Such high ratio might be attributed to the high proportion of angiofibroma and inverted papilloma in our study, which were male-predominant diseases. 2nd and 3rd decades were the chiefly affected age group accounting for 56.52% of the total study population. Rawat et al reported similar findings in their study while Zafar et al also reported mean age of presentation as 26.8 years.^{3,4} Unilateral nasal obstruction (100%) and epistaxis (84.8%) were the two most common presenting complaints. Comparable findings were noted in studies by Rawat et al and Nair et al.^{3,5} Tritt et al in his study found epistaxis to be a symptom that has significant association with neoplastic pathology.⁶ Left sided nasal mass (58.7%) predominated over right sided nasal mass in our study which was comparable with study by Bist et al but it was in contrast to study by Bakari et al.^{7,8}

Half of the tumors were confined to the nasal cavity with paranasal sinus being the next common site which is comparable to study by Zafar et al.⁴ In present study most common benign sino-nasal tumour was capillary haemangioma in 41.31% cases. This was comparable with study by Lathi et al, Dasgupta et al and Kulkarni et al.⁹⁻¹¹ Majumdar et al reported capillary haemangioma in

23.52% cases.¹² Angiofibroma was second common tumour in present study (26.09%) which is comparable with study by Kulkarni et al who reported angiofibroma in 30.77% cases.¹¹ Lathi et al reported angiofibroma in 5.3% cases as shown in Table 4.⁹ All cases were treated by surgery either endoscopically or by combined approach. Only one case of inverted papilloma had recurrence with biopsy showing squamous cell carcinoma during follow up period of one year.

CONCLUSION

It can be concluded from present study that conjoint application of radiology, endoscopy and histopathology is of utmost importance in dealing with benign neoplastic pathology of sino-nasal region. There is significant success in managing benign sino-nasal tumors with functional endoscopic sinus surgery or by combined approach. Moreover, the study done in a tertiary hospital in a rural part of Maharashtra, India has an immense impact as the demographic profile often did not match the already existing literature of the western countries.

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Conflict of interest: None declared

Ethical approval: The study was approved by the Institutional Ethics Committee

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