



MANAGEMENT OF BENIGN SINO-NASAL MASSES – A STUDY OF 50 CASES

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ABSTRACT

This is a prospective study of 50 cases of benign neoplastic nasal masses. The study population consisted of all diagnosed cases of benign nasal tumors according to WHO classification, which underwent surgery in Department of ENT & Head & Neck Surgery, BJ Medical College and Civil Hospital, Ahmedabad; between the duration of June 2015 to June 2017. The study evaluates the clinical behavior and the surgical management of the benign nasal tumors. The tumors were most commonly seen in second and third decade with a male preponderance. Nasal obstruction was the most common presenting symptom. The surgical approach was chosen based on the extent of the tumor. 6% recurrence rate was observed after surgical excision. Proper history, thorough examination and histological evaluation are the key for effective management.

KEYWORDS

benign nasal tumor, juvenile nasopharyngeal angiofibroma, inverted papilloma, osteoma.

INTRODUCTION

The nose being the most prominent part of the human face has significant functional and aesthetic significance. Nasal masses are common finding in an ENT (Ear, Nose and Throat) outpatient department. Most patients present with primary complaint of nasal obstruction. Other symptoms include nasal discharge, epistaxis and disturbances of smell. A sino-nasal mass can have various differential diagnoses. They may be congenital, inflammatory, neoplastic (benign or malignant) or traumatic in nature. It is very important for a clinician to diagnose the rare nasal tumors as they are often missed due to the common and vague symptoms. The present study is restricted only to the benign neoplastic lesions of the nose and paranasal sinuses.

MATERIAL AND METHOD

The prospective study was conducted in sample of 50 patients diagnosed as benign nasal tumors. The study population consisted of all diagnosed cases of benign nasal tumors according to WHO classification, who underwent surgery in Department of ENT & Head & Neck Surgery, BJ Medical College and Civil Hospital, Ahmedabad. The duration of the study was taken as 24 months from June 2015 to June 2017. All the diagnosed cases of benign nasal tumors, who underwent surgery at our hospital were included in the study, however the patients who were diagnosed with malignant nasal tumors or allergic or infective pathologies were excluded from the study.

The method of study comprised of noting detailed history, clinical examination, hematological investigation, radiological investigations and histopathological examination of the tissue specimen.

RESULTS

The present study evaluates the clinical behavior and surgical management of benign nasal tumors. A total of 50 diagnosed cases of benign nasal tumors were evaluated. The basic characteristic (age), clinical characteristics of the patients, local examination, nasal endoscopy findings, computer tomography scan findings, approach of surgical resection, resection of tumor, complications and recurrence, were noted during the study.

CASE DISTRIBUTION -

Juvenile nasopharyngeal angiofibroma 20 cases (40%), inverted papilloma 15 cases (30%), were the common pathologies encountered followed by capillary hemangioma 10 cases (20%), followed by less common lesions such as fibrous dysplasia 2 cases (4%), ossifying fibroma 2 cases (4%) and osteoma 1 case (2%).

Table 1. Case distribution

PATHOLOGY	CASES	PERCENTAGE
JNA	20	40%
INVERTED PAPILLOMA	15	30%
CAPILLARY HEMANGIOMA	10	20%
FIBROUS DYSPLASIA	2	4%

OSSIFYING FIBROMA	2	4%
OSTEOMA	1	2%

AGE DISTRIBUTION - In JNA, Maximum numbers of 17 cases (85%) were seen in the 2nd decade followed by 3 cases (15%) in 3rd decade of life. In cases of inverted papilloma, marked incidence of 7 cases (46%) was observed in 5th decade of life, followed by 4 cases (26.67%) in 4th decade and 3 cases (20%) in 6th decade of life. In capillary haemangioma the most common age group affected was 21-30 years, that is 3rd decade of life.

Table 2. Age distribution

Age Group	Pathology				Total
	JNA	Inverted Papilloma	Capillary Hemangioma	Fibro-osseus Lesions	
0-10	0	0	0	0	0
11-20	17	0	0	1	18
21-30	3	1	6	1	11
31-40	0	4	3	2	9
41-50	0	7	1	1	9
51-60	0	3	0	0	3
61-70	0	0	0	0	0
71-80	0	0	0	0	0

GENDER DISTRIBUTION OF CASES - In our study of 50 cases, there were 33 (66%) male patients and 17 (34%) female patients in the ratio of 1.9:1.

Table 3 Gender wise distribution

	MALE	FEMALE	TOTAL
CASES	33	17	50

Clinical Features - The clinical characteristics of the patients which is epistaxis, nasal obstruction, nasal discharge, nasal mass, headache, loss of smell, nasal speech, facial deformity, eye complaints, ear complaints are summarized in table 4.

Table 4 Clinical complaints

SYMPTOMS	CASES	PERCENTAGE
NASAL BLOCKAGE	30	60%
NASAL BLEED	30	60%
NASAL DISCHARGE	18	36%
NASAL MASS	15	30%
LOSS OF SMELL	12	24%
FACIAL DEFORMITY	7	14%
HEADACHE	5	10%
NASAL TWANG	5	10%

EYE COMPLAINTS	3	6%
EAR COMPLAINTS	5	10%
THROAT COMPLAINTS	0	0%

Nasal obstruction 30(60%), epistaxis 30(60%) and nasal discharge 18(36%) were the commonest symptoms followed by mass 15(30%), hyposmia 12(24%), facial deformity 7(14%), headache 5(10%) and nasal twang of speech 5(10%). Benign tumors of nose and paranasal sinuses presenting with ocular symptoms and otological complaints were less frequent.

MANAGEMENT - All the patients included in the study underwent surgery as definitive management of the tumor with various surgical approaches depending on the extent of the tumor on nasal endoscopy and radiological findings. The surgical approaches included trans nasal endoscopic approach, mid-facial degloving and lynch-howarth procedure.

	Endoscopic Approach	Open Approach	
		Mid-facial Degloving	Lynch-howarth Procedure
JNA	17	3	-
Inverted Papilloma	15	-	-
Capillary Hemangioma	10	-	-
Ossifying Fibroma	1	1	-
Fibrous Dysplasia	2	-	-
Osteoma	-	-	1

All patients of inverted papilloma staged 1,2 and 3 according to Krouse classification underwent endoscopic resection.

The patients diagnosed with fibrous dysplasia underwent endoscopic excision, as the tumor involvement was limited to ethmoid bone. In patients of ossifying fibroma, 1 case was managed endoscopically, while the other case was initially managed endoscopically and later on converted into open approach as the complete excision of tumor was not achieved by endoscopic approach.

Outcomes - All the patients are followed up after 1 month, 3 months, 6 months and 1 year, and in follow up examination they underwent diagnostic endoscopy to evaluate the recurrence of the pathology, the patient is advised for radiological investigations in case of any suspicion.

Table. 6 Outcome on follow up.

	Residual	Recurrence
JNA	2	1
Inverted Papilloma	0	2
Capillary Hemangioma	0	0
Fibro-osseus Lesions	0	0

The residual lesion in JNA was seen in 2 out of 3 patients classified under stage IV Fisch classification, and patient underwent radiotherapy as the residual tumor was in the proximity of the cavernous sinus and carotid artery. The recurrence was seen in patient operated for stage III disease and was managed by revision endoscopic surgery.

The recurrence in inverted papilloma was seen in patient operated for T3 (KROUSE CLASSIFICATION), on 6 months follow up, and was managed by revision endoscopic surgery. The histopathology report of the tissue excised was suggestive of undifferentiated squamous cell carcinoma, the patient underwent 6-week cycle of radiotherapy.

COMPLICATIONS – Table.7. Complications

MINOR COMPLICATION	CASES
ADHESIONS	8
MINOR EPISTAXIS	4
PERIORBITAL ECCHYMOSIS	3
INFECTION	1
MAJOR COMPLICATION	
MAJOR EPISTAXIS	1
CSF LEAK	1

Management and results of minor complications Table. 8 Management and result of minor complications

COMPLICATION	TIME	MANAGEMENT	RESULT
ADHESIONS	4-6 WEEKS	Release under local anesthesia	IMPROVED
MINOR EPISTAXIS	1ST 3 DAYS	Conservative management -head up position -ice packing - one patient required repacking with Neosporin pack for 24 hours	STOPPED
PERIORBITAL ECCHYMOSIS	1 DAY	Conservative management -head up position -ice packing	Spontaneous improvement within 2 weeks
INFECTION	1 WEEK	Regular suction and systemic antibiotic	IMPROVED

Management and result of major complications Table. 9. Management and result of major complications

COMPLICATION	TIME	MANAGEMENT	RESULT
MAJOR EPISTAXIS	1 WEEK	Endoscopic examination and cauterization	STOPPED
CSF LEAK	3 MONTHS	Conservative management	STOPPED

DISCUSSION

Although not so uncommon in clinical practice, the condition of a benign mass in the Sino-Nasal cavity is often neglected by the clinician suspecting the early symptoms of nasal obstruction and rhinorrhea to be associated with infective or allergic rhinitis. Incidence of benign nasal mass in the Indian subcontinent is poorly documented but western figures of overall nasal tumors including malignant tumors are estimated to be 1 in 1,00,000 people per year with males twice as much affected as females.^[1] Amongst which half are benign in nature.^[2]

Sino-Nasal masses had predilection for males, demonstrating a male to female ratio of 2.3:1. It was higher (male to female ratio of 1.7:1) in the study by Zafar et al.^[3] from India, while a study from Nigeria revealed an opposite ratio showing female preponderance (M: F ratio of 1:1.2)^[4]. A British review of nasal masses reported a ratio at 2:1 (M: F)^[5]. The 2nd to 4th decades of life are the most vulnerable period for development of Sino nasal masses. Bakari et al.^[4] had reported a peak incidence of 33 years, while for Zafar et al.^[3] the mean age of presentation was 22.5 years.

In our study, the most common age group affected by benign nasal mass was between 11-20 years, with male preponderance. The observation was comparable to the study conducted by K. V. Narayana Swami et al.^[6] on Indian population where in the most common affected group was 11-20 years.

The most common presentation of benign nasal mass was nasal blockage (60%), nasal bleed (60%) compared to 56.66% nasal blockage and 53 % of nasal bleed in the comparing study. The results were comparable to the study conducted by K. V. Narayana swami et al.^[6]

No recurrence was observed in cases of capillary hemangioma and fibro-osseous lesions.

CONCLUSIONS

The tumors of Nose and Paranasal sinuses can present at any age, however they are more commonly seen in second and third decade of life. Benign tumor occurred most commonly in males, except for capillary hemangioma which was more commonly seen in females. Juvenile Nasopharyngeal Angiofibroma was the most common tumor followed by Inverted papilloma. The most common presenting complaints were nasal obstruction, nasal bleeding, and nasal discharge. Nasal endoscopy and Computer Tomography scan are key investigations in the diagnosis and management of benign tumors. In management of benign nasal tumors, surgery was the definitive line of treatment. Endoscopic approaches have become the procedures of choice, they have been proven to be an effective alternative to the traditional approaches. All tumors of Nose and Paranasal sinuses should be subjected to histopathological examination for proper

management. Benign masses of nose make an interesting study which requires proper history, thorough examination, histological evaluation for effective management.

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