

Research Article

Histological correlation of nasal mass: a five year retrospective and prospective study

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ABSTRACT

Background: The presence of mass in the nose may seem to be a simple problem; however it raises several issues about the differential diagnosis. The aim of this study is to evaluate the histological profile of nasal masses in the environment.

Methods: This is a retrospective and prospective study of nasal masses during a period of five years of patients presenting to the clinician in our hospital.

Results: A total of 90 patients were analysed age ranging from 3 to 80 years. Majority of patients were in the second decade. Sex wise distribution showed a male to female ratio of 2.2:1. The main presenting symptom was nasal obstruction seen in 53.30% patients, while proptosis was seen only in malignant lesion. Among a total of 90 lesions in the nasal cavity 81.1% were benign, 15.5 % were malignant and 3.3% were inadequate sample. The commonest non neoplastic lesion was nasal polyp which comprised about 83.33% followed by rhinoscleroma, while the commonest benign neoplastic lesion was papilloma and comprised about 42.10% and squamous cell carcinoma was the most common malignant neoplastic lesion in the nasal cavity and comprised about 42.85%. Most patients with benign lesion were in the second decade. Malignant lesions occurred mainly after fifth decade, while inadequacy of sample was seen in the second decade.

Conclusion: Males are more commonly affected than females. Nasal obstruction is the commonest symptom. Simple inflammatory nasal polyp is still the commonest histological pattern seen while papilloma being the most common benign lesion and squamous cell carcinoma the most common malignant lesion.

Keywords: Nasal mass, Nasal polyp, Proptosis, Rhinoscleroma, Papilloma, Squamous cell carcinoma

INTRODUCTION

The aim of this study was to know the prevalence of nasal mass in M.Y. Hospital patients, to determine the incidence of nasal malignancy in patients presenting with nasal mass and to correlate various signs and symptoms in patients presenting with nasal mass. The presence of mass in the nose may seem to be a simple problem; however it raises several issues about the differential diagnosis. The nasal cavity along with the paranasal sinus forms a functional unit with common pathologic

processes affecting both of them. Nasal polyps as part of sinonasal masses have been medically recognised condition since the time of the ancient Egyptians.

The nose is the most prominent part of the face with substantial aesthetic and functional significance. It is one of the few organs of body invested with an aura of emotional and cultural importance. Anatomical location of the nose has been regarded as the direct avenue to the brain, man's source of intelligence and spirituality.

Nasal masses are common finding in an ENT (Ear, Nose and Throat) outpatient department. Most patients present with complaints of nasal obstruction.

A sinonasal mass can have various differential diagnoses. They can be

- Congenital
- Inflammatory
- Neoplastic (benign or malignant)
- Traumatic in nature

A congenital nasal mass may present intranasally, extranasally, or as external nasal mass with or without nasal obstruction. They are predominantly mid line swellings and include

- Dermoids
- Glioma
- Encephalocele

The inflammatory lesion include nasal polyps, rhinosporidiasis, rhinoscleroma and allergic fungal sinusitis

Nasal polyps are usually classified

- Antrochoanal Polyps
- Ethmoidal Polyps.

1. Antrochoanal: Single, unilateral can originate from maxillary sinus. Usually found in children.
2. Ethmoidal: Bilateral and usually found in adults.

The nasal masses are usually stained by H & E Stain.

METHODS

The present study is being undertaken in the department of pathology M.G.M medical college Indore. In this study all patients diagnosed with sinonasal masses during the period of five years both retrospectively and prospectively are included.

The criteria for selection of cases were mainly based on history and clinical examination. Detailed history was taken considering the patients' complaints, mainly nasal obstruction, mass in the nose, epistaxis, rhinorrhea, hyposmia and deformity of nose and face.

Clinical examinations were carried out as per standard protocols. Appropriate radiological and laboratory

investigations were done as appropriate. Biopsy was taken from all cases for histopathological examination to confirm diagnosis. Patients were treated either by pharmacotherapy, surgery, radiotherapy or chemotherapy or a combination as appropriate. Patients were asked for regular follow up.

RESULTS

Figure 1 shows sex distribution in which there were 63 males (70%) and 27 (30%) females, in a total of 90 cases.

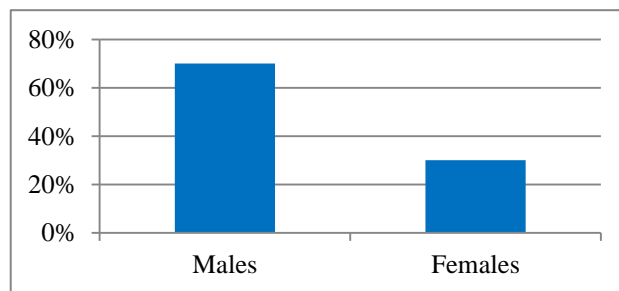


Figure 1: Sex wise distribution.

Figure 2 shows that out of 90 lesions in the nasal cavity 81.1% were benign, 15.5% were malignant and 3.3% were inadequate sample.

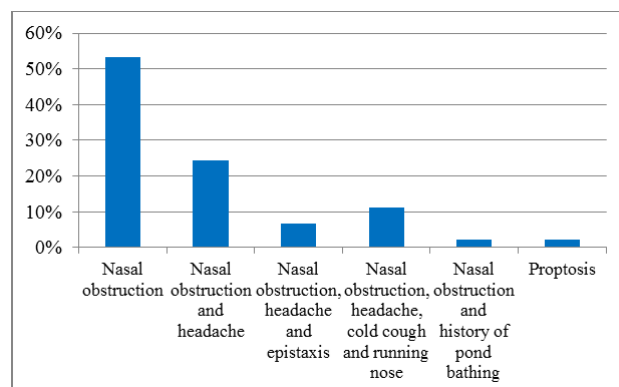


Figure 2: Relative proportion of benign and malignant lesions.

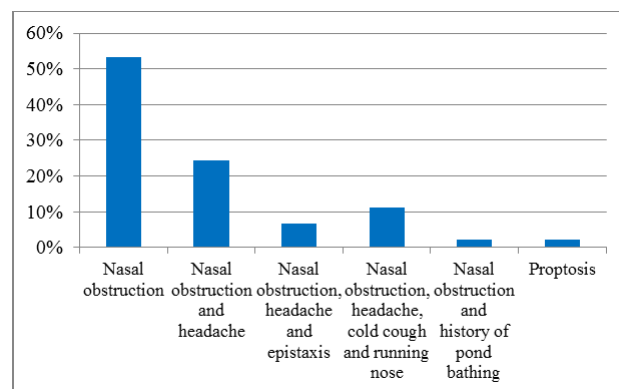


Figure 3: Signs and symptoms.

Nasal obstruction as the presenting complaint was seen in 53.30% patients, and was the most common symptom; while nasal obstruction along with headache was seen in 24.40 % patients, nasal obstruction with headache and epistaxis was seen in 6.6% patients. Nasal obstruction along with headache, cold, cough and running nose was seen in 11.10% patients. Nasal obstruction with the history of pond bathing was seen in 2.2% patients, while the history of proptosis was seen in 2.2% patient.

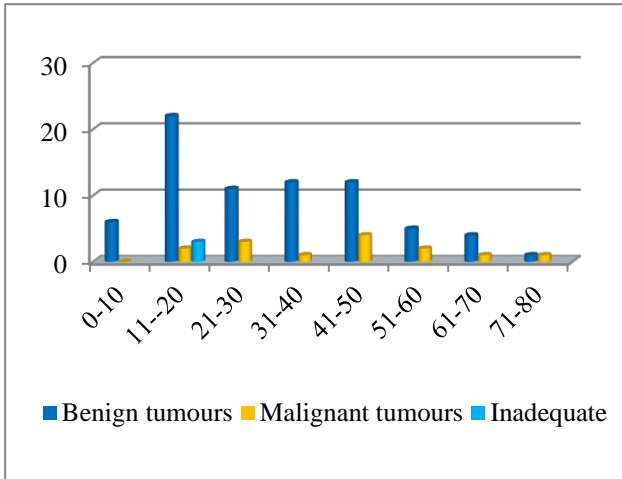


Figure 4: Age wise distribution.

Most patients with benign lesion were in the second decade. Malignant lesions occurred mainly in fifth decade, and inadequacy of sample was seen in second decade.

Figure 5 shows that out of total non-neoplastic lesions non neoplastic lesions of 54 in the nasal cavity; nasal polyp comprised about 83.33%, while rhinosporodiasis comprised about 3.70% and rhinoscleroma comprised about 7.40%, tubercular granuloma comprised about 3.70% and allergic fungal sinusitis comprised about 1.85%.

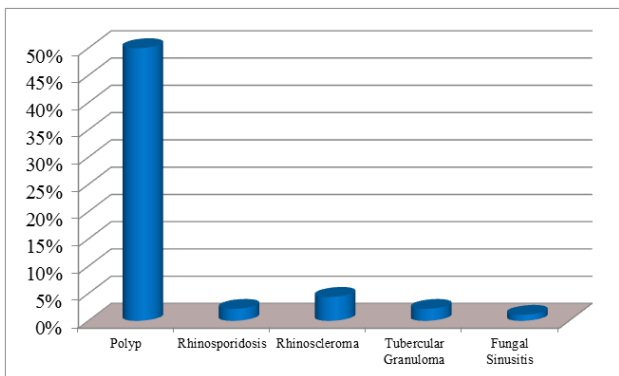


Figure 5: Distribution of non-neoplastic lesion.

Figure 6 shows that out of 19 neoplastic benign lesions in the nasal cavity 42.10% were papilloma, while capillary hemangioma comprised about 15.78% likewise

angiofibromas comprised about 10.52% and other lesions like fibrous dysplasia, osteoma, ameloblastoma, verrucous hyperplasia and pleomorphic adenoma comprised about 31.57 % of the total neoplastic benign lesions .

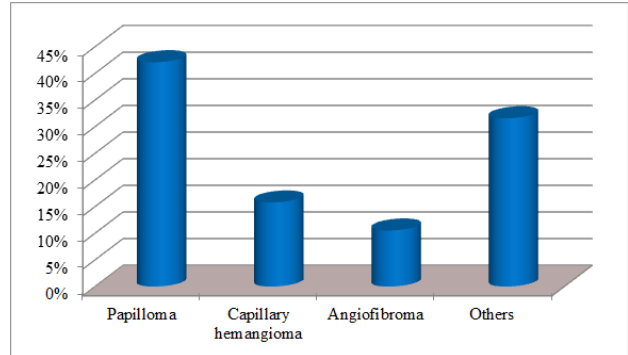


Figure 6: Distribution of benign lesions.

Figure 7 shows that out of a total 14 malignant neoplastic nasal lesions, squamous cell carcinoma were found in 42.85% patients, while neuroblastoma comprised about 7.14%, malignant neuroectodermal tumors comprised about 14.28% and other lesions like, anaplastic carcinoma, small cell carcinoma and adenoid cystic carcinoma comprised about 35.71% of all the malignant neoplastic lesions in the nasal cavity.

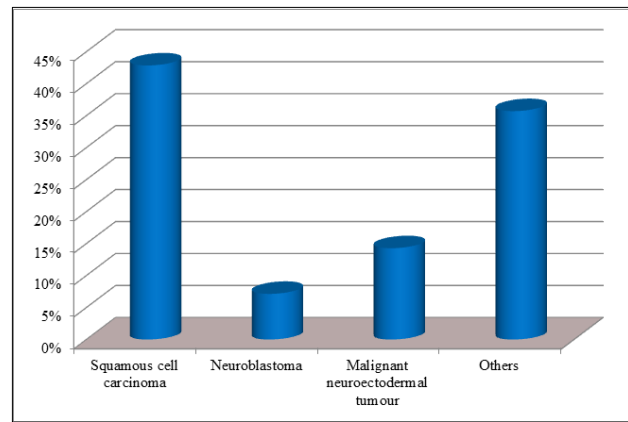


Figure 7: Distribution of malignant lesions.

DISCUSSION

The In the present study male predominance was seen i.e. 63 males (70%) and 27(30%) females, in a total of 90 cases. And their respective ratios were 2.3:1.

Similar findings were also observed by L. Panchal, Pradeep Vaideeswar. D. Kathpal 2005.¹

Similar findings were also observed in the study by U. Zafar et al.² from India where male to female ratio were 1.7:1.

Similar findings were also observed by A. Lathi MMA, Syed P. Kalakoti et al. (2009)³ in a sample size of 122 patients, where the male to female ratio was 1.5:1.

U Zafar, N. Khan, N. Afroz et al.² from JMC Aligarh, also observed the same results with, male to female ratio of 1.7:1 in a sample size of 240 cases.

Similar findings were also observed in a study conducted by Jyothi A. Raj, Sharmila P, Mitika Shrivastava et al.⁴ in BMC Bangalore where male to female ratio was 1.1:1 in a sample size of 61 patients

However in a study done in Nigeria revealed opposite result with female showing preponderance M:F ratio of 1:1.2.

In the present study majority of the lesions were benign 81.1% while only 15.5% was malignant.

According to L. Panchal, Pradeep Vaideeswar, D. Kathpal 2005.¹ the commonest pathological process affecting the nasal cavity are inflammatory; benign in nature.

In the present study most common presenting complaint was nasal obstruction seen in 53.30% patients, while nasal obstruction along with headache was seen in 24.40 patients, nasal obstruction with headache and epistaxis was seen in 6.6% patients. Nasal obstruction along with headache, cold, cough and running nose was seen in 11.10% patients. Nasal obstruction with the history of pond bathing was seen in 2.2% patients, while the history of proptosis was seen in only (2.2%) patient

Panchal et al., 2005⁽¹⁾ found nasal obstruction blood tinged mucus and epistaxis to be the most common symptom U Zafar, N. Khan, N. Afroz et al.² 2008 from JMC Aligarh, observed the same results with nasal obstruction to be the most common presenting complaints, in a sample size of 240 cases.

In the present study most patients with benign lesion were in the second decade while malignant lesions occurred mainly in fifth decade.

Panchal et al., 2005¹ reported similar results with most patients with benign tumour in the second and third decade while malignant lesion occurred mainly beyond third decade. U Zafar, N. Khan, N. Afroz et al.² reported a mean age of presentation was 22.5 years, and malignancies occurred after fourth decade.

Likewise in the present study out of total non-neoplastic lesions of 54 in the nasal cavity nasal polyp comprised about 83.3%, followed by rhinoscleroma which was the second most common non neoplastic lesion in the nasal cavity.

This concluded that nasal polyp were the most common non neoplastic lesions.

U Zafar, N. Khan, N. Afroz et al.² from JMC Aligarh, observed the same results with nasal polyps to be the most common non neoplastic lesion in the nasal cavity (82.06) in a sample size of 240 cases. Similarly they observed that rhinoscleroma was the second most common non neoplastic lesion in the nasal cavity.

In the present study out of 19 neoplastic benign lesions in the nasal cavity; 42.10% were papilloma, while capillary hemangioma comprised about 15.78% likewise angiofibromas comprised about 10.52% and other lesions like fibrous dysplasia, osteoma, ameloblastoma, verrucous hyperplasia and pleomorphic adenoma comprised about 31.57% of the total neoplastic benign lesions

This concluded that papillomas were the most common neoplastic benign lesions. Similar high incidence of papilloma was also observed by Panchal et al., 2005.¹

In our study we found one case of fibrous dysplasia while according to Tsai et al.⁵ fibrous dysplasia in the nasal cavity is rare.

Thus thorough sampling of the entire material in the laboratory is the golden rule to reach the diagnosis. This may apply also to specimen excised as inflammatory polyps in which might lack papilloma.

In the present study out of a total of 14 malignant neoplastic nasal lesions, squamous cell carcinoma were found in 42.85% patients, while neuroblastoma comprised about 7.14%, malignant neuroectodermal tumors comprised about 14.28% and other lesions like, anaplastic carcinoma, small cell carcinoma and adenoid cystic carcinoma comprised about 35.71% of all the malignant neoplastic lesions in the nasal cavity. This concluded that squamous cell carcinoma were the most common malignant lesion in the nasal cavity.

A. Lathi MMA, Syed P. Kalakoti et al. (2009)³ reported squamous cell carcinoma (92.3% of all malignant masses) to be the most commonly encountered malignancy of sinonasal tract in India.

L. Panchal, Pradeep Vaideeswar, D. Kathpal 2005.¹ also observed squamous cell carcinoma to be the most common histological type.

In the present study 3 out of 90 lesions were inconclusive due to inadequacy of sample.

CONCLUSION

In the present study majority of the lesions were benign (non-neoplastic and neoplastic) 73 (81.11%). Majority of the lesions occurred in males with a male to female ratio

of 2.3:1. Majority of the benign lesions in the present study occurred in the second decade. Majority of the malignant lesions in the present study occurred mainly after the fifth decade. Benign tumors (81.1%) outnumbered malignant lesions (15.5%), with ratio of benign to malignant being 5.2:1. Out of 63 lesions of the nasal cavity in males 49 (77.7%) were benign and 11 (17.46 %) were malignant and 3(4.76%) were inadequate sample. Out of 27 lesions of the nasal cavity in females 24 (88.8%) were benign and 03(11.1 %) were malignant. Among the non-neoplastic lesions most common histological type was polyps about (50 %) in a total of 80 nasal lesions. Likewise among a total of 54 non neoplastic lesions; nasal polyp comprised about 83.33%, while rhinosporidiasis comprised about 3.70 % and rhinoscleroma comprised about 7.40%, tubercular granuloma comprised about 3.70% and allergic fungal sinusitis comprised about 1.85%. Likewise out of 19 neoplastic benign lesions in the nasal cavity 42.10% were papilloma, while capillary hemangioma comprised about 15.78% likewise angiofibromas comprised about 10.52% and other lesions like fibrous dysplasia, osteoma, ameloblastoma and pleomorphic adenoma comprised about 31.57% of the total neoplastic benign lesions. Likewise among of 14 malignant neoplastic nasal lesions, squamous cell carcinoma were found in 42.85% patients, while neuroblastoma comprised about 7.14%, malignant neuro-ectodermal tumors comprised about 14.28% and other lesions like, anaplastic carcinoma, small cell carcinoma and adenoid cystic carcinoma comprised about 35.71% of all the malignant neoplastic lesions in the nasal cavity. Common symptom in both benign and malignant lesions in the present study was nasal obstruction seen in 53.30% patients, while nasal obstruction along with headache was seen in 24.40 % patients, nasal obstruction with headache and epistaxis was seen in 6.6% patients. Nasal obstruction along with headache, cold, cough and running nose was seen in 11.10% patients. Nasal obstruction with the history of pond bathing was seen in 2.2% patients; while the history of proptosis was seen in only (2.2%) patient. 3 biopsies had an inconclusive report due to inadequacy of sample.

Our study reveals that in the early stages of the disease, the signs and symptoms of non-neoplastic and neoplastic lesions are similar leading to a resultant delay of clinical diagnosis.

Correlation of clinical, radiological and pathologic modalities is therefore of utmost important for accurate diagnosis. Thus higher index of the suspicion and thorough histological evaluation of the lesion is perhaps the only hope of diagnosing these tumors in the early stage, which will require a less morbid ablative procedure and will likely result in better survival.

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Ethical approval: Not required

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