

Original article

Clinico-Pathological study of tumours and tumour-like lesions of the nose and paranasal sinuses

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Abstract

Introduction- A sinonasal mass can have various differential diagnosis. It may be inflammatory, neoplastic (benign or malignant), or traumatic in nature. In the present study we examined the clinico-pathological profile of sinonasal masses.

Material & Methods- All tissue processing done on Leica automated tissue processor, and stained with haematoxylin & eosin stain, then slides studied under light microscope.

Observation & Results- Out of 64 cases presenting with sinonasal masses, 33 were males and 31 were females. Out of total 64, 44 were non-neoplastic lesions and 20 constitutes neoplastic, of which 11 were found to be benign and 9 were malignant lesions. Nasal polyp were commonest lesions amongst all tumour-like-lesions & constituted 81.82% cases (36 out of 44). Other tumor like lesions were rhinosporidiosis 9.09% (4 out of 44), rhinoscleromas 4.55% (2 out of 44), dermoid cyst 2.27% (1 out of 44) & cholesterol granuloma 2.27% (1 out of 44). Haemangioma and papilloma were the most common benign neoplasm & constituted 36.36% (4 out of 11 cases). Squamous cell carcinoma was the most common malignant neoplasm & constituted 77.78% (7 out of 9) amongst all malignant neoplasms.

Conclusion- Nasal polyp were commonest lesions amongst all tumour-like-lesions while among malignancies squamous cell carcinoma was found to be most common. Histopathological examination is simple, reliable and cost effective diagnostic tool for the detection of various lesions of nasal cavity, nasopharynx and paranasal sinuses.

Key words- Sinonasal mass, Nasal polyp, Squamous cell carcinoma.

Introduction

The functional unit of nose consists of nasal cavity, nasopharynx and paranasal sinuses.¹ The upper respiratory tract comprises of wide variety of epithelium, glandular, lymphoid and connective tissue elements. Each day it is exposed to thousand liters of air containing hazardous microorganisms, dusts and chemicals. Due to this various tumours and tumor like lesions occur in nose and PNS.

Polypoidal mass in the nose is a very common lesion encountered in clinical practice. It may be due to the most frequently occurring simple nasal polyp or polypoidal lesions due to variety of other pathologic entity ranging from infective granulomatous diseases

to polypoid neoplasms including malignant ones². In nasal masses benign non-neoplastic lesions are equally important as malignant lesions because they mimic neoplastic lesions clinically and morphologically and cause diagnostic difficulty. Hence histopathology is essential for treatment and comment on prognosis of disease.

However, to date an analysis of the sinonasal masses in the rural population of India has been lacking. The present work was undertaken to study the clinicopathological profile of sinonasal masses and to find out incidence of various tumours and tumour-like lesions of nose and PNS in a rural tertiary care hospital.

Material & Methods

The study was carried out at Government Medical College and Hospital Akola in department of pathology during January 2008 to December 2010. All patients diagnosed with sinonasal masses were taken as study subjects. The criteria for selection 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. Biopsy material obtained were preserved in 10% formalin, fixation done in formalin, tissue processing done on Leica automated tissue processor, with the help of Leica RM 2125RT & 2255RM microtomes 5-10 micron thin sections taken and stained with haematoxylin & eosin stain, then slides studied under light microscope.

Observations

Table1 - Sexwise distribution and incidence of nasal masses.

Type of mass	Male	Female	Total
Non-neoplastic	21	23	44
Neoplastic - Benign Malignant	7	4	11
	5	4	9
Total	33	31	64

Table 2 - Histopathological findings of nasal polypoidal masses.

Type of mass	Lesions	No. of Cases	Percentage
Non - neoplastic mass	Nasal polyps	36	56.25%
	Rhinoscleroma	2	3.12%
	Rhinosporidiosis	4	6.25%
	Dermoid cyst.	1	1.56%
	Cholesterol granulomas	1	1.56%
Benign neoplastic mass	Papilloma	4	6.25%
	Haemangioma	4	6.25%
	Angiofibroma	3	4.69%
Malignant neoplastic mass	Squamous cell Ca (SCC)	7	10.95%
	Malignant melanoma	1	1.56%
	Adenoid cystic Ca.	1	1.56%
Total		64	100%

Out of 64 cases, 20 (31.25%) cases were of neoplastic lesions and remaining 44 (68.75%) were of non neoplastic lesions. Out of 20 neoplastic lesions, 11 (55%) were benign and 9 (45%) were malignant lesions. [Table 1]63.64% of benign neoplasms were seen in males and 36.36% in females with male : female ratio 1.75:1. In case of

malignant lesions 55.56% in males and 44.44% in females (M:F ratio 1.25:1). In nonneoplastic lesions 47.72% in males and 52.28% in females (M:F ratio 1:1.10). The overall incidence of male to female cases was nearly equal i.e.1:0.94. [Table 1]

Among all, nasal polyp constitutes maximum i.e. 36 cases, out of which inflammatory

polyps constituted maximum 86.11% (31 cases) and allergic polyp were 13.89% (5 cases). It was observed that haemangioma (36.36%) and papilloma (36.36%) are the commonest benign lesions followed by angiofibroma (27.28%) among all benign lesions. Among malignancy, squamous cell carcinoma constitute maximum ie 77.78% of total lesions (7 out of 9 cases) followed by malignant melanoma and adenoid cystic carcinoma. [Table 2]

Discussion

The most common lesions found in nasal cavity, nasopharynx and paranasal sinuses is nasal polyps. In present study out of 36 cases of nasal polyps 86.11% were of inflammatory polyps and remaining 13.89% cases were of allergic type which is similar to that noted by Dasgupta et al² but allergic polyps constituted about 90% in study by Friedmann & Osborn³ and 66% in Maheshwari et al study.⁴ Nasal polyps resulting from chronic inflammation of the nasal and sinus mucous membranes and are the most common tumours of nasal cavity. The exact pathogenesis is not known, however a strong association with allergy, infection, asthma and aspirin sensitivity has been implicated.^{5,6}

Out of all benign lesions in present study papilloma constitutes 4 cases (36.36%) is in accordance with the study of Chakraborty et al⁷ & study by Swamy N. & Gowda.⁸ Haemangioma constituted 36.36% cases of all benign neoplasm which correlate with the study of Bhople & Rathod⁹ in which incidence was 33.33%. Dasgupta et al² noted 45.7% incidence. Angiofibroma constituted 27.28% cases of all benign neoplasm in present study which correlate with the study of Swamy N. & Gowda where percentage was 26.26% & Dasgupta et al where percentage was 23.2%.

Haemangioma is not regularly seen in nasal cavity, though if it occurs, it is predominantly capillary and is found attached to nasal septum.⁶

Among all malignant lesions squamous cell carcinoma constituted 77.78%, malignant melanomas 11.11% & Adenoid cystic carcinoma 11.11%. The incidence of squamous cell carcinoma in present study is similar to that of Friedmann & Osborn³ and Shah SN et al.¹ Sharma et al¹⁰ found it to be 65.48%, Bhople & Rathod 59.09% and Manjari et al¹¹ 38.06. The incidence of malignant melanoma in present study (11.1%) is quiet higher than that of Manjari et al 4.48% & Friedmann and Osborn 5%. It is comparable with that of Bhople & Rathod 9.09%. The incidence of adenoid cystic carcinoma in present study is comparable with those reported by Manjari et al 12.09% and Bhople & Rathod 13.6%. While Sharma et al reported lowest incidence is 5.3% in their study.

Malignancy of sinonasal tract is rare.¹² The maxillary sinus is the most common site of origin,¹³ while the most common histological origin is squamous cell carcinoma.¹⁴

Histopathological examination is conclusive in diagnosing the polypoidal lesions, describing both etiology and cellular details. It is the only means of determining the nature of disease, i.e. inflammatory or neoplastic. Most of non-neoplastic and benign neoplastic nasal masses require surgical excision, while malignant neoplastic nasal masses required wide surgical excision, radiotherapy or chemotherapy either alone or in combination.⁶

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Conclusions

Following conclusions were drawn from the present study

1. Histopathological examination is simple, reliable and cost effective diagnostic procedure for the detection of various lesions of nasal cavity, nasopharynx and paranasal sinuses.
2. Nasal polyp were commonest lesions amongst all tumour-like-lesions & constituted 81.82% cases. Amongst nasal polyps, inflammatory polyps were the most common lesions (86.11%). Other tumour like lesions were rhinosporidiosis (9.09%), rhinoscleroms (4.55%) dermoid cyst (2.27%) & cholesterol granuloma (2.27%).
3. Haemangioma and papilloma were the most common benign neoplasm & constituted (36.36%) each amongst all benign neoplasms.
4. Squamous cell carcinoma was the most common malignant neoplasm & constituted (77.78%) amongst all malignant neoplasms.

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