# Histo-Pathological Study of Neoplastic Lesions of Nose and Nasopharynx – A Retrospective study

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**Abstract**

**Purpose:** To study the incidence of type of neoplastic lesions of nose and nasopharynx in different age groups and sex in tertiary care hospital, India and to compare the data with other similar studies. **Materials and methods:** Retrospectively, 100 cases were selected from the department of histopathology of tertiary care hospital, India. **Results:** Out of 100 cases, 38 were malignant and 62 were benign. Commonest malignancy found was Squamous cell carcinoma, commonest benign lesion was angiofibroma. Age varies with the range of 11-20years in benign lesions and 51-60 years in malignant lesions. Male's patients were more commonly affected then females. **Conclusion:** Incidence of angiofibroma and squamous cell carcinoma was highest amongst the benign and malignant lesions respectively in present study with male preponderance. Malignant tumors were more common in elderly patients.

**Key words:** Angiofibroma, Inverted Pappiloma, Neoplastic, Nose, Nasopharynx

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## Introduction

The nasal cavity, paranasal sinuses and nasopharynx form a functional unit of nose[1]. Nasal symptoms are one of the commonest reasons for which the patients seek medical advice. As the nose occupies a prominent anatomical position on the face, early diagnosis and treatment of any scarring or ulcerative reason is imperative[2].

Eggoston (1947)[3] said that nose and throat are fertile fields for study of neoplastic

disease[3]. Almost every variety of tumours may at times be encountered in these areas so it is mandatory to know the diagnosis and pathology of tumours in general[3].

Tumours of nose are uncommon. Malignant tumours accounts for 0.2 to 0.8% of all human malignancy and only 3% of all malignant tumours of upper aerodigestive tract[4].

Scanlon et al (1958)[5] described the consequence. "Always a challenging problem, both from diagnostic and therapeutic standpoint, malignant lesions of nasopharynx are perhaps the most commonly misdiagnosed, most poorly understood, most pessimistically regarded of all tumours of the upper part of respiratory tract" the statement is still true[5].

The fine needle aspiration and cytological studies are not usually performed in this area. So histopathology remains main diagnostic approach for the tumours of nose. In present study, an attempt is made to find out incidence and various morphological variants of tumours of nose and compare the same with findings of various authors[6].

**Objectives**

- To study the incidence rate of neoplastic lesions of nose and nasopharynx at our institute.
- To study the demographic detail wise incidence of different benign and malignant tumors of nose and nasopharynx.
- To compare the results of this study with other same kind of study results

**Material and methods:**

The present study consists of 100 cases and has been carried out at Histopathology Department tertiary care hospital, India during period of 2011 to 2013.

The clinical details were obtained from original case record like Age and gender of patient, symptoms and other investigation.

The gross examination of each available specimen includes its size, shape, weight, consistency and appearance of cut surface, specially, in regard to the presence of haemorrhage, necrosis and cystic spaces etc. All the specimens were preserved in 10% formalin for fixation.

In histopathological study, numbers of section were taken from different sites according to size of specimen, while in case of small biopsy specimen it was whole given.

Then these representative sections were subjected for processing in automatic tissue processor. After processing, the section were embedded in paraffin, cut

with microtome at approximately 5 thicknesses and stained with H and E.

The staining procedure includes:

- Staining – slides immersed in haematoxylin for 2 minutes, then exposed to running to water for washing.
- Differentiated with acid alcohol.
- Development of pink colour blueing.
- Counterstain with 1% aqueous eosin for 2 minutes and wash.
- Clean and dry the slides and mounting the section with help of DPX and coverslip.
- Before staining paraffin was removed by keeping section in an oven (56oC) for 30 minutes and then dipping them in xylene. Then they are kept in descending grade of alcohol for 1-2 minutes and washed with tap water. Stained by Haematoxylin and Eosin method as described above.
- Special staining procedure like (PAS) periodic acid Schiff, Reticulin were done as and when required.

**Results**

Majority of Neoplastic lesions of nose occur in 2nd decade (34%) of age followed by fifth decade (19%).Most of the benign tumour of nose occurs in 2nd decade (50%) of age. In Malignant tumours, most of the cases occur in 5th and 6th decade of life [Table-1]. In our study it is evident that benign lesions comprising 62% and malignant lesions comprising 38%. Out of all cases males were affected 72% and females were affected 28% of cases [Table-2]. So, ratio of M : F approximately 7:3%, among male patients benign lesions were seen 47% and malignant lesions seen 25%., among female patients benign lesions were 15% and malignant lesions were 13% of cases[Table-2].

**Table 1:** Age wise distribution of Neoplastic Lesions

| Age range (in years) | Benign lesions (%) | Malignant lesions (%) | Total (%) (n=100) |
|---|---|---|---|
| 0-10 | 2(3.22) | 00 | 2(2) |
| 11-20 | 31(50) | 3(7.89) | 34(34) |
| 21-30 | 6(9.67) | 2(5.26) | 8(8) |
| 31-40 | 7(11.29) | 7(18.42) | 14(14) |
| 41-50 | 10(16.12) | 9(23.68) | 19(19) |
| 51-60 | 5(8.06) | 11(28.94) | 16(16) |
| 61-70 | 1(1.61) | 2(5.26) | 3(3) |
| 71-80 | 00 | 3(7.89) | 3(3) |
| 81-90 | 00 | 1(2.63) | 1(1) |

**Table-2:** Gender Wise Distribution of Benign and Malignant Lesions of Nose and Nasopharynx

| Nature Of Neoplasm | Male | Female | Total Cases |
|---|---|---|---|
| Benign | 47 | 15 | 62 |
| Malignant | 25 | 13 | 38 |
| Total Cases | 72 | 28 | 100 |

## Discussion

In our study total 100 cases are studied by which is compared with studies of other authors. In Michael's study[7] out of 46 cases 80% cases were males, 20% cases were female, male to female ratio was about 4:1 while in present study males are 9 (75%) and females of 3 (25%) so, results are comparable.

**Table – 3:** Comparison of Malignancy associated with Inverted Papilloma Cases with other Study

| Authors Name | Total Indoor patient (IP) Case | Associated Malignant | Percentage (%) |
|---|---|---|---|
| Michael Benninges[7] | 46 | 12 | 26 |
| Vincent Hyams[8] | 149 | 19 | 13 |
| Donald Vrabee[9] | 24 | 3 | 12.5 |
| Percent Study | 12 | 3 | 25% |

Above table-3 shows that Vincent' study[8], incident of inverted papilloma associated malignancy is 13% and in Donald's study[9] it was 12.5% while in present study, incidence is 25% which is comparable with above study. Michal have also studied the incidence of inverted papilloma with malignancy and his study shows 26%. Comparison b/w Michael's study[7] and present study show that Michael's study[7], majority of inverted papilloma cases occurs b/w the age group of 50-70 yrs. Constituting 50% (17 cases out of 34 cases) In present study out of 12 cases, 9 cases falling in group of 50-70 yrs.While out of 34 cases in Michael's study[7] only (9 cases) presented before the age 40 yrs. Constituting 26%.In present study only 30 cases occurred before age of 40 yrs. Constituting 25%. So, the results of the present study is comparable with the Michael's study7.Out of total 12 cases of IP.SCC studied by Michael's one case occurred during 40-50 yrs. Constituting

8.33% of total cases, while in present study there was 2 cases IP-SSC presented b/w 40-50 yrs[Table-4].

**Table -4:** Comparison of Age wise distribution of Inverted Papilloma and inverted Papilloma Associated SCC with study of Michael S. Benninger[7]

| Age Groups (years) | Inverted Pappiloma | Inverted Pappiloma | IP-SCC | IP-SCC |
|---|---|---|---|---|
| Age Range | Michael's Study | Present Study | Michael's Study | Present Study |
| <20 | 01 | 00 | 00 | 00 |
| 20-29 | 01 | 00 | 00 | 00 |
| 30-39 | 07 | 03 | 01 | 00 |
| 40-49 | 04 | 03 | 01 | **02** |
| 50-59 | 08 | 05 | 03 | 00 |
| 60-69 | 09 | 01 | 03 | **01** |
| 70-79 | 04 | 00 | 04 | 00 |
| Total | 34 | 12 | 12 | **(03)** |

Fu & Perzin[10] studied 8% cases of benign non epithelial vascular lesion of Nose, in which 38 cases were Hemangioma and 38 cases were of angiofibroma. So in their study, it is evident that Angiofibroma and Hemangioma occurs with equal frequency, while in present study there were 10 cases of Hemangioma and 33 cases of angiofibroma [Table-5].

**Table – 5:** Comparison of Incidence of Benign Non-Epithelial Vascular Tumour with study of Fu-Ys and Perzin K.H.[10]

| Vascular Lesion | No. of Cases | |
|---|---|---|
| | Fu Ys And Perzin K.H[10] | Present Study |
| Hemangioma | 38 | 10 |
| Benign Hemangioendothelioma | 3 | 0 |
| Angiomatosis | 1 | 0 |
| Glomus Tumor | 1 | 0 |
| Angiofibroma | 38 | 33 |
| Total | 21 | 43 |

In comparative study it is evident that majority of carcinoma occurring in nose are of squamous cell carcinoma. Out of 47 cases studied by Osborn's[11] cases were of squamous cell carcinoma consisting about 74% while in present study, out of total 25 cases there were 22 cases of squamous cell carcinoma consisting of 88% cases which is very well comparable to the study of

Osborn. In Osborn's study[11] there were 6 adenocarcinoma while in present study there is 1 case of TCC and 2 cases of adenocarcinoma.

**Conclusion:**The present study of 100 cases neoplastic lesions of nose and nasopharynx. The benign lesions comprises of 62% and malignant lesions comprises of 38% making approximate ratio 2:1.This study shows majority of benign lesions occurs in 11-20 years of age.In present study male to female ratio for all neoplastic lesions of nose and nasopharynx is approximately 7:3 and for benign lesions of nose and nasopharynx is approximately 3:1, and for malignant lesions of nose and nasopharynx is approximately 2:1.This study shows angiofibroma is the commonest benign tumor followed by inverted papilloma.This study shows squamous cell carcinoma is commonest malignant tumor followed by undifferentiated carcinoma.

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