

## Nasopharyngeal Carcinoma: An 8 Years Retrospective Study

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**Objective:** To study the epidemiological and clinico-pathological aspects of nasopharyngeal carcinoma.

**Setting:** Department of Ear, Nose and Throat (ENT), King Fahd Hospital of the University (KFHU), Al-Khobar, Saudi Arabia.

**Design:** Retrospective study of medical records of nasopharyngeal cancer patients seen at KFHU from 1986 to 1994.

**Subject & Methods:** Forty nine patients of nasopharyngeal carcinoma were admitted in KFHU. Thirty six patients whose charts were found to be complete in all aspects, were included in the study. Their personal and clinical data including presenting features, diagnosis and management were studied and analyzed.

**Results:** Patients age ranged from 20-70 years with a mean of 45 years. Male to female sex ratio was 4:1, average duration of disease was 7.5 months, majority presented early (Stage I & II) and non-keratinising histological picture was more common. Main presenting features were hearing loss, nasal or postnasal mass, cervical lymphnode enlargement, middle ear effusion and nasal bleeding.

**Conclusion:** This study indicates clearly that early detection of NPC is possible and that we are dealing mainly with non keratinizing type I and II cancer. All three factors affect prognosis and survival positively.

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Nasopharyngeal carcinoma (NPC) is relatively rare among the white Americans and Europeans, but very common in Southern China. Moderately high incidence occurs in Malaysia, Indonesia, Thailand and Vietnam. The disease seems to be increasing in Sudan, North Africa and Far Eastern Countries<sup>1,2</sup>.

Among the inhabitants of Arabian Peninsula, NPC is not a common malignancy. In Saudi Arabia, it ranks 4th among males and 8th among females. It constitutes 30% of patients with Head and Neck Cancer and 3.6% of the total cancer population. It usually presents late in life with a very poor 5-year survival rate<sup>3-5</sup>. Etiology of NPC is unknown. Apart from confirmed viral involvement (EBV), other genetic, environmental and nutritional factors are claimed to contribute strongly to its pathogenesis<sup>7,8</sup>. The treatment of choice is radiation therapy (RT) with chemotherapy. Surgery is very rarely used.

The retrospective study aims at determining epidemiological and clinico-pathological aspects of nasopharyngeal carcinoma cases admitted to KFHU over a period of 8 years (1986-1994).

### METHODS

Medical records (MR) of all patients with nasopharyngeal carcinoma (NPC) treated and followed up in ENT department at KFHU over an 8 year study period of 1986-1994, were reviewed. Personal data such as age, sex, region and nationality and clinical data including duration of disease, presenting features, investigations, diagnosis, treatment and follow up was compiled and analysed.

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### RESULTS

Medical records showed that a total of forty nine patients with nasopharyngeal cancer were admitted to the ENT ward between 1986-1994. Charts of ten patients were inactive, and three contained inaccurate diagnosis. Thus leaving only 36 records for detailed analysis. Patients were referred to us either from neighbouring hospitals often with established diagnosis, slides and reports, or through our Emergency Room and Primary Health Care Clinic for diagnosis, treatment and follow up. Some patients were referred back from cancer centres in Riyadh for follow up or terminal care. There were 29 males and 7 females, a ratio of 4:1. Their ages ranged from 20-70 years with a mean of 45 years (Fig 1).

Table 1. Classification of patients by nationality and region (N=36)

Saudi		Other nationalities	
Hofuf	6	Philippines	6
Hafar Al-Batin	4	Egypt	2
Qassim	4	Yemen	2
Gizan	3	India	2
Khobar	2	Lebanon	1
Dammam	2	Sudan	1
		Somalia	1
Total No	21		15

There were 21 Saudi and 15 non-Saudi patients. Their nationality and place of origin are shown in Table 1. The duration of the disease ranged between 1-24 months with a mean of 7.5 months. Their main complaints are presented in Table 2.



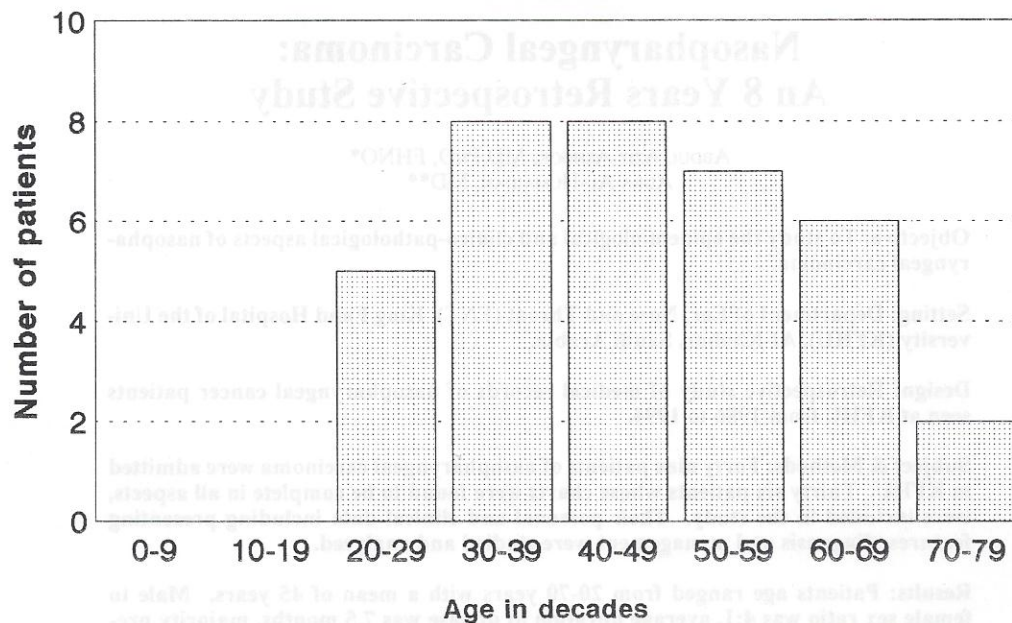


Figure 1. Age distribution of patients with nasopharyngeal carcinoma (N=36)

It is dominated by hearing loss, nasal obstruction and nasal bleeding. Clinical findings included mass in the post nasal space (PNS), enlarged cervical lymphnodes either unilateral or bilateral, middle ear effusion, conductive hearing loss and nasal bleeding (Table 3). Plain X-ray, tomogram, CT scans, MRI, angiography and examination of PNS under general anaesthesia with biopsy were utilised to establish diagnosis, classification and staging of the tumours. Histopathological classification according to WHO criteria, was dominated by squamous cell carcinoma, mostly of the non-keratinizing and less keratinizing types.

Table 2. Complaints of the patients

Complaint	No
Hearing loss	15
Nasal obstruction	14
Nasal bleed	13
Dysphagia	10

Staging of the tumours according to TNM system (AJCC) is shown in Table 4. Twenty (55.5%) patients were in stage I and the remaining were either in stage II, III or IV.

Table 3. Major clinical findings

Clinical findings	No
Enlarged cervical LN	23
Mass in PNS	25
MEE	18
Conductive hearing loss	11
Nasal bleeding	7

For Saudis and eligible non-Saudis, treatment was accomplished in Riyadh Cancer Centres. Non-eligible non-Saudis after confirmed diagnosis preferred to go home for treatment since it is convenient and cheaper. Classical treatment was radiation therapy

in combination with chemotherapy. Debulking surgery or chemotherapy alone was used only as palliative measures for recurrence or terminal cases.

Table 4. Tumour staging according to the AJCC system

	NO	N1	N2	N3	N4	MO	M1
T <sub>1</sub>	8	5	3	3	1	0	0
T <sub>2</sub>	1	2	2	0	0	0	0
T <sub>3</sub>	3	2	2	0	0	0	2
T <sub>4</sub>	0	2	2				

## DISCUSSION

Despite the small number of patients, this study shows interesting findings. The 4:1 male preponderance was confirmed previously in local and international studies<sup>2,4,7</sup>. The age distribution of our patients was uniform with no significant age preference as suggested by previous studies<sup>3,7</sup>. However, 60% of our patients were 50 years old or less, and a small group, (18%) were below 30 years (Fig.1). This finding rejects the assumption that nasopharyngeal carcinoma is a disease of old age and states clearly that it is a middle and young age disease and has been corroborated by studies from Jordan, Nigeria and China<sup>9-11</sup>. Over 40% of our patients were non-Saudi nationals, topped by Egyptian, Indian and Filipinos. The highest prevalence was among the Filipinos although they are the third ranking community among the three, a fact which reflects the high incidence of NPC in Far Eastern countries<sup>1,2</sup>. Relocation of the Saudi patients to their region of origin does not show any regional preference<sup>2,7</sup>.

Main symptoms were so characteristic that it should be possible, to incorporate them in health education and screening programmes<sup>1,12</sup>. The interval between appearance of symptoms and the patients seeing a physician was surprisingly short. This may explain detection of the disease in early stages among our patients<sup>13</sup>. 55% were found to be in stage I, 14% in stage II and only 31% in advanced stages III and IV. These findings are strongly in contradistinction to findings in the literature where majority (60-70%) of nasopharyngeal carcinoma present at late



stages of III and IV<sup>1,2,4,7,11,12</sup>. This may be because of our small patient sample or due to awareness of patients as a result of health education programmes and prompt availability of health service in the Eastern Province. This favourable outcome can further be improved upon through intensive health education programmes, proper and regular screening programmes and investment in up to date facilities (CT, MRI, Endoscopy, IgAA/cA) specially in endemic areas. Shortening the interval between appearance of symptoms and seeing the physician and between diagnosis and initiation of therapy in well established regional cancer centres can further improve the outcome<sup>4,4,13-17</sup>.

Most of our cancers are type I and III carcinoma according to WHO histopathological classification of nasopharyngeal carcinoma<sup>1,2,18</sup>. High percentage of these are non keratinizing squamous cell carcinomas. This could be explained by the fact that most of our patients are young, and keratinization usually increases with age<sup>2</sup>. All eligible patients received chemotherapy and radiation therapy in Riyadh Cancer Centres, a new comprehensive treatment modality to improve outcome<sup>1,2,6,7</sup>. Unfortunately, we cannot comment on follow up results since all our patients, including the non-eligible ones have been treated outside our hospital and only very few came back for follow up. This problem will continue to exist, until National Cancer Registry and regional Cancer Centre with optimum facilities are established in Eastern Province of Saudi Arabia<sup>2,4,5,7</sup>.

## CONCLUSION

**Nasopharyngeal carcinoma is a male predominant condition affecting middle age Saudi as well as expatriate patients. Filipinos were the major group among expatriates. Stage I and II cancer with low keratinization are seen more frequently. Early detection is possible and prognosis can be improved upon by increasing awareness, establishing national cancer registry and treatment centres.**

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