

Nasopharyngeal Carcinoma: A Delay in Diagnosis

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Summary

One hundred consecutive newly diagnosed patients with nasopharyngeal carcinoma (NPC) since January 1994 were the subjects for studying various factors that contribute to the delay in the confirmation of the diagnosis. Seventy-nine of them were males and the peak age of incidence was the fifth decade. Ninety two percent were Chinese, 7% Malay and 1% Indian. Seventy six percent were agriculture workers or labourers with 66% having either no formal education (16%) or only primary level education (50%). In 50% of patients neck swelling was the first presenting symptom, 26% had nasal symptoms, 12% ear symptoms and 11% has symptoms due to intracranial extension of tumour. As many as 80% were at UICC Stage IV at the time of diagnosis.

While the median delay, on the part of patients, in consulting a doctor was 2.5 days, the median delay on the part of the doctors to confirm the diagnosis of NPC was 127 days, the delays was particularly worse when the patients presented with ear symptoms (266 days) followed by those with neck swelling (94 days). For those patients who were required to undergo more than one nasopharyngoscopy and biopsy the median doctor's delay was 144 days.

Since 82% of patient's had first consulted general practitioners, it is suggested that their level of awareness with regards to the diagnosis of NPC be significantly raised so that the delay on their part be greatly minimized.

Key Words: Nasopharyngeal carcinoma, Diagnosis

Introduction

Nasopharyngeal Carcinoma (NPC) ranks fourth among the most common cancers in Malaysia. It most commonly affects the ethnic Chinese in or originating from southern provinces of China, where the incidence¹ is as high as 30 per 100, 000 per year. Natives (Malays, Kadazans, Ibans and Bidayus) in Malaysia and those in other Southern Asian countries as well as Maghrebians, Arabs and Greenland Eskimos have an intermediate risk, while for the rest of the population in the world the incidence of NPC is as low as 1 per 100, 000 per year. In Peninsular Malaysia it was noted² that the Chinese

males, in the fifth decades of life, were at the highest risk (40.1 per 100, 000 per year). With almost 90% of population at either high or intermediate risk of developing NPC, it is a major health problem in Malaysia.

While the problem of establishing the diagnosis of NPC has been resolved³, and there has been remarkable improvement in the survival of NPC patients at early stages⁴ (UICC⁵ Stages I & II), it is unfortunate that almost 80% of our patients are diagnosed at advanced stage⁶ (UICC Stages IV).

The present study was undertaken to investigate into the factors responsible for the delay in establishing the diagnosis of NPC.

Materials and Methods

One hundred consecutive newly diagnosed and histologically confirmed NPC patients seen at the University Hospital Kuala Lumpur from January 1994 onwards were the subjects for study. All the patients were interviewed by one of the authors. A properly designed pre-set questionnaire-form was filled up with relevant data obtained from the patients and their case folders.

The questions were designed to obtain information concerning the patient's general characteristics (age, sex, race, education, occupation, personal habits), his state of awareness about NPC, first symptom noted by the patient and its duration, the primary and subsequent doctors visited, difficulties encountered before confirming the diagnosis and date of final diagnosis.

Data thus obtained were stored in a file under a programme "spread sheet" in Excel 7.0 of Windows 95, and analysed with a view:

1. to ascertain whether there was delay on the part of patient (Patient's delay). This was noted as the time interval between the start of first symptom as observed by the patient and the date of first visit to a doctor.
2. to ascertain whether there was delay on the part of the doctor (Doctor's delay). This was taken as the time interval between date of first visit to a doctor and the date of confirmation of diagnosis.
3. to study the factors which could have caused the patient's and/or doctor's delay, with special reference to patient's general characteristics as mentioned above, type of doctor first consulted and the kind of difficulties encountered by the doctor in confirming the diagnosis.

The median was used to denote the time interval for both patient's delay and doctor's delay. Median was chosen because the range of value was wide and the distribution was skewed to the left.

Results

I. General characteristics:

a. Age and Sex (Table I)

Largest number of patient (37) belonged to the age group 40-49. The overall median age of the patients was 49. There were 76 males and 24 females giving a male to female ratio of 3:1.

b. Ethnic and dialect distribution (Table II)

Ninety two percent were Chinese, with 37 (40.2%) belong to the Cantonese dialect group (dialect of the patient's father was taken as patient's dialect even though mother spoke different dialect). Twenty Four (26.1%) of them were Hokkien and 24 (26.1%) Hakka. There were 7 Malay and 1 Indian patient in this group.

Table I
Distribution of 100 NPC Patients
According to Age and Gender

Age Group Years	Female N (%)	Male N (%)	Total N (%)
20 - 29	1 (4.2)	3 (3.9)	4 (4)
30 - 39	6 (25.0)	17 (22.4)	23 (23)
40 - 49	8 (33.3)	29 (38.2)	37 (37)
50 - 59	4 (16.7)	21 (27.6)	25 (25)
60 - 69	5 (20.8)	4 (5.3)	9 (9)
70 - 79	0 (0.0)	2 (2.6)	2 (2)
Total	24 (24.0)	76 (76)	100 (100)
Median of age	49	46	49

N is the number of patients

Table II
Distribution of 92 Chinese NPC Patients
According to Dialect

Dialect	N	%
Cantonese	37	(40.2)
Hokkien	24	(26.1)
Hakka	24	(26.1)
Teochew	4	(4.3)
Hainanese	3	(3.3)
Total	92	100

Table III
Distribution of 100 NPC Patients
According to Occupation

Occupation	N	%
Professional	2	2
Administrative	2	2
Clerical	5	5
Sales	11	11
Service	4	4
Agriculture	3	3
Labourer	73	73
Total	100	100

c. Distribution according to occupation (Table III) and education

i) For distribution according to occupation "Dictionary of occupational classification, Malaysia, Dewan Bahasa dan Pustaka, 1969", was used, based on which occupation of married housewives have been classified under their husband's occupational class. The data from the present study revealed that as many as 73 (73%) belonged to labourer's class.

ii) As for education the distribution was made according to the level of education attained (Primary, Secondary or Tertiary) or no formal education. It was noted that majority (66%) of them had either just primary education (50%) or no formal education (16%) at all. Thirty one (31%) had studied up to secondary level and 3 (3%) had received tertiary education.

d. Awareness of NPC before diagnosis

Thirty four (34%) patients had come to know about NPC before he/she was inflicted with this disease. Most of them (30 or 88.2%) got information through either friends and relatives (16 or 47%) or through newspapers (14 or 41.2%). Thirteen of them had positive family history of NPC. Four obtained information from medical staff known to them.

e. First symptom

Presence of swelling in the neck (neck mass) was noted as the first symptom by 50 (50%) patients whereas there were 26 (26%) patients for whom the first symptom was nasal (in the form of blood stained nasal or postnasal discharge). There were 12 (12%) patients whose first

symptom was aural, which included impairment of hearing with or without tinnitus in one ear. Eleven (11%) had intracranial symptom; either headache (6%) or cranial nerve palsy (5%). There was one patient whose first complaint was generalised body ache.

f. Stage of NPC at diagnosis

All the patients were staged according to UICC staging classification³, after CT Scan of the nasopharynx, skull base and cervical region, and complete metastatic work up (Bone Scan, Liver ultrasound and Chest X-Ray) to exclude distant metastasis to bone, liver or lung. As many as 80 (80%) belonged to Stage IV with 14 (14%) in Stage III and 3 each in Stages II and I.

II. Patient's Delay

This study showed that 73 (73%) patients had consulted a doctor within 2 months of presence of the first symptom with 47 (47%) visiting a doctor's clinic on the very first day they noticed a symptom. There were 14 (14%) patients who took between 2 to 6 months and 13 (13%), more than 6 months to see a doctor. The overall median time to see a doctor (Patient's delay) was only 2.5 days.

a. In relation to age (Table IV), sex (Table V) and awareness about NPC (Table VI)

No significant difference could be allocated between various subgroups in so far as the delay on the part of the patient was concerned in seeing a doctor.

b. In relation to occupation and educational level

It was quite obvious that the labourer group (76) took longer time (median delay 12 days) to see a doctor, while those with no formal education (16) taking yet longer time (median delay 30 days) to do so.

c. In relationship to symptoms

It was interesting to note that for those patients with nasal symptoms (26 patients) the median delay was 21 days, while for those with intracranial symptom (11) it was 14 days. However for those with neck swelling (50) the median delay was only 3 days and for those with ear symptom (12) there was no delay at all.

III. Doctor's Delay

It should be noted that the median delay on the part of the doctors was as long as 127 day or more than 4

Table IV
Patient's Delay According to Age Group

Delay (days)	Age Groups (Years)					
	20 - 29	30 - 39	40 - 49	50 - 59	60 - 69	70 - 79
1 to 14	2 (5.0)	12 (52.3)	21 (56.8)	12 (48.0)	5 (55.6)	1 (5.0)
15 to 60	1 (2.5)	4 (17.4)	6 (16.2)	4 (16.0)	3 (33.3)	1 (5.0)
61 to 180	1 (2.5)	5 (21.7)	4 (10.8)	5 (20.0)	0 (0.0)	0 (0.0)
181 to 365	0 (0.0)	1 (4.3)	2 (5.4)	2 (8.0)	0 (0.0)	0 (0.0)
> 365	0 (0.0)	1 (4.3)	4 (10.8)	2 (8.0)	1 (1.1)	0 (0.0)
Total	4 (10.0)	23 (100)	37 (100)	25 (100)	9 (100)	2 (100)

Table V
Patient's Delay According to Gender

Delay (days)	Male N (%)	Female N (%)	Total N (%)
1 to 14	40 (52.6)	14 (58.3)	54 (54)
15 to 60	15 (19.7)	4 (16.7)	19 (19)
61 to 180	13 (17.1)	1 (4.2)	14 (14)
181 to 365	4 (5.3)	1 (4.2)	5 (5)
> 365	4 (5.3)	4 (16.7)	8 (8)
Total	76 (100)	24 (100)	100 (100)

Table VI
Patient's Delay According to Awareness of NPC

Delay (days)	Awareness of NPC	
	YES N (%)	NO N (%)
1 to 14	18 (52.9)	36 (54.6)
15 to 60	6 (17.6)	13 (19.7)
61 to 180	7 (20.7)	7 (10.6)
181 to 365	1 (2.9)	4 (6.1)
> 365	2 (5.9)	6 (9.0)
Total	34 (100)	66 (100)

months. There were only 9 patients for whom the diagnosis of NPC was confirmed within 2 weeks of seeing a doctor. In 19 cases it took up to 2 months, in 37 between 2 to 6 months and in 35 (35%) i.e. more than one-third, it took more than 6 months.

a. In relation to first symptom

For those with nasal symptom (26 patients) the median doctor's delay was minimum (26 days), followed by those with intracranial symptoms (11) for whom it was 51 days. It was unbelievable to find that the median doctor's delay was more than 3 months (94 days) for those with neck swelling (50 patients) and for those with ear symptom (12) it was close to 9 months (266 days).

b. Doctor's delay in relation to type of doctor

Types of doctors consulted by the patients were categorised as general practitioner, general surgeon, general physician, neurologist/neurosurgeon, maxillo facial/dental surgeon, and Chinese Traditional doctor.

While none among this group of 100 patients consulted an ear, nose and throat surgeon to start with, there were 82 who attended the clinics of general practitioners (inclusive of 20 who first visited a Chinese traditional doctor). Eighteen went to see either the general surgeons (8), general physician (7), dental or maxillo facial surgeon (2) or a neurosurgeon (1).

Although it was interesting to note that median number of doctors consulted by these patients was 3.5, it had no obvious relationship to the first symptom or the doctor's delay.

Among the doctors consulted were those who had graduated from United Kingdom, India, Australia, Bangladesh, however further details were not extracted.

c. In relation to difficult diagnosis

Difficulty in diagnosis was encountered in patients where the primary tumour in the nasopharynx was not quite obvious and the biopsy obtained did not show evidence of malignancy. For them rebiopsy was required to be done. Eighteen patients were subjected to nasopharyngoscopy and biopsy more than once. Fourteen of them had biopsy taken twice and in 2 patients each it was done three times and four times respectively. The median doctor's delay was 144 days for those patients (14) who were biopsied twice and it was 576 days for those with 3 or more biopsies (4 patients).

Nonetheless, it was surprising to find that even for those whose diagnosis was confirmed on first biopsy (82 patients) the median doctor's delay was as long as 92 days.

Discussion

Needless to say, early diagnosis is the key to effective control of cancer in general. For NPC, which is both radiosensitive as well as chemo-responsive, there is possibility of not only lasting remission but "cure", particularly for those at early stages (UICC stages I & II). In fact, according to NPC data-bank at the department of Otorhinolaryngology, faculty of Medicine, University of Malaya, Kuala Lumpur, since last 10 years not a single case of histologically confirmed NPC, staged at UICC I & II and treated with radiotherapy (RT) alone, has died. Unfortunately there were only 34 such cases out of a total of 380 newly diagnosed NPC during that period. Even for those at UICC stage IV (non-metastatic), who received a combination of RT followed by chemotherapy, there has been considerable improvement in overall survival⁸ (80% 3-year survival), yet there is room for further improvement. The fact remains that the chance of attaining effective control is best if NPC is diagnosed early, which has been the problem in the past⁹ and remains so at present.

It has been generally believed by oncologists in the developing world that cancer patients themselves visit the doctors at late stage due to ignorance, lack of awareness, non-availability of medical services close by, financial difficulties and others. The results of the present study has shown that in Malaysia so far as NPC patients are concerned, they did present themselves to their

doctors within a very reasonable time (median delay only 2.5 days). The delay was longest (30 days) for those (16 patients) who had no formal education. This was not too unexpected. Nonetheless, it was good to note that as many as 47 (47%) of them, including those 12 patients, who had ear symptoms (hearing impairment with or without tinnitus) to start with, consulted doctor on the very day they became aware of their symptom. For those with neck swelling the median delay was also very little (only 3 days). The only other important and relevant early symptom for which 26 patients in this study did not go to see a doctor soon enough (the median delay of 21 days) was the nasal ones (blood stained nasal or post-nasal discharge). Even for those with intracranial symptoms (11 patients) which are features of advanced NPC, the median delay was 14 days.

As for delay on the part of doctors, in arriving at a definitive diagnosis of NPC, the median delay was worst (266 days) for those (12 patients) with ear symptom. For those (50 patients) with neck swelling the delay was more than 3 months (94 days). Even for those with nasal symptoms (26 patients) the median delay on the part of the doctors was close to one month (26 days). Unfortunately, for patients with these very relevant symptoms, which are clearly suggestive of NPC^{10,11} the late diagnosis was due to doctor's delay.

If only the attending doctors had realized that unilateral conductive hearing loss is one of the features of NPC, which often comes on at its early stage, diagnosis for those 12 patients would not have been delayed to that extent. Besides, it should be considered rather mandatory to exclude NPC in all patients above 30 years of age, particularly if they are ethnic Chinese, who complain of persistent post-nasal or nasal blood-stained discharge or a painless progressive swelling in the neck. It was difficult to ascertain as to why the median doctor's delay was to the extent of 3 months for those patients with neck nodes, which must be taken as secondary to NPC, particularly, if the patient is a Chinese, and in this series 92% of the patients were Chinese.

Although we did not go in depth investigating about the doctors (82% were general practitioners) who were responsible for the delay, it was felt that lack of awareness about NPC in some of them could have been due to inadequate teaching or training on this subject

during their undergraduate education. This is more likely if they have graduated from countries like U.K, India, Pakistan, Bangladesh, Egypt or Australia, where NPC is rare.

In Malaysia, where NPC is one of the common cancers, there is need for the first-line doctors to be more aware of the presenting symptoms^{10,11} and to take suitable steps towards establishing the diagnosis as early as possible.

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