Socio Demographic Predictors in Delayed Presentation of Head and Neck Cancer

Pokharel M, Shrestha I, Dhakal A, Amatya RCM

Department of Otorhinolaryngology and Head and Neck Surgery,

Kathmandu University School of Medical Sciences,

Dhulikhel Hospital, Kathmandu University Hospital,

Kavre, Nepal.

Corresponding Author

Monika Pokharel

Department of Otorhinolaryngology and Head and Neck Surgery,

Kathmandu University School of Medical Sciences,

Dhulikhel Hospital, Kathmandu University Hospital,

Kavre, Nepal.

E-mail: monikapokharel@hotmail.com

ABSTRACT

Background

Head and neck cancer is a major public health problem worldwide. In spite of the increase in incidence, there has been paucity of research on socio demographic factors influencing head and neck cancer.

Objective

To study the influence of various socio demographic factors on late presentation of head and neck cancer.

Method

Prospective, analytical study conducted in 69 patients with Head and neck malignancies in Department of Otorhinolaryngology and Head and Neck surgery, Kathmandu University School of Medical sciences between January 2015 to January 2016. Collected data were entered and analyzed using IBM SPSS statistical software 21.0. All the socio demographic variables were compared between the early and late presentation groups of patient using Chi-square test. A 'p' value of < 0.05 was considered statistically significant.

Result

Forty eight were male and 21 were female. The age of patients ranged from 34 to 70 years (mean age 52.03). Twenty patients were diagnosed in stage I, 13 in stage II, 20 in stage III and 16 in stage IV. Significant association was seen between stage of head and neck cancer and duration of illness (p=0.007), educational status of patient (p=0.003) and educational status of patient's care taker (p=0.005). However, no statistical association was seen between stage at diagnosis of head and neck cancer and gender, type of family, previous consultation, systems of alternative medicine adopted before diagnosis, smoking habit, alcohol intake, tobacco chewing habit and occupation.

Conclusion

The results of this study suggest that educational status may influence the presentation of head and neck cancer.

KEY WORDS

Head and neck cancer, stage at diagnosis

INTRODUCTION

Cancer, one of the most dreaded non-communicable diseases has become an important contributor to the global burden of diseases. It is one of the leading causes of death worldwide.[1] Cancer brings tremendous social distress, physical and psychological suffering, hardship to patients and their families. All over the world efforts are on to prevent and control this disease.[2]

The term Head and neck cancer embraces all malignancies that arise in the head or neck region (in the skin, nasal cavity, sinuses, lip, mouth, salivary glands, throat, larynx, lymph nodes, or thyroid gland). Head and neck squamous cell carcinoma (HNSCC) accounts for more than 500,000 new cases projected annually worldwide, representing the sixth most common cancer in the developed world.[3]

Our hospital is a referral center situated in the heart of Kavre district. Though we have a high number of head and neck cancer referrals we are dismayed by the large proportion of late presentation in this group. Many socio demographic factors like gender, level of education, marital status, occupation, type of family, systems of alternative and complementary medicine being used by the patient may influence the presentation of head and neck cancers. In the present study, we attempt to study the influence of these factors on late presentation of head and neck cancer.

METHODS

This was a prospective, longitudinal, analytical study conducted in Department of Otorhinolaryngology and Head and Neck surgery, Kathmandu University School of Medical sciences between January 2015 to January 2016. Sixty nine patients suffering from Head and neck malignancies were enrolled in our study. Patients with Lymphoma and patients with recurrence of head and neck malignancy were excluded from our study.

Verbal informed consent was obtained from each respondent and proforma was filled up. Approval was obtained from Kathmandu University School of Medical Sciences Institutional Review Committee. A detail history and clinical examination was performed. Clinical examination of the patients included complete head and neck examination, fibreoptic nasopharyngolaryngoscopy, fine needle aspiration cytology, ultrasonography and in some cases Computerized tomography scan. Presenting complaints and its duration, stage of malignancy, site of malignancy, socio demographic and health behavior related information were recorded. Staging of the head and neck cancer was done according to AJCC (American Joint Committee on Cancer) classification. The information was collected by using a structured interview with the patients. The questionnaire consisted of two parts. The first part of questionnaire was concerned with socio demographic characteristics of patient including age, sex, marital status,

occupation, educational status of patients and their care taker, type of family, duration of illness, number of previous medical consultations that patient had before presenting to the hospital and systems of alternate medicine used .The second part gathered information about the health related behavior including cigarette smoking, alcohol consumption, betel nut chewing or tobacco chewing. Patients were divided into two groups. The first group comprised of head and neck cancer patients presenting at stage I and II (early stage), whereas patients presenting with III and IV stage (late stage) comprised of the second group. Collected data were entered and analyzed using IBM SPSS statistical software 21.0. Both descriptive and inferential statistics were measured. All the above mentioned variables were compared between the early and late presentation groups of patient using chi-square test. A 'p' value of < 0.001 was considered statistically significant.

RESULTS

Out of 69 patients who were included in the study, 48 were male and 21 were female. The age of patients ranged from 34 to 70 years (mean age 52.03). Twenty patients were diagnosed in stage I, 13 in stage II, 20 in stage III and 16 in stage IV. The details of socio demographic variables are presented in table 1. The tumor distribution according to site is depicated in table 2. Significant association was seen between educational status of patient (p=0.003) and stage of head and neck cancer. Similarly, significant association was also found between educational status of patient's care taker (p=0.005) and stage of head and neck cancer. However, no statistical significance was seen between stage of head and neck cancer and other socio demographic variables, (gender, type of family, previous consultation, systems of alternative medicine patient had adopted before diagnosis, smoking habit, alcohol intake tobacco/betel nut chewing habit, occupation).

DISCUSSION

Most of the our patients with head and neck cancer belonged to the age group of 50-59 years. Our results are similar to study performed by Parija et al.[4] However, in a study by Taneja et al. and Patel et al. the maximum number of cancer cases were from 41–60 years age group.[5,6]

We observed that the incidence of head and neck cancer is more in males than in females irrespective of the stage. Similar findings were reported in studies by Onyango et al. and Conway et al.[7,8] This could probably be due to the prevailing local sociocultural mindset facilitating males to better healthcare accessibility leading to higher diagnosis in them .

Literature states an increased use of tobacco in women, resulting in sharp decline in the female-to-male ratio from 5:1 to approximately 3:1 over the past 5 to 10 years.[9]

Table 1. Socio demographic variables

Variable	Category	Frequency (%)
Age	30-39	3(4.3%)
	40-49	25(36.2%)
	50-59	27(39.1%)
	60-69	14(20.2%)
Sex	Male	48(69.6%)
	Female	21(30.4%)
Educational status of patient	Literate	29(42%)
	Illiterate	40(58%)
Marital status	Unmarried	9(13.0%)
	Married	53(86.8%)
	Widowed	7(10.1%)
Educational status of patient's care taker	Literate	38(55.1%)
	Illiterate	31(44.9%)
Type of family	Joint	51(73.9%)
	Nuclear	18(26.1%)
Duration	≤2 months	17(24.6%)
	>2-4 months	15(21.7%)
	>4-6 months	12(17.4%)
	>6-8 months	17(24.6%)
	>8 months - 1 year	1(1.4%)
	>1 year	7(10.1%)
Number of previous consultations before being diagnosed	None	43(62.3%)
	1	16(23.2%)
	2	10(14.5%)
Use of alternative medicine	None	43(62.3%)
	Ayurvedic	18(26.1%)
	Traditional healers (Jhankri)	8(11.6%)
Occupation	Agriculture	28(40.6%)
	Service	9(13.0%)
	Business	15(21.7%)
	Housework	17(24.6%)
Smoking status	Smoker	52(75.4%)
	Non-smoker	17(24.6%)
Alcohol intake	yes	46(66.7%)
	no	23(33.3%)
Tobacco/betel nut chewing	yes	46(66.7%)
	no	23(33.3%)

However, in our study, out of 52 patients who were smokers, 38(73.0%) were males. Similarly, out of the 46 patients who drink alcohol, 36(78.2%) were males. Most of the studies reported male preponderance similar to ours.[10,11,12] This could be because of the fact that in a country like Nepal, males have more leisure time to spend as compared to females which exposes them to the habit of smoking and alcohol which are known risk factors for development of head and neck cancer.

With regard to the use of alternate medicine, (26.1%) patients had taken homeopathic treatment and (11.6%)

Table 2. Tumor distribution according to site

Primary site of head and neck cancer	Frequency	Percentage
Nose and PNS	2	2.9
Nasopharynx	2	2.9
Oral cavity	6	8.6
Oropharynx	4	5.7
Hypopharynx	13	18.8
Supraglottis	14	20.3
Glottis	7	10.1
Thyroid	17	24.6
Parotid	2	2.9
Others	2	2.9

had been to traditional healers called "jhankri" prior to presentation to our hospital. Major percentage (66.6%) who took homeopathic medicine and 75% patients who went to traditional healers presented in late stage of head and neck cancer. A possible explanation for this is the fact that native doctors and traditional healers are much less expensive and often fit with cultural fears and superstitions. In addition to this, the general belief that cancer causes death and it is inevitable pushes patients away from medical treatment and towards alternative and complementary medicine. These patients spend time and money with non-medical practitioners and only come to the hospital when they are close to death, or only when they realize that the native treatment was not effective. Beliefs and fears exert a much greater effect in the absence of good education and information about cancer.

In our study, 29.0% patients were diagnosed in stage I, 18.8% in stage II, 29.0% in stage III and 23.2% in stage IV. We had a much larger number (52.4%) of patients in late stage (III and IV) of disease at diagnosis. Our findings are comparable to the study by Kurtulmaz et al. who reported 43.1% cases at earlier and 56.9% cases at advanced stage of the disease.[13] In another study by Chettri et al. the observations of clinical staging revealed a maximum of 40 cases (40.4%) in stage IV followed by 22 cases (24.4%) in stage I, 16 cases (17.7%) in stage III and a minimum of 12 cases (13.3%) in stage II.[14] There may be many contributing factors for the late presentation like geographical isolation, poor transport links, shortage of health care providers, lack of awareness about the disease process, poor oral hygiene, more difficult access to health care and low socioeconomic status of patients.

In the present study, thyroid (24.6%) was the commonest site of head and neck cancer followed by supraglottis (20.3%), hypopharynx (18.8%), oral cavity (10.14%), glottis (10.1%), oropharynx (4.34%), parotid (2.9%), nasopharynx (2.9%) and other cancers (2.9%). Our results are consistent with study performed by Chettri et al. who observed that malignancies of thyroid (20%) ranked highest followed by larynx (17.1%), oropharynx and oral cavity (14.3%).[14]

Our results differ from another study conducted in Nepal by Baskota et al. who found that laryngeal malignancies (25.8%) to be commoner than pharyngeal (19.5 %), which was followed by oral cavity (18.8%) and thyroid (11.9%) malignancies.[15] In another study by Patel et al. oral cavity was the most common site observed in 93 patients (84%), followed by larynx in seven patients (6%), pharynx in five patients (5%), thyroid in three patients (3%) and parotid gland in two (2%) patients.[5]

In the present study, significant association was seen between educational status of patient (p=0.003) and patient's care taker (p=0.005). Our observation is similar to that of Hansen et al. who observed that well educated patients experienced shorter doctor delays than patients who are illiterate or less educated.[16] Conversely, other researchers have shown that there is no association between patient delay and the patient's general educational level. However, strong positive association exists between the patient's lack of knowledge about head and neck cancer and delay.[17,18] Educated patients probably have better ability to describe symptoms, which speeds up referral to further examination or progression within the investigation programme. Another explanation could be that the general practitioners or hospital physicians relate better to well educated patients and intentionally or unintentionally offer these patients a more rapid diagnostic investigation. Education and socio-economic status may affect an individual's knowledge of the health care system, access to services, and potential level of involvement in care. As a result those who are more educated may have more positive outcomes because of more active involvement in treatment decisions. More importantly, level of social support among the better educated and economically stable individuals may play a role in the rehabilitation process.

In the current study we found that, 16(23.2%) of our patients had single previous medical consultation, and 10(14.5%) had two or more medical consultations before diagnosis. Interestingly, major percentage (98%) of patients who had two or more consultations presented in advanced stage, and 78% of taken single previous medical consultation presented in late stage. These findings suggest that patients initially prefer to consult a nearby health professional and later, only if not satisfied or cured of the symptoms, go to or are referred by the health professional to tertiary hospital. Patients with symptoms of head and neck cancer who are not referred or followed up after the first medical consultation, are at risk for increased professional delay.

This being a single-centre study also carries some limitations. Our data reflects specific population of patients reporting to the hospital and not the community as a whole.

CONCLUSION

In the present study, significant association was seen between stage of head and neck cancer educational status of patient and stage of head and neck cancer educational status of patient's care taker. Head and neck cancer if detected early have high cure rates. There is ignorance of head and neck cancer along with indiscriminate use of tobacco, alcohol and smoking across all classes and ages which require widespread dissemination of specific prevention programs. Preventive measures should begin at grass root levels and should be aimed at individuals who are at high risk for use of tobacco.

REFERENCES

1. Binu VS, Chandrashekhar T, Subba S, Jacob S, Kakria A, Gangadharan P, et al. Cancer pattern in Western Nepal: a hospital based retrospective study. *Asian Pac J Cancer Prev.* 2007 Apr-Jun;8(2):183-6.

2. El-Akkad SM, Amer MH, Lin GS, Sabbah RS, Godwin JT. Pattern of cancer in Saudi Arabs referred to King Faisal Specialist Hospital. *Cancer.* 1986 Sep 1;58(5):1172-8.

3. Jemal A, Siegel R, Ward E, Murray T, Xu J, Smigal C, et al. Cancer statistics, 2006. *CA Cancer J Clin.* 2006 Mar-Apr;56(2):106-30.

4. Parija UR. Proceedings of the international congress on oral cancers. *Oral oncology.* 2006;1:14–18.

5. Taneja C, Allen H, Koness RJ, Radie-Keane K, Wanebo HJ. Changing patterns of failure of Head and Neck Cancer. *Arch Otolaryngol Head Neck Surg.* 2002 Mar;128(3):324–7.

6. Patel JA, Shah FG, Kothari JM,Patel KD. Prevalence of head and neck cancers in Ahmedabad, Gujarat. *Indian J Otolaryngol Head Neck Surg.* 2009 Jan; 61(Suppl 1): 4–10.

7. Onyango JF, Macharia IM. Delays in diagnosis, referral and management of head and neck cancer presenting at Kenyatta National Hospital, Nairobi. *East Afr Med J.* 2006 Apr;83(4):85-91.

8. Conway DI, Hashibe M, Boffetta P, Wunsch-Filho V, Muscat J, La Vecchia C, et al. Enhancing epidemiologic research on head and neck cancer: INHANCE - The international head and neck cancer epidemiology consortium. *Oral Oncol.* 2009 Sep;45(9):743-6.

9. Mehrotra R, Yadav S. Oral Squamous cell carcinoma: Etiology, pathogenesis and prognostic value of genomic alterations. *Indian J Cancer.* 2006 Apr-Jun;43(2):60–6.

10. Hoffman HT, Karnell LH, Funk GF, Robinson RA, Merck HR. The national cancer data base report on cancer of the head and neck. *Arch Otolaryngol Head Neck Surg.* 1998 Sep;124(9):951-62.

11. McMahon S, Chen AY. Head and neck cancer. *Cancer Metastasis Rev.* 2003 Mar; 22(1):21-4.

12. Bhugri Y. Cancer of the oral cavity-trends in Karachi South. *Asian Pac J Cancer Prev.* 2003; 12: 25-33.

13. Kurtulmaz SY, Erkal HS, Serin M, Elhan AH, Cakmak A. Squamous cell carcinomas of the head and neck: descriptive analysis of 1293 cases. *J Laryngol Otol.* 1997 Jun; 111(6): 531-5.

14. Chettri ST, Bhandary S, Singh RK, Sinha AK, Karki S, Nepal A, et al. Pattern of head and neck malignancies in eastern part of Nepal. *Nepal Med Coll J.* 2013 Mar;15(1):34-6.

15. Baskota DK, Agrawal R, Prasad R, Sinha BK. Distribution of malignancies in head and neck regions and their management. *J Nepal Med Assoc* 2005; 44: 68-72.

16. Hansen RP, Olesen F, Sørensen HT, Sokolowski I, Søndergaard J.Socioeconomic patient characteristics predict delay in cancer diagnosis: a Danish cohort study. *BMC Health Serv Res.* 2008 Feb 28;8:49.

17. Tromp DM, Brouha XD, Hordijk GJ, Winnubst JA, de Leeuw JR. Patient factors associated with delay in primary care among patients with head and neck carcinoma: a case-series analysis. *Fam Pract.* 2005 Oct;22(5):554-9.

18. Llewellyn CD, Johnson NW, Warnakulasuriya S. Factors associated with delay in presentation among younger patients with oral cancer. *Oral Surg Oral Med Oral Pathol Oral Radiol Endod.* 2004 Jun;97(6):707-13.