ORIGINAL ARTICLE

CLINICAL STAGE OF ORAL CANCER PATIENTS AT THE TIME OF INITIAL DIAGNOSIS

Irfan Shah, Omer Sefvan, Uzair Luqman, Waseem Ibrahim, Sana Mehmood, Wajiha Alamgir*

Department of Oral Surgery, Armed Forces Institute of Dentistry, *Armed Forces Institute of Pathology, Rawalpindi, Pakistan

Background: Squamous cell carcinoma is the most common oral cancer. Early diagnosis ensures better prognosis. Late diagnosis is however common around the world and contributes to the high morbidity and mortality related to oral cancer. The objective of this study was to determine the clinical stage of oral cancer patients at the time of diagnosis. **Methods:** This retrospective study was carried out on 334 oral cancer patients who presented to the outdoor departments of Armed Forces Institute of Dentistry, and Armed Forces Institute of Pathology, Rawalpindi from July 2008 to December 2009. The records that were reviewed included history and clinical examination findings, OPG and CT scans of the head and neck region, chest X-rays, abdominal ultrasounds and liver function tests. Size of the primary tumour, the size, number and laterality of the involved cervical lymph nodes and the presence/absence of distant metastases were documented and statistically analysed using SPSS-17. **Results:** Out of the 334 patients, 203 (60.8%) were males and 131 (39.2%) females. The age range was from 21 to 88 years. Buccal mucosa was the most commonly involved site (32 %). The primary tumour was 4 Cm or more in size, (T3/T4) 71.25% of the cases. Cervical lymph nodes were involved in 211 patients (63.2%) and distant metastases were present in 39 patients (11.7%). Overall, clinical stage IV was the most common (57.18%) followed by stage III (24.55%), stage II (13.77%) and stage I (4.49%). **Conclusion:** Oral cancers are diagnosed late (Stage III and IV) in Pakistan and need immediate public and professional attention.

Keywords: Oral Cancer, Clinical Staging, TNM Staging

INTRODUCTION

Squamous cell carcinoma is the most common oral cancer.[1,2] It arises by malignant change in oral mucosa. From its site of origin, it spreads by invading and destroying adjacent structures. If not diagnosed timely and managed promptly, it spreads regionally to the cervical lymph nodes and to distant organs such as lungs, liver and bones. While the early localized disease is easy to manage and curable, regional and distant spread makes management increasingly more difficult and leads to disfigurement and loss of function. In addition the possibility of cure decreases. Thus, the 5 years survival drops by 50% with involvement of the cervical lymph nodes and further deteriorates with distant spread of the disease.[3,4]

Oral cancer has well known and easily recognizable signs and symptoms. Early lesions usually present as white/red patches, non healing ulcers, persistent growth, unexplained bleeding etc.[5–7] Similarly, the entire oral cavity is easily accessible to both self and professional examination. Early diagnosis of oral cancer should therefore be the routine. This is not, however the case in majority of the patients and late diagnosis is common around the world.[8–10]

While it is a common clinical perception that oral cancers are diagnosed late in Pakistan as well, no study has ever documented this fact and studies from other countries are generally used for reference purposes. The aim of this study was to document the stage of oral cancer at the time of initial diagnosis so as to determine whether these malignant lesions are diagnosed timely or the diagnosis is delayed leading to correspondingly poorer prognosis.

METHODS

This retrospective descriptive study was carried out on clinical and radiographic records retrieved from Armed Forces Institute of Dentistry (AFID) and Armed Forces Institute of Pathology (AFIP). A total of 334 patients with oral cancer who presented between July 2008 and December 2009 were included in this study. Patients of any age and both gender were eligible. Those who were undergoing or had undergone surgical, chemotherapeutic or radio therapeutic treatment were excluded from this study as were those with recurrent and secondary neoplasms.

The history and clinical examination findings, OPG, CT scans of head and neck region, chest radiographs, abdominal ultrasounds, liver function tests and other available relevant investigations were studied to identify the following characteristics of the tumour:

- Site and size of the primary tumour along with its invasion into adjacent structures (T).
- Size, number and laterality of the involved cervical lymph nodes (N).
- Presence/absence of distant metastases (M)

The T, N, and M categories of the tumour were combined to give an overall clinical stage to the tumour.

Statistical analyses were carried out using SPSS version 17.

RESULTS

Out of the total 334 patients, 302 (60.8%) were males and 131 (39.2%) were females. The age range was from 21 to 88 years. Buccal mucosa was the most commonly involved site (32%) followed by lower/ upper alveolus (24.8%) and tongue (21.8%) respectively (Table-1). Bone involvement was seen in 162 patients (48.5%) and mandible was more commonly involved than maxilla.

Two hundred and thirty-eight (71.25%) of the tumours were more than 4 Cm in greatest dimension and or invaded adjacent anatomic structures (T3/T4). Cervical lymph nodes were involved in 211 patients (63.2%). Single ipsilateral lymph node involvement of the submandibular group (40.41%) was most common (Table-2).

Distant metastases were noted in 39 patients (11.7%) and lungs were the most commonly involved distant organs (7.5%). This was followed in descending order by liver (3%) and bones (1.2%).

The combined T, N, and M categories gave an overall TNM stage IV to 199 patients (57.18%). The oral cancer was diagnosed in stage I in only 16 (4.79%) patients (Table-2).

Table–1: Frequency of Oral Sub site involvement by Oral Cancer

Site	Frequency	%
Buccal Mucosa	107	32.0
Gingiva/Alveolus	83	24.8
Tongue	73	21.8
Lip	23	6.9
Retro molar Area	22	6.6
Floor of Mouth	15	4.5
Palate	8	2.4
Other	3	0.9
Total	**334**	**100.0**

Table–2: T, N, and M status and clinical stage of oral cancers

Tumour Characteristics	Number of Patients (%)				Total
Primary Tumour **(T)**	T1 16 (4.79)	T2 80 (23.95)	T3 66 (19.76)	T4 172 (51.49)	**334**
Neck Nodes **(N)**	N0 123 (36.82)	N1 135 (40.41)	N2 73 (21.85)	N3 3 (0.89)	**334**
Metastases **(M)**	M0 295 (88.32)	M1 39 (11.67)	—	—	**334**
Clinical Stage **(TNM)**	I 15 (4.49)	II 46 (13.77)	III 82 (24.55)	IV 191 (57.18)	**334**

DISCUSSION

The TNM staging system was developed by Professor Pierre Denoix between 1943 and 1952 at the Institute Gustave-Roussy, France.[11] Ever since it has been modified and regularly updated by the International Union against Cancer (UICC). The current (7^{th}) edition was published in 2009. This system gives an objective standardised tool to measure extent of the disease which in turn helps in treatment planning, exchange of information, determining the prognosis and the potential for cure.[12,13] It is therefore the most commonly used staging system world over –hence its use in this study.

Oral cancer is generally considered to be a disease affecting males above 40 years of age. The vast majority of our patients were elderly males. The fact that a few patients were younger than 30 years and the male female ratio indicates that oral cancer is becoming more common in younger individuals and in females. The same alarming trend has also been reported by other studies from both developed and developing countries.[14–16]

Tongue is the most common sub site involved by oral cancer in Western world.[8,13,17] In our study buccal mucosa (32%) and mandibular gingiva/ alveolar mucosa (24.8%) were more commonly involved than tongue (21.8%). Wahid *et al* have similarly reported buccal mucosa to be more commonly involved than tongue.[2] Differences in etiologic factors for example chewed vs smoked tobacco, betel nut and pan chewing etc may explain these differences and warrant another independent study.

Majority of the patients presented with or were diagnosed with advanced lesions (Stage-IV 57.18%, and stage-III 24.55%). Majority of the primary tumours were of T3 or T4 sizes (more than 4 Cm in diameter), bone involvement was very common as was involvement of the cervical lymph nodes and distant metastases. Since this study was based on clinical and radiographic findings only, the actual presence of metastatic lesions in regional and distant sites as found on histopathology may be much higher.

While late diagnosis has been reported repeatedly by other studies, our study reports a much higher stage-IV disease. Lack of public and professional awareness, poverty, illiteracy and unavailability specialist services are of some of the factors that contributing to late presentation and diagnosis. This warrants the immediate launch of campaigns to create both public and professional awareness regarding this deadly disease that is unfortunately so common in South East Asia including Pakistan.

CONCLUSION

Oral cancers are diagnosed very late (Stage III and IV) in Pakistan leading to dismal prognosis. There is immediate need for creating public and professional awareness regarding the early signs and symptoms of oral cancer so that patient present early and medical professionals diagnose oral cancers early.

REFERENCES

1. Chi AC. Epithelial Pathology In: Neville BW, Damm DD, Allen CM, Bouquot JE. Oral & Maxillofacial Pathology. 3rd ed. Philadelphia: Saunders; 2009.p. 362–452.
2. Wahid A, Ahmad S, Sajjad M. Pattern of Carcinoma of the Oral Cavity Reporting at dental Department of Ayub Medical College. J Ayub Med Coll 2005;17(1):65–6.
3. Sargern K, Murtomaa H, Safavi SMR, Vehkalahti MM, Teronen O. Survival after diagnosis of cancer of the oral cavity. Br J Oral Maxillofac Surg 2008;46:187–91.
4. Massano J, Regateiro FS, Januaґrio G, Januaґrio A, Oral squamous cell carcinoma: Review of prognostic and predictive factors. Oral Surg Oral Med Oral Pathol Oral Radiol Endod 2006;102:67–76.
5. Bagan J, Sarrion G, Jimenez Y. Oral cancer: clinical features. Oral Oncol 2010;46:414–7.
6. Sciubba JJ. Oral cancer and its detection - History-taking and the diagnostic phase of management J Am Dent Assoc 2001;132(supplement):12S–18S.
7. Scully C, Bagan JV, Hopper C, Epstein JB. Oral cancer: Current and future diagnostic techniques Am J Dent 2008;21:199–209.
8. Warnakulasuriya S. Global epidemiology of oral and oropharyngeal cancer. Oral Oncol 2009;45:309–16.
9. McLeod NM, Saeed NR, Ali EA. Oral cancer: Delays in referral and diagnosis persist. Br Dent J 2005;198:681–4.
10. Brandizzi D, Gandolfo M, Velazco ML, Cabrini RL, Lanfranchi HE. Clinical features and evolution of oral cancer: a study of 274 cases in Buenos Airs, Argentina. Med Oral Patol Oral Cir Buccal 2008;13:E544–8.
11. Denoix PF. Bull Inst Nat Hyg (Paris) 1944;1:52–82.
12. Schroeff MP, Baatenburg de Jong RJ. Staging and prognosis in head and neck cancer. Oral Oncol 2009;45:356–60.
13. Araújo-Júnior RF, Barboza CA, Clebis NK, Moura SA, Costa AL. Prognostic significance of the anatomical location and TNM clinical classification in oral squamous cell carcinoma. Med Oral Patol Oral Cir Bucal 2008;13:E344–7.
14. Macfarlane GJ, Boyle P, Scully C. Oral cancer in Scotland: changing incidence and mortality. BMJ 1992;305:1121–3.
15. Chen J, Eisenberg E, Krutchkoff DJ, Katz RV. Changing trends in oral cancer in the United States, 1935–1985: A Connecticut study J Oral Maxillofac Surg 1991;49:1152–8.
16. Sherin N, Simi T, Shameena PM, Sudha S. Changing trends in oral cancer. Indian J Cancer 2008;45:93–6.
17. Lam L, Logan RM, Luke C. Epidemiological analysis of tongue cancer in South Australia for the 24-year period, 1977–2001. Aust Dent J 2006;51:(1):16–2.

Address for Correspondence:

Dr. Irfan Shah, Army Medical College/Armed Forces Institute of Dentistry (AFID), National University of Sciences & Technology (NUST) Islamabad. **Cell:** +92-300-5972646.
Email: drshah121@hotmail.com