



Staging significance of bone invasion in small-sized (4 cm or less) oral squamous cell carcinoma as defined by the American Joint Committee on Cancer



Su Kyung Kuk, Hye Jung Yoon, Seong Doo Hong, Sam Pyo Hong, Jae Il Lee*

Department of Oral Pathology, School of Dentistry and Dental Research Institute, Seoul National University, Seoul, Republic of Korea

ARTICLE INFO

Article history:

Received 7 October 2015
Received in revised form 24 December 2015
Accepted 19 January 2016
Available online 12 February 2016

Keywords:

Oral cancer
Head and neck cancer
Squamous cell carcinoma
Bone invasion
Prognosis
Disease progression
Staging

SUMMARY

Objectives: The staging significance of bone invasion is controversial in oral squamous cell carcinoma (OSCC) cases with tumors measuring 4 cm or less according to the American Joint Committee on Cancer (AJCC). Our aim was to retrospectively examine a large group of patients with OSCC to determine the staging significance of bone invasion.

Materials and Methods: Three hundred and twenty-three patients with primary OSCC were classified based on tumor size. Bone invasion was categorized as absent, one side bone, and both buccal and lingual bones, and analyzed for association with disease progression. Regional lymph node metastasis (N), perineural invasion, vascular invasion, surgical margin involvement, and adjuvant treatment were also analyzed.

Results: In all OSCC cases, bone invasion ($p = 0.007$) with stage N, perineural invasion, and surgical margin involvement were significant independent prognostic factors of disease progression. However, in OSCC cases with tumors measuring 4 cm or less, bone invasion was not significantly associated with disease progression. Nevertheless, invasion of both buccal and lingual bones was significantly associated with disease progression ($p = 0.03$). In multivariate analysis, both buccal and lingual bone invasion ($p = 0.04$; hazard ratio = 3.4; 95% confidence interval, 1.0–11.0), stage N2, and perineural invasion were also independent prognostic factors.

Conclusion: Although OSCC bone invasion was an independent prognostic factor, bone invasion in small OSCC was not. However, small OSCC with both buccal and lingual bone invasion had a significantly worse prognosis. The AJCC T system is of limited prognostic value for small OSCC with bone invasion. But other elements should be examined before a modification can be accepted.

© 2016 Elsevier Ltd. All rights reserved.

Introduction

According to the 2010 American Joint Committee on Cancer (AJCC) [1], primary oral squamous cell carcinoma (OSCC) patients with medullary bone invasion should be defined as T4a. Some studies show that OSCC bone invasion has a significant effect on survival in univariate analysis [2,3]. Furthermore, infiltrative bone invasion was shown to be associated with patient prognosis after correcting for the effects of other variables [4].

Despite the fact that OSCC bone invasion is an independent prognostic factor, a revision of the 2010 AJCC T system was suggested for small-sized (≤ 4 cm) OSCC [5]. Ebrahimi et al. recom-

mended a revision of the T system that included the classification of tumors as T1–T3 based on size and their upstaging by one T stage in the presence of medullary bone invasion [5]. This was supported by another study that showed that although bone invasion is a statistically significant factor for survival, bone invasion in OSCC ≤ 4 cm has no significant effect [6]. This issue still remains controversial.

In the present study, we examined whether bone invasion in OSCC ≤ 4 cm is a significant factor using multivariate analysis with the inclusion of other important prognostic factors. Additionally, to confirm the rationale for the current AJCC T staging system, we inspected a high risk subgroup of patients with small-sized (≤ 4 cm) OSCC with bone invasion that should be defined as T4. Many cases of OSCC with tumors measuring > 2 cm and ≤ 4 cm (T2) show bone invasion without invasion of the maxillary sinus or nasal cavities [7]. In particular, certain cases show extensive

* Corresponding author at: Department of Oral Pathology, School of Dentistry, Seoul National University, Daehak-ro 101 (Yeongeong-dong), Jongno-gu, Seoul 03080, Republic of Korea. Tel.: +82 2 2072 3621; fax: +82 2 764 6088.

E-mail address: jilee@snu.ac.kr (J.I. Lee).

destruction of both buccal and lingual bones among patients with mandibular OSCC. Here, we examined whether the prognosis of these patients differed from that of patients with minimal bone invasion.

Patients and methods

Patients

Archival glass slides from 323 primary OSCC patients (144 with medullary bone invasion) who underwent surgery at Seoul National University Dental Hospital, Seoul, South Korea, between January 1999 and January 2013 were selected. All cases treated during this period were included in the study, except for patients who did not undergo surgery or had insufficient information or other malignancies before the diagnosis of OSCC. Based on the initial pathological and clinical data, patients were classified according to the 2010 AJCC staging system as T1, 83 cases; T2, 74 cases; T3, 17 cases; and T4, 149 cases (Table 1). The study protocol was

approved by Seoul National University Dental Hospital Institutional Review Board (CRI14030).

Clinicopathological data

Age, gender, tumor location, adjuvant therapy, regional lymph node metastasis and distant metastasis were included as retrospective analysis factors. The patients received postoperative adjuvant therapies at different institutions; therefore, the decision to use postoperative radiotherapy (RT) or concurrent chemotherapy and radiotherapy (CCRT) was made by each institution. As a result, the patients with adverse risk features were not treated according to RT or CCRT guidelines defined by the National Comprehensive Cancer Network [8]. In the present study, the patients treated with RT had a positive surgical margin, bone invasion, perineural invasion, vascular invasion, or N2 nodal disease. The patients treated with CCRT showed a positive margin and extracapsular nodal spread or had multiple poor prognostic factors. In patients with tumors ≤ 2 cm (T1), 18 patients (18.7%) received RT with a

Table 1
Patients' clinicopathological data.

Pathological T, size only Variable	T1 (≤ 2 cm) No. (%)	T2 (>2 and ≤ 4 cm) No. (%)	T3 (>4 cm) No. (%)	Total (%)
No. of patients	96 (29.7)	147 (45.5)	80 (24.8)	323
Age (yrs.)				
<65	57 (59.4)	80 (54.4)	49 (61.3)	186 (57.6)
≥ 65	39 (40.6)	67 (45.6)	31 (38.7)	137 (42.4)
Sex				
Male	56 (58.3)	94 (63.9)	53 (66.3)	203 (62.8)
Female	40 (41.7)	53 (36.1)	27 (33.7)	120 (37.2)
Tumor site				
Tongue	45 (46.9)	35 (23.8)	6 (7.5)	86 (26.6)
Mandible	20 (20.8)	64 (43.5)	53 (66.3)	137 (42.4)
Maxilla	11 (11.5)	36 (24.5)	14 (17.5)	61 (18.9)
Buccal mucosa	12 (12.5)	10 (6.8)	7 (8.7)	29 (9.0)
Floor of mouth	5 (5.2)	2 (1.4)	0	7 (2.2)
Lip	3 (3.1)	0	0	3 (0.9)
Concurrent neck dissection				
Surgery	46 (47.9)	27 (18.4)	5 (6.2)	78 (24.1)
Surgery + neck dissection	50 (52.1)	120 (81.6)	75 (93.8)	245 (75.9)
AJCC T stage				
T1	83 (86.5)	0	0	83 (25.7)
T2	0	74 (50.3)	0	74 (22.9)
T3	0	0	17 (21.3)	17 (5.3)
T4	13 (13.5)	73 (49.7)	63 (78.7)	149 (46.1)
AJCC N stage				
N0	75 (78.1)	95 (64.6)	36 (45.0)	206 (63.8)
N1	9 (9.4)	23 (15.7)	14 (17.5)	46 (14.2)
N2	12 (12.5)	29 (19.7)	30 (37.5)	71 (22.0)
Bone invasion				
Absent	83 (86.5)	77 (52.4)	19 (23.8)	179 (55.4)
Present	13 (13.5)	70 (47.6)	61 (76.2)	144 (44.6)
Perineural invasion				
Absent	91 (94.8)	133 (90.5)	64 (80.0)	288 (89.2)
Present	5 (5.2)	14 (9.5)	16 (20.0)	35 (10.8)
Vascular invasion				
Absent	93 (96.9)	144 (98.0)	79 (98.7)	316 (97.8)
Present	3 (3.1)	3 (2.0)	1 (1.3)	7 (2.2)
Surgical margin involvement				
Negative	41 (42.7)	63 (42.8)	27 (33.8)	131 (40.6)
Close (<5 mm)	53 (55.2)	72 (49.0)	46 (57.5)	171 (52.9)
Positive	2 (2.1)	12 (8.2)	7 (8.7)	21 (6.5)
Treatment modality				
Surgery	78 (81.3)	95 (64.6)	28 (35.0)	201 (62.2)
Surgery + RT	18 (18.7)	48 (32.7)	45 (56.3)	111 (34.4)
Surgery + CCRT	0	4 (2.7)	7 (8.7)	11 (3.4)

Abbreviations: AJCC, American Joint Committee on Cancer; RT, radiotherapy; CCRT, concurrent chemotherapy and radiotherapy.

Download English Version:

<https://daneshyari.com/en/article/3163903>

Download Persian Version:

<https://daneshyari.com/article/3163903>

[Daneshyari.com](https://daneshyari.com)