

Original Article

Management of base of tongue squamous cell carcinoma: Experience with 85 patients in Taipei Veterans General Hospital

Wei-Chi Tseng^{a,b}, Shyue-Yih Chang^{a,b}, Pen-Yuan Chu^{a,b}, Shyh-Kuan Tai^{a,b,c},
Yi-Feng Wang^{a,b,c}, An-Suey Shiao^{a,b}, Tung-Lung Tsai^{a,b,c,*}

^a Division of Laryngology—Head and Neck Surgery, Department of Otolaryngology, Taipei Veterans General Hospital, Taipei, Taiwan, ROC

^b National Yang-Ming University School of Medicine, Taipei, Taiwan, ROC

^c Institute of Clinical Medicine, National Yang-Ming University School of Medicine, Taipei, Taiwan, ROC

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Abstract

Background: The optimal treatment of base of tongue squamous cell carcinoma (BOTSCC) remains controversial. To optimize treatment planning, this study analyzed the outcomes of patients with BOTSCC treated in Taipei Veterans General Hospital.

Methods: Retrospective chart reviews were performed for 107 patients with BOTSCC from January 1990 to December 2004, and 85 patients were included, with a mean follow-up interval of 38 months. Patients were divided into surgical and radiotherapy/chemoradiation therapy (RT/CRT) groups. Potentially significant variables for survival were analyzed.

Results: The 3-year overall survival (OS) and disease-free survival rates were 40% and 37.1%, respectively. No significant differences in the patient and disease characteristics between the surgical ($n = 39$) and RT/CRT groups ($n = 46$) were found. Advanced overall stage ($p = 0.034$), cervical lymph node metastasis ($p = 0.007$), and regional recurrence ($p = 0.024$) were poor prognostic factors for OS. In early-stage disease (Stages I and II), the 3-year OS was higher in the surgical group (68.6%) than in the RT/CRT group (37.5%), but the significance was only borderline ($p = 0.071$). There was no significant difference in the 3-year OS between the patients in the surgical and RT/CRT groups with advanced-stage disease. In the surgical group, lymphovascular permeation ($p = 0.015$) and soft-tissue involvement ($p = 0.01$), determined by pathologic examination, were poor prognostic factors for OS. Recurrence occurred in 35 patients (41.2%), with no significant difference in local, regional, or distant control between the surgical and RT/CRT groups.

Conclusion: These findings emphasize the importance of neck disease control in the treatment of BOTSCC. Although currently, RT/CRT is used more frequently, surgery may still have a role in the treatment of early-stage disease. Both surgery with adjuvant therapy and RT/CRT produced equivalent survival rates in the treatment of advanced-stage disease, but the recurrence rate was unsatisfactory. A more effective treatment modality with less early and late toxicity is needed.

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Keywords: Base of tongue; Chemoradiation; Oropharynx; Radiation; Squamous cell carcinoma

1. Introduction

Although research has reported good results of oropharyngeal squamous cell carcinoma treated by chemoradiation therapy (CRT),^{1,2} the optimal treatment of base of tongue

squamous cell carcinoma (BOTSCC) remains controversial.^{2,3} In BOTSCC, reports indicate that the treatment response is significantly worse than that for other oropharyngeal subsites.² Furthermore, evidence from a population-based study of the United States National Cancer Data Base, which included 16,188 cases of BOTSCC, did not support the superiority of nonsurgical treatment because it failed to provide favorable survival outcome.³ Patients with favorable T1 and T2 lesions can be treated with surgery or radiotherapy (RT) alone. Radical

* Corresponding author. Dr. Tung-Lung Tsai, Department of Otorhinolaryngology—Head and Neck Surgery, Taipei Veterans General Hospital, 201, Section 2, Shih-Pai Road, Taipei 112, Taiwan, ROC.

E-mail address: tltsai@vghtpe.gov.tw (T.-L. Tsai).

tumor resection followed by RT has been the standard therapy in patients with advanced BOTSCC because of higher rates of locoregional control, but this often results in dysfunction of swallowing and speech.⁴ Nonsurgical treatments with CRT have shown equivalent oncologic results. However, debates about whether surgery with or without adjuvant therapy produces better oncologic results than nonsurgical protocols, particularly for advanced tumors, are ongoing.

Poor control of disease in patients with BOTSCC has been attributed to the advanced stage of disease when diagnosed, which results from many factors including tumor behavior, anatomic factors, and the patient's personality and socioeconomic status. The purpose of this study was to analyze the clinical presentation, treatment response, failure patterns, and rates of survival among patients with BOTSCC treated in Taipei Veterans General Hospital (VGHTPE) to optimize the planning and choice of treatment modality.

2. Methods

This study was approved by the Institutional Review Board of VGHTPE. From January 1990 to December 2004, 107 patients with BOTSCC were seen at the Department of Otorhinolaryngology—Head and Neck Surgery of VGHTPE.

Their medical records were reviewed retrospectively. All the diagnoses were proved by biopsy and pathologic examination. The tumors were re-staged retrospectively based on the 2002 criteria of the American Joint Committee on Cancer classification.⁵ Patients who received any type of curative resection at the primary site with or without neck dissection (ND) as initial treatment were defined as the surgical group. The RT/CRT group was composed of patients who were treated with RT or CRT as definitive therapy. Patients who underwent salvage surgery performed after the completion of CRT or RT were not included in the surgical group. The exclusion criteria for analysis were the presence of other underlying malignancies, previous treatment of BOTSCC, and distant metastasis (DM) at the time of diagnosis. Of the 107 patients identified, 4 patients had metastatic disease at the time of diagnosis and 18 patients did not receive curative treatment at VGHTPE. Thus, 85 patients were included in this study.

2.1. Statistical analysis

Overall survival (OS) was defined as the interval between the initial date of treatment and the date of death. The interval between the initial date of treatment and the date of the last consultation was defined as censored times. For the

Table 1
Patients' characteristics

Characteristics	All patients (n = 85)	Surgery (n = 39)	Nonsurgery (n = 46)
Mean follow-up (mo)	38.0 (1.3–180.5)	46.8 (2.37–180.5)	29.5 (1.3–153.3)
Sex			
Men	77 (90.6)	34 (87.2)	43 (93.5)
Women	8 (9.4)	5 (12.5)	3 (6.5)
Age (yr)	57 (28–84)	57.6 ± 11.7 (30–83)	56.5 ± 13.2 (28–84)
Clinical stage			
Early (I, II)	18	10 (25.6)	8 (17.4)
Late (III, IV)	67	29 (74.4)	38 (82.6)
T stage			
T1	10 (11.8)	8 (20.5)	2 (4.3)
T2	35 (41.2)	13 (33.3)	22 (47.8)
T3	24 (28.2)	11 (28.2)	13 (28.3)
T4a	11 (12.9)	5 (12.8)	6 (13)
T4b	5 (5.9)	2 (5.1)	3 (6.5)
N stage			
N0	25 (29.4)	12 (30.8)	13 (28.3)
N1	13 (15.3)	5 (12.8)	8 (17.4)
N2a	4 (4.7)	2 (5.1)	2 (4.3)
N2b	22 (25.9)	10 (25.6)	12 (26.1)
N2c	13 (15.3)	7 (17.9)	6 (13)
N3	8 (9.4)	3 (7.7)	5 (10.9)
Overall stage			
I	5 (5.9)	4 (10.3)	1 (2.2)
II	13 (15.3)	6 (15.4)	6 (15.2)
III	13 (15.3)	5 (12.8)	7 (17.4)
IVA	41 (48.2)	20 (51.3)	21 (45.7)
IVB	13 (15.3)	4 (10.3)	9 (19.6)

Data are presented as number ± standard deviation with percentage or range in parentheses.

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