Prognoses of Oral Basaloid Squamous Cell Carcinoma and Squamous Cell Carcinoma

A Comparison

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Objective: To compare clinical and prognostic features in patients with basaloid squamous cell carcinoma (BSCC), poorly differentiated squamous cell carcinoma (PDSCC), and well to moderately differentiated squamous cell carcinoma (W/MSCC) of the oral cavity.

Design: Retrospective cohort.

Setting: Referral tertiary center.

Patients: Seventeen patients with primary oral BSCC, 27 with PDSCC, and 27 with SCC.

Intervention: The 71 patients all had surgery and 52 had postoperative radiotherapy.

Main Outcome Measures: Recurrences and survival.

Results: The median follow-up time was 52.4 months for patients with BSCC, 22.2 months for those with PDSCC, and 13.8 months for those with SCC. No statistically significant differences on survival were found among the BSCC, PDSCC, and SCC groups. The 5-year cancer-specific survival rates were 50% for patients with BSCC, 37% for those with PDSCC, and 49% for those with W/MSCC (P = .71); the 3-year overall survival rates were 46% for patients with BSCC, 18% for those with PDSCC, and 41% for those with W/MSCC (P = .25). Disease-free survival was not significantly different among the BSCC, PDSCC, and W/MSCC groups (P = .57). The 5-year rate of disease-free survival was 40% for patients with BSCC, 37% for those with PDSCC, and 53% for those with W/MSCC.

Conclusions: The clinical course of BSCC is similar to the courses of PDSCC and W/MSCC when clinical T and N classifications are matched. Prognosis does not differ for patients with BSCC of the oral cavity and those with conventional oral squamous cell carcinomas PDSCC and W/MSCC.

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BASALOID SQUAMOUS CELL CARCINOMA (BSCC) is considered a high-grade variant of squamous cell carcinoma that arises preferentially in the upper aerodigestive tract, ie, the base of the tongue, larynx, and hypopharynx.1 In the oral cavity, BSCC has a predilection for the tongue, though it has been described in other locations such as the floor of the mouth,2-4 palate,5,6,7 retromolar trigone,3 buccal mucosa,8,9 and gingiva.2,10 The aggressive biological behavior of BSCC of the head and neck has been associated with early recurrence, cervical lymph node involvement, and distant metastasis.1,4,5,16-18 and with spread to the lungs and liver.1,15 Most BSCCs are diagnosed at advanced clinical stages3,11-17 and have an unfavorable prognosis because of poor overall patient survival rates.3,11,13,16,18

Clinically, patients with BSCC present features similar to those of patients with conventional squamous cell carcinoma (SCC) and have the same etiological risk factors, eg, tobacco and alcohol consumption.3,5,11,13,15,16,19

The comparative analysis of the clinical course and prognosis of BSCC and conventional SCC has aroused controversy in the literature. Although some authors have observed that BSCC has a more aggressive behavior than SCC,2,3,13,16,20 others consider that it has a similar prognosis.12,13,17,21,22 To compare the biological features and clinical courses of oral BSCC and conventional oral SCC in groups of matched patients is a difficult task. Records are sometimes incomplete and inconsistent, which precludes an appropriate prognosis and treatment design; moreover, as there is only a limited number of records of cases of BSCC affecting exclusively the oral cavity,2,19 few data about the biological properties influencing prognosis have been published.2,5,20

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The clinical and demographic parameters of patients with oral BSCC and conventional oral PSCC or W/MSCC were similar, as summarized in Table 1.

The age of patients ranged from 43 to 77 years (mean, 59 years) for those with oral BSCC, from 33 to 78 years (mean, 58 years) for those with PSCC, and from 35 to 74 years (mean, 54 years) for those with W/MSCC. The Kruskal-Wallis test revealed no statistically significant differences in age among patients with BSCC, PSCC, and W/MSCC (P = .33). There was a predominance of white men in the 3 groups (Table 1).

Macroscopically, BSCC tumors were infiltrative in 10 (59%) cases, SCC tumors were infiltrative in 41 (76%) cases, and most of them were detected at an advanced clinical stage.

Regarding treatment and clinical course, 9 patients with BSCC (33%) underwent surgery and simultaneous ipsilateral neck dissection, 15 patients (88%) received postoperative radiotherapy, and 3 patients (18%) received adjuvant chemotherapy. Twenty patients (74%) with PSCC and 22 (82%) with W/MSCC underwent surgery and simultaneous ipsilateral neck dissection. A total of 23 patients (89%) with PSCC and 14 (52%) with W/MSCC received postoperative radiotherapy. Nine patients with conventional SCC (8 with PSCC and 1 with W/MSCC) underwent adjuvant chemotherapy (Table 2).

No statistically significant differences among BSCC, PSCC, and W/MSCC patients were found regarding tumor recurrence (Table 2). Three patients (18%) with BSCC presented local recurrence, 5 patients (29%) had tongue, floor of the mouth, inferior gingiva, or retromolar area; (2) no previous treatment; and (3) curative surgery as first treatment. The exclusion criteria were (1) a contraindication for surgery, eg, the patient was inoperable or the tumor unresectable; (2) distant metastases at the time of admission; (3) the presence of other primary tumors; (4) previous treatment; and (5) patient refusal of surgical treatment.

The patients’ data were collected from their medical records and included sex, age, ethnic group, tobacco and/or alcohol consumption, tumor location and size, evidence of nodal metastases, T and N stage, treatment (surgery, postoperative radiotherapy, and/or adjuvant chemotherapy), and adverse events during clinical follow-up (recurrence, occurrence of a second primary tumor, or death).

Analysis for the age of patients, a continuous variable, was performed using the nonparametric Kruskal-Wallis test. Categorical variables were analyzed using the chi² test or the Fisher exact test, with significance at P = .05. Survival rates were calculated by the Kaplan-Meier method and analyzed with the log-rank test. The overall survival time was defined as the interval between the date of surgery and the date of the last consultation (for censored observations) or date of death (for uncensored observations). The cancer-specific survival time was defined as the interval between the date of surgery and the date of the last consultation (for censored observation) or the date of death due to the primary tumor (for uncensored observations). The disease-free survival time was defined as the interval between the date of surgery and the date of the last consultation (for censored observation) or the date of first tumor recurrence (for uncensored observations). We used the Stata statistical software, release 7.0 (StataCorp, College Station, Tex).

### RESULTS

#### METHODS

Seventeen cases previously classified as SCCs and surgically treated from June 8, 1970, to November 4, 2000, at the Department of Head and Neck Surgery and Otorhinolaryngology of the Cancer Hospital A. C. Camargo, Sao Paulo, Brazil, were reviewed and reclassified as BSCCs after staining with hematoxylin-eosin and periodic acid–Schiff and evaluation by light microscopy. These tumors fulfilled the histologic criteria proposed by Wain et al and were included in this study only after 3 pathologists (F. C. G. S. G., D. T. O, and G. L.) agreed on the microscopic diagnosis of BSCC. A retrospective review of 54 cases of clinical T and N classifications allowed to match our 17 cases with 27 cases of W/MSCC and 27 cases of PSCC for comparative clinical analysis and prognostic evaluation. The T and N classifications were determined according to the criteria proposed by the International Union Against Cancer (available at www.wiley.com/go/tmn).

All patients included in this retrospective study underwent surgical treatment, alone or followed by postoperative radiotherapy and/or chemotherapy. The inclusion criteria were (1) a histopathologically confirmed diagnosis of SCC of the oral
Table 2. Treatment and Clinical Outcomes for Basaloid Squamous Cell Carcinoma and Conventional Squamous Cell Carcinoma of the Oral Cavity

| Group, No. (%) | BSCC (n = 17) | PSCC (n = 27) | W/MSCC (n = 27) | P  
|---------------|---------------|---------------|-----------------|---
| Treatment     |               |               |                 |   
| Neck dissection |              |               |                 |   
| Ipsilateral   | 9 (52.9)      | 20 (74.1)     | 22 (81.5)       |   
| Bilateral     | 8 (47.1)      | 7 (25.9)      | 5 (18.5)        | .12  
| Postoperative radiotherapy |            |               |                 |   
| Yes           | 15 (88.2)     | 23 (85.2)     | 14 (51.9)       |   
| No            | 2 (11.8)      | 4 (14.8)      | 13 (48.1)       | .006  
| Chemotherapy  |               |               |                 |   
| Yes           | 3 (17.6)      | 8 (29.6)      | 1 (3.7)         |   
| No            | 14 (82.4)     | 19 (70.4)     | 26 (96.3)       | NA   
| Clinical outcome |             |               |                 |   
| Recurrence    |               |               |                 |   
| Yes           | 10 (58.8)     | 15 (55.6)     | 11 (40.7)       | .41  
| No            | 7 (41.2)      | 12 (44.4)     | 16 (59.3)       |   
| Patient survived |           |               |                 |   
| With no evidence of disease | 3 (17.6)     | 0 (0)         | 8 (29.6)        | NA   
| With recurrence | 1 (5.9)      | 1 (3.7)       | 0 (0)           |   
| Patient died  |               |               |                 |   
| Of disease    | 8 (47.1)      | 14 (51.8)     | 13 (48.1)       |   
| Of other causes | 4 (23.5)     | 11 (40.7)    | 4 (14.8)        | NA   
| Patient lost to follow-up | 1 (5.9)      | 1 (3.7)       | 2 (7.4)         | NA   

Abbreviations: BSCC, basaloid squamous cell carcinoma; NA, not available; PSCC, poorly differentiated squamous cell carcinoma; W/MSCC, well to moderately differentiated squamous cell carcinoma.

*The P values are for the maximum likelihood statistics.

As shown in Figure 1 and Figure 2 there were no differences in the 5- and 10-year survival rates among the BSCC, PSCC, and W/MSCC groups. The 5- and 10-year cancer-specific survival rates were, respectively, 50% and 50% for patients with BSCC; 37% and 28% for patients with PSCC; and 49% and 49% for patients with W/MSCC (P = .71). The 5- and 10-year overall survival rates were, respectively, 46% and 21% for patients with BSCC; 18% and 13% for patients with PSCC; and 41% and 41% for patients with W/MSCC (P = .25). The 5- and 10-year disease-free survival rates were, respectively, 40% and 40% for patients with BSCC; 37% and 25% for patients with PSCC; and 53% and 53% for patients with W/MSCC (P = .57).

In the head and neck, including the oral cavity, BSCC has been considered to be biologically more aggressive than conventional SCC and associated with a poor clinical outcome. However, there are few studies evaluating the clinical course of BSCC located exclusively within the mouth. Some of these studies analyzed small samples, which does not allow to confirm if the clinical prognosis of BSCC is worse than that of conventional SCC.

Histologically, BSCC shows specific characteristics; however, in most cases, the tumor presents clinical features similar to those associated with conventional SCC of the same anatomic sites in the head and neck. Our series confirmed that the clinical findings for patients with BSCC did not differ from those who had conventional SCC matched for T and N classification, site, and treatment. Tumors were more frequent among men in their fifth decade of life and with a history of smoking and alcohol abuse. Moreover, BSCC was usually observed at an advanced stage, as is usually the case.

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and 47% of the patients died because of the disease. The aggressive behavior of BSCC and conventional SCC observed in this study was characterized by local and cervical lymph node recurrences and distant metastasis spreading to the lungs.

In our series, in agreement with previous reports for the oral cavity,22,23 BSCC arose predominantly in the floor of the mouth and most of the lesions were infiltrative tumors. On the other hand, conventional oral SCC occurred with a higher frequency in the retromolar area and inferior gingiva than BSCC (Table 1). All patients in the BSCC, PSCC, and W/MSCC groups received treatment for conventional SCC in advanced clinical stages, ie, surgical excision of the primary tumor with ipsilateral or bilateral neck dissection. Postoperative radiotherapy was administered to most of the patients with BSCC and PSCC (Table 2) but adjuvant chemotherapy, as recommended by some authors,12,13,15,16 for patients with BSCC, was offered to few patients.

Regarding the clinical outcome of BSCC, this study showed a higher frequency of local (18%) and neck (29%) recurrences compared with the recurrences to the head and neck found by Ferlito et al12 and Banks et al.12 However, the clinical outcome of patients with conventional SCC in our series, including local and neck recurrences and distant metastasis, did not differ from the outcome of patients with BSCC, as shown in our previous reports. Although no statistically significant differences related to clinical outcome were found among the BSCC and conventional SCC groups, local recurrence prevailed in patients with SCC but rates of neck recurrence and distant metastases were higher in patients with BSCC, as described by others.3,15,16

Although no patient with well to moderately differentiated SCC developed a second primary tumor, 3 patients (18%) with BSCC and 4 patients (15%) with poorly differentiated SCC exhibited second primary tumors. The frequency of a second primary tumor in patients with BSCC was higher than that observed by Banks et al12 (5.0%) but it was close to that detected by Ferlito et al13 (20.0%) in patients with head and neck BSCC.

There were no significant differences in cancerspecific and disease-free survival rates among the BSCC, PSCC, and W/MSCC groups.

In conclusion, this clinical study supports the opinion that the prognosis of BSCC does not differ from that of conventional SCC of the oral cavity when matched for clinical T and N classification. Therefore, patients with BSCC or conventional SCC (PSCC or W/MSCC) of the tongue, floor of the mouth, inferior gingiva, or retromolar area matched by stage may undergo the same therapeutic protocols, ie, a combination of surgery and postoperative radiotherapy, to prevent local and neck recurrences and distant metastasis. Further comparative studies between oral BSCC and conventional SCC of the oral cavity are necessary to define their clinical behavior and prognostic significance.

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