

ORIGINAL RESEARCH

Prognosis of Patients less than 40 Years of Age with Squamous Cell Cancer of the Oral Tongue

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ABSTRACT

Introduction: Controversy exists about the prognosis of squamous cell carcinoma of the tongue between young and older patients. Our objective was to evaluate age as a prognostic factor in oral tongue cancer.

Materials and methods: A retrospective study was conducted by reviewing charts of 61 patients. They were divided into two age groups, below 40 years and above 40 years. Data regarding epidemiology pathology report, tumor differentiation, staging, treatment and outcome were obtained. The length of survival and disease recurrence was calculated and compared in this two age group. Statistical analysis was performed using student, t-test.

Results: The result showed no significant difference in prognosis, tumor differentiation or staging related to age in oral tongue cancer.

Conclusion: Although age is not a significant prognostic factor in oral tongue cancer, the disease etiology is likely different, we recommend prompt and aggressive treatment of young patients.

Keywords: Disease recurrence, Length of survival, Prognostic factor, Tongue cancer, Tongue neoplasms.

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INTRODUCTION

There has been a long-standing debate regarding the prognosis of young versus older patients affected with squamous cell tongue cancer. Some sources claim the prognosis of the young to be worse,¹⁻⁵ others similar⁶⁻¹⁵ or better.¹⁶⁻¹⁸ Given the wide disagreement on the question, our study is unlikely to present an ultimate answer to this

question. We nevertheless hope to be able to contribute to the understanding of this disease and evaluate our management by determining overall survival rate and disease-free survival in this series. In our opinion, prognostic factors are different in patients less than 40. Because tumors behave more aggressively than suggested by their TNM staging in this age group, it has been shown that size of the lesion is not a good prognostic factor in oral cancer in this population.¹⁹ Furthermore, because epidemiological changes have taken place, notably a significant increase in oral cancer in women,²⁰ we do not think that gender plays a significant prognostic role in the disease of young patients. We hope to be able to demonstrate our hypothesis through analysis of risk factors in this series.

MATERIALS AND METHODS

After approval by the McGill University Research and Ethics Committee, a list of all patients diagnosed with squamous cell cancer of the oral tongue in the 5 years from 2001 to 2006 was made from the records of the MUHC and Jewish General Hospital, Montréal, Canada. A total of 61 patients were identified. Charts were reviewed for gender, age at diagnosis, family history of head and neck cancer, smoking and alcohol consumption, presenting symptoms and findings at diagnosis, pathological report, surgery performed, radiotherapy received, complications, mortality and last date of follow-up. A database presenting details on prognostic and staging profile was developed using this information. In accord with previously published research, patients were stratified as less than or equal to 40 (young) or above 40 (older). Statistical analysis was performed using student t-test to determine significance.

RESULTS

Demographic analysis was made considering smoking, alcohol consumption and mortality (Table 1). Significant difference was only found in the incidence of smoking. In order to evaluate disease presentation, we evaluated the difference in stage (Table 2) and tumor grade at presentation (Table 3).

A total of 61 patients were found to have oral tongue cancer, among them 53 were older than 40 years of age

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Table 1: Demographic profile

	Young (<40)	Older (>40)	p-value
Number	8	53	
M/F	6/2	30/23	0.28
Average age	33 (28-39)	67 (41-89)	
Smoking	1 (13%)	34 (64%)	0.007
Alcohol	3 (38%)	22 (42%)	0.29
Mortality	1 (13%)	3 (5.6%)	0.36

Table 2: Stage at presentation per age group

Stages	Young (<40)	Older (>40)	p-value
I	2 (25%)	14 (25%)	0.33
II	1 (12.5%)	13 (25%)	0.30
III	3 (38%)	12 (23%)	0.21
IV	2 (25%)	14 (26%)	0.33

Table 3: Tumor grade per age group

Grade	Young (<40)	Older (>40)	p-value
Well	3 (38%)	19 (36%)	0.30
Moderate	3 (38%)	18 (34%)	0.29
Poor	2 (25%)	16 (30%)	0.32

and only eight of them were less than 40 years. Thirty-four of the older age group (64%) were smokers comparing to only one (13%) of the younger age group. Similarly, alcohol consumption was more common in the older group 22 (42%) in comparison to the younger age group 3 (38%). The mortality was relatively higher in the younger age group (13%) compared to 5.6% in older.

Most of patients, three (38%) from the younger group, presented with stage III cancer while most of the patients 14 (26%) from older group presented with stage IV. Histopathologically, well-differentiated, moderate and poorly differentiated cancers, all three were diagnosed almost equally in both groups (Table 3).

DISCUSSION

Several studies have previously attempted to compare the prognosis of patients less than 40 to those more than 40 affected with squamous cell tongue cancer. Unfortunately, no consensus has been reached in this debate as some concluded that the prognosis was worse,^{1-5,19} similar to,⁶⁻¹⁵ and others better¹⁶⁻¹⁸ in the younger population compared to older groups. Our study demonstrates a similar prognosis for both groups, the difference in mortality rate is insignificant with a p-value of 0.36. This suggests that age is not a significant prognostic factor in this disease.

Our study demonstrates a similar prognosis for both groups, thereby suggesting that age is not a significant prognostic factor in this disease. However, given the relatively small number of patients studied, these

findings should be considered against the light of the current literature, which remains ambivalent on the question.

Several studies have attempted to define the significant prognostic factors associated with squamous cell carcinoma of the tongue. Some of the factors identified include: male gender^{21,22} invasion of resection margins and smoking²³ as well as tumor thickness and distance from resection margins.²⁴ Furthermore, positive neck nodes are associated with a poor prognosis and low salvage rate.²⁵ As with most other cancers, tumor (T) stage, nodal stage (N) and extension to the tonsillar region were shown to have a significant relationship to survival,²⁵ and perineural invasion to significantly increase the risk of recurrence.²⁶ In this study, there was no significant difference in disease stage at presentation or tumor stage at resection between the older and the younger group. This thereby suggests that groups were relatively comparable regarding disease evolution and type between the two groups, enforcing the previously suggestion that there is indeed no significant difference in prognosis between older and younger patients, and this for equivalent disease stage or tumor grade.

Chewing betel nut or tobacco, smoking tobacco and alcohol abuse are all habits that have been identified as risk factors for the development of oral cancer.²⁷⁻³⁰ However, in most previous case series, patients with squamous cell tongue cancer less than 40 years of age tended to be nonsmokers and nondrinkers,^{3,5,10,20,31-33} which is also the case in this study. Even in cases where a significant number of young patients did drink or smoke^{6,12,13,34} exposure time appears to be too short to be solely responsible for malignant transformation, making these factors less likely to play a significant role in the carcinogenesis of tongue lesions in young patients. This would thereby suggest that other etiologic factors, such as immune deficiency^{35,36} genetic factors,³⁷ diet³⁸⁻⁴⁰ or viruses,^{41,42} may be responsible for malignant transformation in the younger population. Hence because, prognosis is about the same between younger and older patients but disease etiology is unlikely to be the same, we recommend that young patients be assessed rapidly and be offered aggressive treatment.

CONCLUSION

The prognosis of younger and older patients has been the subject of much debate in the literature. Our study suggests that there is no significant prognostic difference between the two groups, but disease etiology is likely different, we recommend prompt and aggressive treatment of young patients.

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