Management of the node negative early carcinoma tongue

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Abstract

Objective To determine the role of thickness of the primary lesion in early Squamous Cell Carcinoma (SCC) of the oral tongue for decision-making regarding the management of possible occult cervical node metastases.

Setting Tertiary referral centre

Patients Patients who were treated by the authors for early (T1, T2) primary lesions in the oral tongue in two malignancy treatment centres of the Armed Forces Medical Services were included in this prospective study. Where the primary lesion was less than 04 mm in depth, the neck was not addressed electively. Those who developed nodal disease in the neck on follow up were subjected to comprehensive neck dissection. In those patients where the tumour thickness was more than 04 mm, the neck was addressed with at least a supra-omohyoid neck dissection. Post-operative radiotherapy was given as per standard indications. The patients were followed up as per standard protocol.

Results Disease free survival rate achieved was 86% and this compares well with survival rates achieved by other workers.

Conclusion Treatment of neck nodes in early (T1,T2) SCC of the oral tongue can be expectant in cases where tumour thickness is less than 04 mm, but where it is more than 04 mm elective treatment of the neck is recommended.

Keywords Carcinoma Tongue · Elective Neck Dissection · Thickness of lesion

Introduction

Many issues remain unresolved in the management of the node negative early carcinoma of the oral tongue. The effort has been to evolve a treatment paradigm that balances preservation of function in the neck with prevention of future morbidity or mortality. Thus unnecessary treatment of the neck should be avoided while at the same time cure rates should not be sacrificed. The thickness of the primary lesion has been considered an important factor determining the need to address the neck electively in these cases.

This study was carried out to examine the importance of tumour thickness in determining the treatment of possible occult neck nodes in early squamous cell carcinoma (SCC) of the oral tongue. The study was carried out in two malignancy treatment centres of the Armed Forces Medical Services.

Patients and methods

Patients with histologically proven SCC of the anterior two-third (oral) tongue, clinically staged T1 or T2 N0 M0, who were treated by the authors from 2002–2005 have been included in this study. Patients who had undergone any prior surgery or radiotherapy were excluded from the study. All tumours were staged according to the TNM classification (AJCC - 2002) after detailed clinical evaluation, appropriate imaging of the primary and the neck, and other investigations.

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A total of 21 patients were treated during this period. There were 14 males and 7 females. The ages ranged from 29 years to 65 years. All patients underwent partial glossectomy through a per-oral approach (Fig. 1). Wherever appropriate a wedge excision oriented in transverse fashion rather than longitudinal was performed. This technique avoids an elongated narrow tongue and gives a fore-shortened tongue which is functionally adequate and visually more normal-looking. Adequacy of mucosal margins was confirmed intraoperatively by frozen section examination.

In those cases where the thickness of the primary lesion was clinically determined to be less than 04 mm in depth, the neck was not addressed electively. Where the thickness was clinically determined to be more than 04 mm, a Supraomohyoid Neck Dissection (SOHND) was performed electively (Fig. 2). The nodes were checked by frozen section and if any positive nodes were found a comprehensive neck dissection (Modified Radical Neck Dissection preserving the Spinal Accessory Nerve) was completed in the same sitting. In case the depth of tumor invasion was doubtful we withheld elective treatment of the neck till histopathological confirmation. In such cases with proven depth of tumour infiltration more than 04 mm, an interval elective neck dissection was performed after 06–10 weeks. In those patients whose depth of tumour infiltration was less than 04 mm, the neck was not electively treated. They were followed up bi-monthly. Those who developed nodal disease in the neck were then subjected to comprehensive neck dissection.

Post-operative radiotherapy was usually given if there was histopathological evidence of extra-nodal extension, multiple nodes in the neck, peri-vascular or peri-neural invasion. Patients received 5000–6000 rads by conventional fractionation during a 5–6 week period to the primary site and neck.

A total of six out of the 21 patients underwent post-operative radiotherapy. All patients were advised regular follow-up. The mean follow-up achieved was 3.3 years.

Results

There were 09 patients with T1 tumours and 12 patients with T2 tumours. Of the T1 tumours three were clinically judged to be more than 04 mm in depth and elective SOHND was performed along with excision of the primary lesion. All these node dissections were negative on frozen section. Histopathologically two more tumours were shown to be more than 04 mm thick. An interval SOHND was performed in these patients. One of these showed a positive node on frozen section, and a MRND-1 was completed. Of the 12 T2 tumours eight were judged to be more than 04 mm thick clinically and elective SOHND performed. Of these, three showed positive nodes on frozen section and MRND-1 was completed in these patients. Of the other four

T2 tumours, one was shown to be more than 04 mm thick on histopathology. An interval SOHND was performed in this patient. Frozen section examination showed positive nodes on frozen section, necessitating a MRND-1. One case developed nodal metastases within one year and was managed with a MNRD-1. Histopathologically there were multiple level positive nodes/ extra nodal extension in five

Fig. 1 Partial Glossectomy completed

Fig. 2 SOHND completed

Table 1 Clinical and Pathological Staging of Patients

Staging		Clinical	Pathological
T	1	09	08
	2	12	13
N	0	0	17
	1	0	1
	2	0	3

Table 2 Patients free of disease on last follow-up

Staging	No of Patients treated	No of Patients alive, free of disease
pT1N0	07	07
pT1N1	02	01
pT2N0	07	07
pT2N1	02	01
pT2N2	03	02
Total	21	18

out of the six cases who underwent MRND, and post-operative radiotherapy was given in these cases.

The clinical and pathological staging of the patients are as shown in Table 1. The numbers of patients alive and free of disease on last follow-up, as per pathological staging, are as shown in Table 2.

One patient (pT2N1) developed pulmonary metastases within one year and died. Two patients (pT1N1 and pT2N2) developed local recurrence and could not be salvaged. Thus there was an overall survival of 86 % of patients with this protocol.

Discussion

The proper treatment of the N0 neck in the head and neck remains a matter of controversy and different head & neck surgeons follow different protocols [1]. Head and neck squamous carcinoma is a locally aggressive disease. Cervical node metastases increase the risk of locoregional recurrence as well as distant metastatic spread, and correlates with a 50% decrease in survival [2]. Treatment of the N0 neck is considered to be justifiable if the risk of occult disease is 20% or greater. When the primary disease is adequately controlled, elective neck irradiation and elective neck dissection are equivalent in the control of subclinical neck disease. However it is preferable to treat the primary and the neck with a single modality whenever possible.

The rate of occult cervical nodal metastases in carcinoma of the oral tongue has been reported at 21% to 42% [3,4,5]. Therefore many workers have advocated elective treatment of the neck in this situation [4,6]. A multivariate model for estimation of an increased probability of occult

neck disease included greater tumor thickness, presence of perineural invasion, infiltrating-type invasion front, poorly differentiated tumors, and T2 stage [7].

Tumour depth of infiltration of greater than 04 mm indicates a greater potential for lymph node metastases [8,9]. This has been substantiated by the results of various workers, though some have fixed the cut-off point at 05 mm [10].

The concept of 'skip metastases' involving level 4 nodes without involving the higher echelon nodes has been put forward by some workers, with the recommendation that an 'extended SOHND' (removing levels 1 to 4) is required [11,12]. However others have questioned this concept [13]. We have not done 'extended SOHND' in our series.

In our series we have followed a uniform protocol to address this problem. In all patients with a primary tumour thickness of more than 04 mm, the neck was addressed with at least a SOHND. If cervical nodal metastases were detected in the SOHND a comprehensive neck dissection was performed (in all these cases we could do a MRND-preserving SAN). We could achieve an overall survival rate of 86% in our patients and this compares well with results published by other workers [14].

Some workers have attempted to do a Sentinel Node Biopsy to improve the staging accuracy in these node negative patients [15]. We have not attempted this technique, as we believe that that SOHND is more definitive as a crucial staging, and the morbidity of SOHND is acceptable.

In the management of the node negative early carcinoma of the oral tongue, loco regional recurrence is largely an avoidable disaster. Balancing the requirement to treat any occult metastatic disease in the neck with the need to avoid unnecessary morbidity to the patient remains a clinical challenge to the head & neck oncologist. We recommend the above protocol to achieve best results in this endeavour.

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