Research Article

Skin involvement as a predictor of contralateral nodal metastasis in buccal mucosa cancers

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ABSTRACT

Context: In view of the low incidence of contralateral nodal metastasis and increase in the morbidity, the opposite neck is not routinely addressed. However, contralateral nodal metastasis is seen frequently in a certain group of patients. Identifying those factors associated with higher chances of contralateral nodal metastasis may help in optimizing the treatment. **Aims:** The aim of this study was to identify prognostic factors associated with contralateral nodal metastasis in cases of buccal mucosa cancers. **Subjects and Methods:** A retrospective study of six patients with squamous cell carcinoma of buccal mucosa cases in which lesions were reaching or crossing midline were included in this study. All underwent surgery as a primary modality of treatment and had bilateral neck dissection. **Results:** Among six patients, ipsilateral nodal metastasis was seen in 5 patients and 1 had bilateral neck node metastasis, and none of the patients had isolated contralateral nodal metastasis. Skin involvement was seen in four patients. **Conclusion:** contralateral nodal metastasis in the absence of ipsilateral nodal metastasis is very rare. Skin involvement and frozen section of ipsilateral neck dissection specimen can be an important pointer for addressing contralateral neck.

KEY WORDS: Buccal mucosa, Contralateral neck nodes, Predictors, Skin involvement

INTRODUCTION

Nodal metastasis in patients with oral squamous cell carcinoma (SCC) is related to poor prognosis.[1] An elective ipsilateral neck dissection is usually recommended in all cases.[2] Contralateral nodal metastasis is occasionally seen and prognosis of those cases is poorer.[3,4] In view of the low incidence of contralateral nodal metastasis and the apparent increase in the morbidity and patient discomfort, the contralateral neck is not routinely addressed. However, contralateral nodal metastasis is seen frequently in a certain group of patients. Fan *et al*.[5] concluded that contralateral neck dissection is required when tumors cross the midline, primary tumor >3.75 mm thick, advanced tumor, tumor arising from the floor of mouth or base tongue, and presence of multiple ipsilateral nodal metastasis. However, literature on contralateral nodal metastasis for a particular subsite of oral cavity such as buccal mucosa is limited, the purpose of the study is to identify those factors associated with bilateral or contralateral nodal metastasis. This may help in optimizing the management of the contralateral neck in buccal mucosa cancers.

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SUBJECTS AND METHODS

The medical records of patients with pathologically proven SSC of buccal mucosa operated between 2014 and 2018 were screened for this study. All patients had predominately lateralized lesion identified based on the following eligibility criteria: (1) Biopsy confirmed SSC of buccal mucosa, (2) undergone bilateral neck dissection, and (3) surgery as the primary modality of treatment. All patients underwent contrast-enhanced computed tomography scan for staging the disease. All these patients underwent bilateral neck dissections since they had lesions which were reaching or crossing midline. Six patients were included in this study as per the eligibility criteria. The type of neck dissection performed was modified radical neck dissection (in two patients) and supraomohyoid neck dissection (in four patients). If nodes are positive in supraomohyoid neck dissection, clearance of levels IV and V is done during the same surgery. However, when reconstruction with pectoralis major myocutaneous flap was performed, modified radical neck dissections

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were done upfront. We have given post-operative radiotherapy as per the institutional protocol for all T3/T4 tumors as per the American Joint Committee on Cancer (AJCC) classification, patients with close involved margins, a higher grade of the tumor, and nodal metastasis. Chemotherapy was added to radiotherapy when margins were positive or when nodes had extranodal spread. Ajduvant radiotherapy was given in two patients; chemoradiotherapy was given in four patients.

RESULTS

There were five men and one woman. The average age ranging of 40–65 years [Table 1]. Based on the AJCC staging system all patients had T4 lesion. Among these six patients who underwent bilateral neck dissection ipsilateral nodal metastasis was seen in five patients and one had bilateral nodal metastasis. The thickness of the primary lesions ranged from 40 to 60 mm. As peer histopathology report, 0 cases were well differentiated, two were moderately differentiated, and four were poorly differentiated, one cases had perineural invasion and none had lymphovascular embolization. Skin involvement was seen in four patients and five patients had bone involvement. While most of these patients were treatment naive at clinical presentation, three patients received neoadjuvant chemotherapy and two had concurrent chemoradiotherapy before surgery. Multiple positive nodes were seen in four patients. Maximum the presence of ipsilateral nodal metastasis, grade of tumor and skin involvement was significantly associated with contra lateral nodal metastasis.

DISCUSSION

This study is on a group of patients who are expected to have a higher percentage of contralateral nodal metastasis due to the extent of lesions beyond midline and the majority having pathologically advanced disease. We found the incidence of contralateral nodal metastasis in skin involvement cases. Among the six patients with ipsilateral nodal metastasis, four had contralateral nodal metastasis which is similar to that reported in literature. Woolger also reported a higher incidence of contralateral nodal metastasis (18.18%) among the 143 cases showing ipsilateral node positivity. Singh *et al*.[7] showed contralateral node positivity in 69 patients (41.5%) among 166 tongue cancer cases having ipsilateral nodal metastasis interesting, in patients with clinically no status. Although the percentage of ipsilateral nodal metastasis is 30.4%, the percentage of contralateral nodal metastasis is only 9.7% obviously, routine contralateral neck dissection in this category of patients may be unnecessary. Kurita *et al*.[3] on multivariate analysis also demonstrated that ipsilateral lymph node metastasis ($P < 0.01$) along with T-stage ($P < 0.01$) and histopathology grading ($P < 0.05$) were significant independent predictors for contralateral lymph node metastasis. Singh *et al*.[7] on multivariate analysis showed pathological T-stage and the presence of ipsilateral nodal metastasis as predictors of contralateral nodal metastasis in tongue cancers which are reaching or crossing midline. In the absence of ipsilateral nodal metastasis, contralateral nodal metastasis is extremely rare; we found only no patients with isolated contralateral nodal metastasis. As mentioned earlier, we notice that the chance of contralateral nodal metastasis in patients with clinically no status is rare, and the presence of ipsilateral nodal metastasis is a major factor that increases the risk of contralateral nodal metastasis in this group. Kurita *et al*.[3] in a retrospective study of 202 patients with SSC of the oral cavity did not found tumor extension across the midline as an independent and significant predictor for contralateral nodal metastasis. We found ipsilateral nodal metastasis and skin involvement as an independent predictor of contralateral nodal metastasis.

Table 1: Distribution of clinicopathological factors

Number of patients[6]	
Age (Mean)	50
Sex	
Male	5
Female	1
PNI	
Yes	1
No	5
Grade (WD, MD, PD)	
WDSCC	0
MDSCC	2
PDSCC	4
Skin involvement	
Yes	4
No	2
Bone Involvement	
Yes	5
No	1

WD=Well-differentiated; MD=Moderately differentiated; PD=Poorly differentiated; SCC=Squamous cell carcinoma; PNI=Perineural invasion

Skin involvement was very significant independent factor predicting the risk of contralateral nodal metastasis. In our study, four patients had skin involvement; among them, four patients had contralateral nodal metastasis. Oral cavity SCC had a high incidence of cervical micrometastasis, and bilateral metastasis is seen frequently due to the rich lymphatics in the submucosal plexus, which freely communicate across the midline.[4] Direct skin involvement is also a prognostic sign of poor outcomes as skin involvement will upstage the disease to T4 as per the AJCC staging system.

CONCLUSION

In cases of lateralized buccal mucosa cancers where lesions reach or cross midline, the presence of skin involvement is an important factor influencing

contralateral nodal metastasis. Skin involvement has emerged as an important prognostic factor for nodal metastasis in this study. Further research is needed to conclude whether contralateral neck dissection is required.

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