



Importance of elective neck dissection in cN0 maxillary squamous cell carcinoma

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We read with interest, in the online issue of *Journal of the Korean Association of Oral and Maxillofacial Surgeons*, the recently published, original article by Park et al.¹ titled “Is elective neck dissection needed in squamous cell carcinoma of maxilla?” This article was well written and provided a great deal of information regarding the incidence of occult cervical metastasis (OCM) of clinically node-negative neck (cN0) in maxillary squamous cell carcinoma (MSCC). However, we would like to suggest a few additional items based on the authors’ clinical experiences and recently updated articles.

In their article, Park et al.¹ concluded that the incidence of OCM of MSCC was not high enough to recommend elective neck dissection (END). For survival of cN0 patients, local control of the primary tumor is more important than the modality of neck management. Observation of cN0 neck is recommended when early detection of regional recurrence is possible, irrespective of the site or T stage. This article was well written and provided a great deal of information for the management of cN0 MSCC patients; however, we have some comments based on recent reviews. Four main commentaries regarding the main cN0 management in MSCC patients should be considered for the more careful and accurate management of these patients.

First, Park et al.¹ concluded that the incidence of OCM in MSCC is not high enough to recommend END, showing an incidence of 14.9% (10/67). However, an arithmetic

proportion of 14.7% is not ignorable. Many authors have published that the overall OCM was 13.7% to 42.9% according to T1 stage in MSCC²⁻⁴. In a retrospective cohort study of 62 patients, Yang et al.³ showed that OCM of MSCC in tumor stages T2 to T4 occurred in 20% to 40% of patients, in whom END is recommended for management. Postoperative radiotherapy can improve the prognosis and decrease the recurrence of squamous cell carcinoma (SCC) after the first premolar plane area.

Secondly, the authors demonstrated that the five-year overall survival rate (SR) was 51.9% for the END group and 74.0% for the non-END group, and the SR of treatment for regional recurrence was high at 71.4% in the five patients who were treated successfully. However, among the 12 patients with local recurrence, treatment for recurrence was successful for only four patients (33.3%). Two patients with locoregional recurrence died of uncontrolled disease; thus, the success rate of recurrence treatment was 0%. Hence, local control of the primary tumor is more important than the modality of neck management for survival of cN0 patients. When early detection of regional recurrence is possible, observation of cN0 neck is the choice irrespective of the site or T stage of MSCC.

Based on these findings, the authors analyzed the management of cN0 MSCC patients on a “watch and wait” basis due to its low metastasis rate and likelihood of successful management of locoregional recurrence.

Most information about OCM in MSCC patients has been published since 2010. Some results indicate that the metastatic risk is much higher than the expected risk in oral squamous cell carcinoma (OSCC), and END should be recommended for these patients. However, these issues must be approached cautiously, as treatment protocols are still controversial. Most of the studies are retrospective, with relatively small sample sizes; studies with high levels of evidence, such as prospective studies and clinical trials, are lacking. The development

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of evidence-based medicine, including meta-analysis, has become increasingly popular in clinical studies⁵.

Third, the authors also emphasized that observation of cN0 neck is recommended when early detection of regional recurrence is possible due to complete local control experiences. Unlike the reference article⁶ that reported a 100% success rate of cervical salvage after early detection irrespective of T stage, Feng et al.⁶ concluded that END should be recommended as the preferred management for stage T2 to T4 SCCs of the maxillary gingiva, and observation with a careful monitoring strategy may be an acceptable alternative to END for cN0 neck of T1 tumors. The Feng et al.⁶ believe that the key factor in early detection of regional recurrence is patient education with periodic follow-up. However, it is already well known that the T1 stage of MSCC has a low risk of nodal metastases, whereas stage T2 to T4 tumors have an obvious propensity for early nodal metastases.

In the authors' cited references, there are few articles related to no recommendation of END in the whole cN0 of MSCC. From 2010 to 2016, many articles analyzed clinical outcomes and reviewed some meta-analyses based on the pathologic stage, including T classification and histopathologic differentiation, rather than successful locoregional management. From a systematic review, designed in accordance with the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) statement, Tang and Leung⁴ emphasized that the overall risk of OCM was 23.2% in non-END, which was 3.4 times higher than that in the END group (6.8%). The five-year SR was higher in those who had an END (80.3%) compared to those who did not receive an END (67.4%). Overall, 14.1% of the cases with cN0 in MSCC presented with positive nodes in pathological specimens after END. The risk of OCM in cN0 MSCC cases with pathological stage pT1, pT2, pT3, and pT4 was 11.1%, 12.1%, 20%, and 36.1%, respectively. Thus, the authors concluded that END is recommended in patients with cN0 MSCC, especially those in stage T3 or T4 case⁴. In a single center retrospective study with 86 cN0 MSCC patients, Poeschl et al.⁷ found that, with overall tumor stages combined (T1-T4), END did not significantly improve overall SR and did not prevent regional recurrence in cN0 MSCC patients. However, there was a clear tendency toward improvement of overall survival in the locally advanced T4 tumors END group, suggesting that END can be recommended for T4 stage patients⁷. In another retrospective analysis of 100 cases⁶ and a separate meta-analysis⁵, Zhang and colleagues^{5,8} showed that the total metastatic rate was 34.0%, and the occult metastatic rate was 27.5%. Positive

lymph nodes were mostly detected at levels I-III. Advanced stage (T3/4) was significantly correlated with a higher metastasis rate. The pathological grade also showed a significant relationship with metastasis. Twenty-four patients presented with regional recurrence, and END could significantly reduce the recurrence rate. Selective neck dissection from level I to III is recommended for T3/4 stage cN0 patients, especially those with gingival-buccal sulcus involvement of MSCC.

Fourth, the term "maxillary sinus squamous cell carcinoma" was used in this article, but the authors included maxillary gingiva cancer and maxillary sinus cancer as part of the retrospective study groups.

As is known, SCC that arises in the maxillary sinus can be considered a paranasal sinus disease that behaves differently from SCC of the maxillary alveolus and hard palate, which are considered MSCC⁹. According to cancer origin in OSCC, maxillary sinus origin is not itself a risk factor for a poorer prognosis; rather, these tumors are more likely to be advanced at the time of diagnosis and to be incompletely resected due to the complex anatomy of the midface, including the maxillary sinus⁹. Thus, for more accurate and statistical analysis, MSCC could be divided as maxillary sinus origin and maxillary gingiva or alveolus origin. END has also been decided cautiously in maxillary sinus origin cancer by Brown et al.¹⁰, in maxillary gingival cancer by Mourouzis et al.¹¹, and in all T2 to T4 tumors in the maxilla^{3,12}.

From the above comments, we suggest that END in cN0 MSCC patients should be approached cautiously based on several relevant factors.

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Authors' Contributions

I.J.K. participated in reference collections, S.M.K. performed the study design and coordination. All authors read and approved the final manuscript.

Acknowledgements

This study was supported by Basic Science Research Program through the National Research Foundation of Korea funded by the Ministry of Education (2017R1D1A1B04029339).

Conflict of Interest

No potential conflicts of interest relevant to this article were reported.

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