

What is the Role of Neck Dissection in Patients with T2 N0 Tumors of Lower Lip?

T2 N0 Alt Dudak Tümörü Olan Hastalarda Boyun Diseksiyonunun Rolü Nedir?

*Gaye TAYLAN FİLİNTE, MD, *Hüseyin KARANFİL, MD,
*Nujen Gülçin AYÇİÇEK ÇARDAK, MD, **Melin ÖZGÜN GEÇER, MD

* Dr. Lütfi Kırdar Kartal Research and Training Hospital, Clinic of Plastic, Reconstructive and Aesthetic Surgery,
** Dr. Lütfi Kırdar Kartal Research and Training Hospital, Clinic of Pathology, İstanbul

ABSTRACT

Objective: The indication of neck dissection in treatment of T2 N0 lower lip cancer is controversial. In this study we compared the patients with T2 lower lip cancers who underwent neck dissection and those who did not, and discussed the results.

Material and Methods: Between 1998 and 2007, 35 patients who had T2 N0 lower lip cancers had been operated in our clinic. Twenty-six patients were male and 9 were female. The mean age was 65 years. Eighteen patients underwent supraomohyoid neck dissection while 17 were followed up without neck dissection. The results were analyzed statistically with the student's t-test.

Results: Postoperative lymph node metastasis was detected in 2 patients who had neck dissection and in 3 patients who didn't have neck dissection. The occult metastasis rate in clinically N0 patients was found to be 14,2%. The survival rate in the patients who had neck dissection was 94,4% versus 88,3% in those who did not have.

Conclusion: Supraomohyoid neck dissection provides pathological staging and it is found to be curative in patients with occult metastasis.

Keywords

Lower lip cancer; supraomohyoid neck dissection; staging

ÖZET

Amaç: T2 N0 alt dudak kanserlerinin tedavisinde boyun diseksiyonunun yeri tartışmalıdır. Bu çalışmada boyun diseksiyonu yapılan ve yapılmayan T2 alt dudak kanserli hastaları karşılaştırarak sonuçları tartıştık.

Gereç ve Yöntemler: 1998 ve 2007 yılları arasında kliniğimizde T2N0 alt dudak kanserli 35 hasta opere edildi. Yirmialtı hasta erkek, 9 hasta kadındı. Ortalama yaş 65 idi. Onsekiz hastaya supraomohyoid boyun diseksiyonu yapılırken, 17 hasta boyun diseksiyonu yapılmadan takip edildi. Sonuçlar istatistiksel olarak "t test" ile analiz edildi.

Bulgular: Postoperatif lenf nodu metastazı, diseksiyon yapılan 2 hastada ve diseksiyon yapılmayan 3 hastada tespit edildi. Klinik olarak N0 olan hastalarda gizli metastaz oranı %14,2 olarak saptandı. Boyun diseksiyonu yapılan hastalarda yaşam oranı %94,4 iken yapılmayan hastalarda %88,3 olarak belirlendi.

Sonuç: Supraomohyoid boyun diseksiyonu patolojik olarak evrelemeyi sağlaması yanında gizli metastazı olan hastalarda tedavi edicidir.

Anahtar Sözcükler

Alt dudak kanseri; supraomohyoid boyun diseksiyonu; evreleme

Çalışmanın Dergiye Ulaştığı Tarih: 19.03.2012

Çalışmanın Basıma Kabul Edildiği Tarih: 15.01.2013



Correspondence

Gaye TAYLAN FİLİNTE, MD

Dr. Lütfi Kırdar Kartal Research and Training Hospital,
Clinic of Plastic, Reconstructive and Aesthetic Surgery Clinic,

Gozenc sok. Babadan apt.

No: 2/16 Erenkoy, İstanbul/Turkey

E-mail: gayetaylan@yahoo.com

INTRODUCTION

Lip cancers constitute 25% of oral cavity cancers in many regions of the world and is the most commonly encountered cancer of the oral cavity.¹ Smoking, alcohol use, chronic immunosuppression, and prolonged exposure to sunlight are among the etiologic factors in most of the patients.² Leukoplakia, hyperkeratosis and actinic changes are usually associated with sunlight exposure and are precancerous lesions of lip cancers.³

Lip cancers are predominantly observed on lower lip (91-97%). The upper lip and the commissure follow with 2-8 % and 1%, respectively. The most frequently seen tumor type is squamous cell carcinoma (SCC).⁴ Other malignant tumors of the lip are basal cell carcinoma (BCC), adenoid cystic carcinoma, and mucoepidermoid carcinoma.³

Lip cancers are slowly growing tumors and rates of lymph node metastasis vary between 3 and 29%. Lymph node metastases are demonstrated at the nodes of the first level, and they move to the lower levels later on.^{2,5-8}

The five-year life expectancy of small and noninfiltrative lesions are above 90%. When neck metastasis occurs this rate decreases to 25 to 50 %.^{7,9,10}

The surgical therapy of primary T2 N0 tumors is conventionally standardized. However, various controversies exist considering the procedure to neck.⁷⁻¹¹

MATERIAL AND METHODS

Thirty-five T2 N0 patients with lower lip cancer operated in our clinic between 1998 and 2007 were investigated retrospectively. The follow-up periods are between 1 to 10 years (mean 4 years). Twenty-six male and 9 female patients with a mean age of 65 years were enrolled in the study. Supraomohyoid neck dissections were performed in 18 patients. The other 17 patients were followed up without neck dissection but with clinical examinations. The mean tumor diameter was 2,7cm in the neck dissection group and 2,3cm in the follow-up group.

RESULTS

Two patients (11,1%) with supraomohyoid neck dissections have demonstrated occult neck metastasis (N+, histopathological) (Table 1). In the follow-up group, without neck dissection, there were 3 patients (17,6%) with neck metastasis. Five of 35 patients (14,2%) had metastasis in neck. One patient from the neck dissection group deceased (5,55%). Two patients deceased from the follow-up group (11,7%) (Table 2).

When neck metastasis cases were investigated, no differences considering differentiation, invasion depth, perineural invasion and the diameter of the tumor were found between the patients with metastasis and those without (Table 3).

Table 1. Neck metastasis rates in patients with T2 N0 tumors.

T2 N0 patients	Supraomohyoid dissection group	Follow-up group	Total
Histopathologic N+ or neck metastasis during follow-up	2 (%11,1)	3 (%17,6)	5 (%14,2)
Histopathologic N- and no metastasis during follow-up	16 (% 88,9)	14 (%82,4)	30 (%85,9)
Total	18	17	35

Table 2. Comparison of survival rates between the neck dissection group and the follow-up group.

	Patients with supraomohyoid neck dissection	Patients with only clinical follow-up	Total
Survival rates (1-10 years)	17 (% 94,45)	15 (% 88,3)	32 (%91)
Death rates (1-10 years)	1 (% 5,55)	2 (%11,7)	3 (%9)
Total	18	17	35

Table 3. Comparison between patients with and without neck metastasis regarding microscopic depth, perineural invasion, tumor diameter and tumor differentiation.

	Microscopic depth	Perineural invasion		Mean tumor diameter	Differentiation		
		+	-		Well	Moderate	Poor
Neck metastasis +	1,1cm	4 (% 80)	1	2,4 cm	-	5	-
Neck metastasis -	0,8	10 (%33)	20	2,5 cm	14	15	1

DISCUSSION

Lip cancers demonstrate good prognosis due to early diagnosis regarding tumor localization and decreased rate of lymph node metastasis (12,13). However, patients with regional lymph node metastasis have poor prognosis.¹²⁻¹⁶ Various methods to detect regional metastases exist with low accuracy levels.^{17,18} Fine needle aspiration cytology,¹⁹ and sentinel lymph node biopsy^{18,20} are performed in head and neck cancers in order to achieve an accurate staging. Unfortunately, the results are still considered as uncertain and they are not widely used. The best method to detect regional lymph node metastasis is selective lymph node dissection.²¹ Selective lymph node dissection is the standard elective surgical operation in head and neck cancers with high risk of occult metastasis (20%).

Lymph node metastasis of the lower lip cancers are encountered initially at the nodes of the first level (submandibular and submental), and they progress to the lower levels later on.^{2,5-8} Metastases rarely reach level 5.²² Supraomohyoid dissection including levels 1 to 3, is the best option for selective lymph node dissection.^{13,16,23-27} It is considered as the best way to treat patients with lower lip cancers without neck metastasis but with a high risk to develop it.^{13,24,25}

Regional metastasis rates of T2 tumors are reported to be between 11 and 35%.¹⁵ Our study demonstrated that, occult metastasis prevalence was 11,1%. Delayed metastasis rate was demonstrated to be 30 to 40% in previous studies²⁸ and was 17,6% in our study.

Prognosis of patients without signs of clinical neck metastasis (T2 N0) are influenced by several factors: general health status, keeping up the visits, the patients' consent for neck operation, tumor size, and tumor localization. Elective neck dissections may be performed for staging or investigation of occult metastases.^{7-11,28}

Barrellier has reported low survival rates in patients with delayed neck metastasis and advised servical exploration of all tumors with T2 and T3, unless a contradiction exists.²⁹ Cruse and Radocha have offered suprahyoid dissection in all tumors of T2 N0 or of larger sizes.³⁰ Eggert has advocated suprahyoid lymph node dissection in all tumors of lower lip larger than 1 cm.³¹

Kowalski has reported that supraomohyoid dissection is curative for patients who are N1 in level 1.²⁵ Byers has found that when postoperative radiotherapy is performed in oral and oropharyngeal cancers after supraomohyoid dissections, the recurrence rate decreases to 5,6% from 37,5%.²⁷ Gooris demonstrated a recurrence rate of 9% in lower lip cancers with radiotherapy performed after supraomohyoid dissection.¹³

In our study, occult metastases were detected in 2 clinically N0 patients who have had neck dissection. No recurrence was observed after radiotherapy. Three of the patients without neck dissection developed lymph node metastasis and 2 of them deceased.

The histopathological stage of the tumor, existence of perineural invasion, and tumor depth of the patients with metastasis were similar in our study compared with the previous studies.^{12,15,20,32} However, the difference from these studies was that the size of the tumor was similar in both group of patients who had neck metastasis and who had not.

CONCLUSION

Our study demonstrated that occult metastasis rate was 11,1% in T2 N0 tumors. The differentiation grade, existence of perineural invasion, and microscopic thickness of the tumor have increased this rate. There was no relation between tumor size and neck metastasis. Although there was no difference between

the survival rates ($p > 0,5$), the death rate was lower in patients who had dissection with even larger tumor sizes. These findings suggest that it is advisable to perform supraomohyoid neck dissection in patients with

T2 N0 lower lip tumors with increased risk of occult metastasis.³³ Supraomohyoid lymph node dissection is curative for patients who have occult metastasis in level 1.

REFERENCES

1. Myers EN, Suen JY. Head and neck neoplasms. Philadelphia: Saunders; 1996. p. 294-320.
2. Baker SR, Krause CJ. Carcinoma of the Lip. *Laryngoscope*. 1980 Jan;90(1):19-27.
3. Million RR, Cassisi NJ, Mancuso AA. Oral Cavity. In: Million RR, Cassisi NJ, eds. Management of the Head and Neck Cancer: A Multidisciplinary Approach. 2nd ed. Philadelphia: JB Lippincott; 1994. p. 321-400.
4. Sharma PK, Schuller DE, Baker SR. Malignant Neoplasms of the Oral Cavity. In: Cummings CW, Fredrickson JM, Harker LA, Krause CJ, Schuller DE, eds. Otolaryngology Head And Neck Surgery. St. Louis: Mosby; 1998. p. 1143-4.
5. Dinehart SM, Pollack SV. Metastases from squamous cell carcinoma of the skin and lip. *J Am Acad Dermatol* 1989; 21(2 Pt 1):241-8.
6. Jorgensen K, Elbrond O, Andersen AP. Carcinoma of the lip. A series of 869 cases. *Acta Otolaryngol* 1973;75(4): 312-3.
7. Rowe DE, Correl RJ, Day Jr LC. Prognostic factors for local recurrence, metastasis, and survival rates in squamous cell carcinoma of the skin ear and lip. *J Am Acad Dermatol* 1992;26(6):976-90.
8. Luce EA. Carcinoma of the lower lip. *Surg Clin North Am* 1986;66(1):3-11.
9. Santamaria S, Valentini V, Mercurio A, Ventucci E, Del Deo V. Fattori prognostici nel trattamento chirurgico dei carcinomi squamocellulari del labbro inferiore. *Riv It Chir Max-Fac* 2000;3:21-4.
10. Heller KS, Shah JP. Carcinoma of the lip. *Am J Surg* 1979; 138(4):600-3.
11. Galletti R, Belli R, Monazini D. Terapia delle adenopatie cervicali nel tumore del labbro e dell'orofaringe. *Min Stomatol* 1989;38:1129-35.
12. Zitsch RP, Lee BW, Smith RB. Cervical lymph node metastases and squamous cell carcinoma of the lip. *Head Neck* 1999;21(5):447-53.
13. Gooris PJJ, Vermey A, Visscher JGAM, Burlage FR, Roodenburg JLN. Supraomohyoid neck dissection in the management of cervical lymph node metastases of squamous cell carcinoma of the lower lip. *Head Neck* 2002;24(7):678-83.
14. Baker SR. Current management of cancer of the lip. *Oncology (Huntingt)* 1990;4(9):107-20.
15. De Visscher JG, van den Elsaker K, Grond AJ, van der Wal JE, van der Waal I, et al. Surgical treatment of squamous cell carcinoma of the lower lip: evaluation of long-term results and prognostic factors - a retrospective analysis of 184 patients. *J Oral Maxillofac Surg* 1998;56(7):814-20.
16. Robbins KT, Medina JE, Wolfe GT, Levine PA, Sessions RB, Pruet CW. Standardizing neck dissection terminology. *Arch Otolaryngol Head Neck Surg* 1991;117(6):601-5.
17. Kowalski LP, Carvalho AL. Feasibility of supraomohyoid neck dissection in N1 and N2a oral cancer patients. *Head Neck* 2002;24(10):921-4.
18. Shoaib T, Soutar DS, MacDonald DG, Camilleri JG, Dunaway DJ, Gray HW, et al. The accuracy of head and neck carcinoma sentinel lymph node biopsy in the clinically N0 neck. *Cancer* 2001;91(11):2077-83.
19. Van-den-Brekel MWM, Casteligins JA, Stel HV, Luth WJ, Valk J, van der Waal I, et al. Occult metastatic neck disease: detection with ultrasound and ultrasound-guided fine needle aspiration cytology. *Radiology* 1991;180(2):457-61.
20. Altinyollar H, Berberoglu U, Celen O. Lymphatic mapping and sentinel lymph node biopsy in squamous cell carcinoma of the lower lip. *Eur J Surg Oncol* 2002;28(1):72-4.
21. Kowalski LP, Medina J. Nodal metastases-predictive factors. *Otolaryngol Clin North Am* 1998;31(4):621-37.
22. Davidson BJ, Kulkarny V, Delacure MD, Shah JP. Posterior triangle metastasis of squamous cell carcinoma of the upper aerodigestive tract. *Am J Surg* 1993;166(4):395-8.
23. Shah J. Patterns of cervical lymph node metastasis from squamous carcinomas of the upper aerodigestive tract. *Am J Surg* 1990;160(4):405-9.
24. Medina JE, Byers RM. Supraomohyoid neck dissection: rationale, indications, and surgical technique. *Head Neck* 1989;11(2):111-22.
25. Kowalski LP, Magrin J, Waksman G, Santo GF, Lopes ME, de Paula RP, et al. Supraomohyoid neck dissection in the treatment of head and neck tumours-survival results in 212 cases. *Arch Otolaryngol Head Neck Surg* 1993;119(9):958-63.
26. Spiro DS, Spiro HS, Shah J, Sessions RB, Strong EW. Critical assessment of supraomohyoid neck dissection. *Am J Surg* 1988;156(4):286-9.

27. Byers RM, Clayman GL, McGill D, Andrews T, Kare RP, Roberts DB, et al. Selective neck dissections for squamous carcinoma of the upper aerodigestive tract: patterns of regional failure. *Head Neck* 1999;21(6):499-505.
28. Zitsch RP. Carcinoma of the lip. *Otolaryngol Clin North Am* 1993;26(2):265-77.
29. Barrellier P, Kaluzinski E, Louis Y. [Epidermoid carcinoma of the lip. The contribution of surgery. Apropos of 429 cases]. *Rev Stomatol Chir Maxillofac* 1991;92(6):384-9.
30. Cruse CW, Radocha RF. Squamous cell carcinoma of the lip. *Plast Reconstr Surg* 1987;80(6):787-91.
31. Eggert JH, Dumbach J, Steinhauser EW. [Surgical therapy of regional lymph nodes in cancers of the lower lip]. *Hautarzt* 1986;37(8):444-9.
32. Carvalho AL, Kowalski LP, Borges JAL, Aguiar S, Magrin J. Ipsilateral neck cancer recurrences after elective supraomohyoid neck dissection. *Arch Otolaryngol Head Neck Surg* 2000;126(3):410-2.
33. Yilmaz S, Ercocen AR. Is elective neck dissection in T1-2, N0 patients with lower lip cancer necessary? *Ann Plast Surg* 2009;62(4):381-3.