The Role of Suprahyoid Dissection with Other Factors Influencing Recurrence, Metastasis and Survival in the Management of Lower Lip Cancers: A Retrospective Analysis of 472 Cases

ALT DUDAK KANSERLİ HASTALARDA SUPRAHYOİD DİSSEKSİYONLA NÜKS, METASTAZ VE YAŞAM SÜRECİNİ ETKİLEYEN DİĞER FAKTÖRLERİN ROLÜ: 472 OLGULUK RETROSPEKTİF ANALİZ

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Abstract

Objective: Lower lip squamous cell cancer is the most frequent tumor of the oral cavity. The effect of elective suprahyoid neck dissection was analyzed retrospectively in a group of patients.

Material and Methods: Patients with lower lip cancer (472 patients with T2-T3 tumors, clinically node-negative) who had undergone suprahyoid neck dissection between 1980-1997 in Ankara Oncology Hospital were analyzed retrospectively. For all cases, multivariate Cox regression analysis was utilized to evaluate factors effecting survival.

Results: There were 27 female and 445 male patients. The mean age was 49.4 years. Pathologic examination of the specimens showed that there were metastatic lymph nodes in 26 cases. In follow-up, local recurrences were seen in 24 and metastatic disease in 26 (19 regional, 7 distant) cases. Metastases were found to be the most effective factors affecting survival ($p< 0.05$). Cumulative survival rates were determined to be 96% for 5 years and 93% for ten years.

Conclusion: It would appear that suprahyoid dissection for lower lip cancer precipitated lower rates of regional metastases and higher survival rates in this study. However, the lack of a control group and randomization prevent a more definitive conclusion.

Key Words: Dissection, lip, squamous cell, neoplasms

Özet

Amaç: Alt dudak squamöz hücreli kanser, ağız boşluğunun en sık görülen tümörüdür. Bir grup hastada elektif suprahyoid boyun dissekiyonu etkileri retrospektif olarak analiz edildi.

Gereç ve Yöntemler: Ankara Onkoloji Hastanesi'nde 1980-1997 yılları arasında suprahyoid boyun disseksiyonu yapılan T2-T3 evresinde, klinik olarak lenf nodu negatif olan 472 alt dudak kanserli hasta retrospektif olarak incelendi. Tüm olgularda yaşam süresine etkileyen faktörler, çoklu varyasyon Cox-Regression analiziyle incelendi.

Bulgular: Yaş ortalması 49.4 yıl olan 27'si kadın, 445'i erkek olan 472 hasta incelendi. Patolojik incelemede 26 olgudaki doku örneklemesinde metastatik lenf nodu gösterildi. Takiben 24 olguda lokal rekürens görülürken 26 olguda metastatik hastalık (19 bölgesel, 7 uzak organ metastazı) gözlemlendi. Yaşam süresinde en etkili faktörlerin metastazlar olduğu bulundu ($p< 0.05$). Toplam yaşam süreci yüzdeleri 5 yıl için %96, 10 yıl için %93 olarak hesaplandı.

Sonuç: Bu çalışmada alt dudak kanserli hastalara uygulanan suprahyoid disseksiyonun bölgesel metastaz yüzdelerini düşürdüğü ve yaşam sürecini uzattığı görülmüştür fakat bir kontrol grubu olmaması ve çalışma grubunu rastgele seçilmiş olması bir sonuca varmamıza engel olmaktadır.

Anahtar Kelimeler: Disseksiyon, alt dudak, skuamöz hücreli kanser

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Lower lip squamous cell cancer is the most frequent tumor of oral cavity. Although the incidence varies with geographically it is estimated as 1.8-4.0 in 100.000.[1-3] The disease is especially seen in men and the men/women ratio is between 2.3-8.3.[4,5] It is considered as a geriatric age tumor and mostly seen between ages 50-80.[6] There is not adequate epidemiological data for risk factors, but traditionally smoking, alcohol, syphilis, sun light exposure and usage of spices are thought to be the cause of cancer.[3,6-8] Another important characteristics of the disease is the high incidence in lower socioeconomic groups.

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Lower lip cancers can be effectively treated with surgery. In T1-T2 tumor patients with no regional lymph node metastases 5 years survival is above 90%.[2] Surgical treatment modalities vary from wide local excision to radical neck dissection. Suprahyoid dissection as a surgical modality is considered as a staging procedure according to some authors.[9] In this study elective bilateral suprahyoid dissection in T2-T3 cancer of the lower lip were retrospectively analyzed in a large group of patients.

Material and Methods

There were 472 patients who recruited bilateral elective suprahyoid neck dissection for lower lip cancer between 1980-1991 in Ankara Oncology Hospital. Female/male ratio was 1/16.5 (27 female, 445 male), mean age was 49 (17-81) and 58% of patients were above 50 years. According to the tumor size there were 445 T2 and 27 T3 tumors and 437 of the tumors were ulcerated. And also 377 of all the patients were grade I, 86 of them were grade II, 5 of them were grade III and 4 patients were grade IV. Many of them (323) were living in villages at the time of diagnosis and dealing with agriculture. No clinically palpable lymph nodes were found in any patient. Tumor resection and reconstruction and bilateral elective suprahyoid neck dissection were performed synchronously in all patients. The resection of tumors performed with a margin of 1 cm at least from the tumor border, and specimens were examined with frozen-section in regard to achieve normal margins. Reconstruction of the lower lip primarily depended on the size of the defects: Primary closure, Abbé or Abbé-Estlander reconstruction, Bernard reconstruction and bilateral full-thickness nasolabial flaps are some the methods used in reconstruction of the lower lip. Mainly 4 lymph node groups dissected in suprahyoid neck dissection; submental (Level I), submandibular (Level I), upper (Level II) and middle (Level III) deep jugular nodes. The specimens were dissected unblock and the lymph node groups marked for histopathologic examination.

In the beginning of the study it was seen that follow-up of the patients were poor and about ¾ of them were detected as out of follow up. Different methods were used to connect with patients, relatives, neighborhoods or community managers. Greater number of the patients were reached after these persistent efforts. A retrospective analysis of these data were made in order to evaluate which factors were important in the survival of these patients. A multivariate analyze with SPSS 8.0 (Microsoft Inc.) software was performed.

Results

In this series of 472 patients, there were 4 postoperative deaths (0.84%). The mean number of lymph nodes harvested from the neck was 9.08. Metastatic lymph nodes (only 1) were detected in 26 (5.5%) patients (N1= 26).

Adjuvant Treatment

Adjuvant radiotherapy were performed in 26 patients who had metastatic lymph nodes with a dose of 4500-5000 cGy with Cobalt 60, external beam therapy to neck. Radiation therapy was initiated after one month from surgery and internal jugular chain was chosen as the primary site the primary site. There were no patients who had applied adjuvant chemotherapy.

Local Recurrences

Local recurrences occurred in 24 patients: For all patients (472) 5.6% and for followed patients (267) 8.9%. Twenty four (5.6%) patients. All of these were treated by surgical resection. Mean time to local recurrence was 28.3 months. After surgical resection no further local recurrences were seen. Size of tumor, regional lymph node status, ulceration and grades of the patients who locally recurred listed in Table 1. After surgical treatment of local recurrences (neck) regional metastases in 5 and distant metastases were seen in 4 patients. All patients who dead did so metastatic disease.

Metastases

Regional metastases occurred in 19 (4.02%) patients and distant metastases without regional metastases in 7 (1.44%) patients. Regional metastases were detected in jugular chain out of the dissection zone. Mean time to metastases was estimated as 19.5 months. After regional metastases

Table 1. Relations between local recurrences with tumor size, nodal status, ulceration, grade and survival.

Locally recurrent patients		24
Tumor size	T2	23
	T3	1
Nodal status	N0	22
	N1	2
Ulceration	(+)	21
	(-)	3
Grade	I	18
	II	4
	IV	2
Survival	Out of follow	1
	< 5 years	9
	> 5 years	14

was detected radical neck dissection was performed in 15 suitable cases. Relations of metastases with tumor, node, grade and survival indicated in Table 2.

Survival

It was found that 237 patients lived more than 5 years, 30 patient less than 5 years and 205 patients were out of follow up in different times. Mean follow-up time was 68.57 months. Twenty six patients died from cancer of the lower lip, 4 patients were lost the in postoperative period and 9 patients who died did so from non-cancer causes. Relations of sex, tumor, grade, node, ulceration, stage and place of living with survival were indicated in Table 3.

Statistical Analysis

For determining the role of factors effective on survival multivariate Cox Regression analysis was performed. In this analyze the effects of sex, tumor size, grade, localization of tumor, node, recurrences, ulceration, metastases age and place of living on survival were researched. In the result metastases and grade were found to be significantly effective on survival ($p< 0.05$). By using the same method cumulative survival rates 5 and 10 years survivals rates were found as 96% and 93% (Figure 1).

Discussion

Although it is known that cancer of the lower lip is seen most frequently in males, in this series male ratio was found to be very high. There is another important point that 68.4 percent of patients were living in villages and were involved with farming. We did not collect any data about risk factors of lower lip cancer but we may say that sun exposure plays an important role in the devel-

Table 2. Relations of metastases with tumor size, nodal status, ulceration, grade and survival.

Regional metastases			19 (4.02%)
Distant metastases without regional involvement			7 (1.4%)
Tumor size	T2		18 RM, 6 DM
	T3		1 RM, 1 DM
Nodal status	N0		13 RM, 7 DM
	N1		6 RM
Grade	I		9 RM, 5 DM
	II		9 RM, 2 DM
	IV		1 RM
Survival	Regional	> 5 years	3 cases
		< 5 years	16 cases
	Distant	> 5 years	1 case
		< 5 years	6 cases

RM: Regional metastases, DM: Distant metastases.

Table 3. Relations between survival with sex, tumor size, nodal status, ulceration, grade, stage and living place.

		Out of Follow	< 5 Years	> 5 Years
Sex	Female	8	4	15
	Male	197	26	222
Tumor	T2	194	28	223
	T3	11	2	14
Nodal status	N0	194	26	226
	N1	11	4	11
Ulceration	+	193	29	215
	-	12	1	22
Grade	I	167	22	189
	II	37	7	42
	III	1	-	4
	IV	-	1	3
Stage	II	184	25	214
	III	21	5	23
Living place	In country	140	21	162
	In city	65	9	75

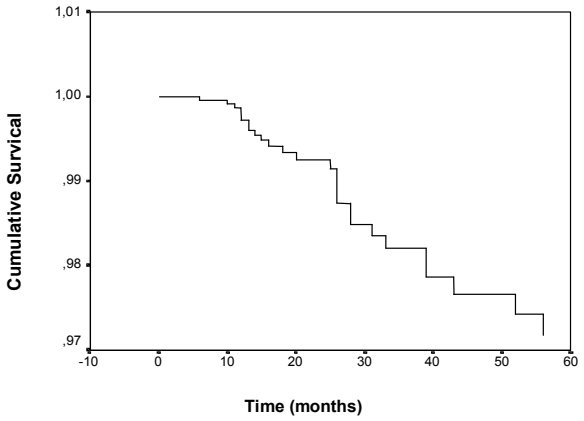

Figure 1. Cumulative survival rate for 5 years.

opment of this kind of cancer. But we also observed that this group of patients were also in the lower socioeconomic status.

We could not analyze the surgical complications because of inadequate data. There were 4 patients who died in postoperative period 2 of them were died of cardiac problems, one from of respiratory insufficiency and one of them committed suicide in the 2nd postoperative day (26 years old female patient).

Local recurrence rate of 5% in T2-T3 tumors was similar to the values in the literature. In a study of de Visscher et al. found that local recurrences were significantly related to tumor size, but we couldn't demonstrate such a relation.[10] After local recurrences regional and distant metastases developed in 9 patients. These patients died in spite of receiving radiotherapy and chemotherapy.

In statistical analysis metastases (regional-distant) was found to be significantly important in survival. From 19 patients who had regional (neck) metastases, only 4 could have a survived more than 5 years. In a series of 123 patients Mc Gregor et al. estimated cervical lymph node metastases as 15.4% in T1-T2 patients.[2] Similar results (6.5-19.1%) were seen in other studies.[11-14] Treatment of primary tumors of the lower lip with radiotherapy had a rate of 12.4% regional metastases in the study of de Visscher et al.[15] Tumor size was determined to be the important factor in cervical node metastases.[2,11,12,16] But Hosal et al. found a cervical metastases rate of 12% in their study and said that the primary size of the tumor did not correlate with regional lymph node metastases.[17] The rate of regional metastases (4.02% for entire 472 patients and 7.1% for 267 followed up patients) in this study could be evaluated as a successful result, but of course it's difficult to say that it's a result of suprahyoid neck dissection because this study was not a randomized controlled clinical trial.

Survival rates of 5 and 10 years in this series (96%, 93%) seemed to be better than other series with respectively 90%, 78% and 88% for 5 year survival.[2,11,16] But, we have to find answers to some important questions; 1. Did the elective suprahyoid neck dissection prevent the development of regional and distant metastases, 2. Is there any survival benefit with this surgical method?

It is difficult to say that elective bilateral suprahyoid neck dissection exactly prevented the development of regional metastases, but when we compared the results with other series our results seemed to be better. Spiro et al. applied elective supraomohyoid neck dissections for squamous cell carcinoma of the oral cavity and find a ratio of occult metastases of 31% and say that this procedure could be evaluated as both therapeutic or a staging procedure.[18] In this step we have to evaluate the role of cervical metastases after elective neck dissection. If it is found to be less than in the patients without neck dissection we could say that the method is successful. In the same report it was found as 5% and 4% in our series. Eggert et al. indicated that suprahyoid neck dissection appears to be a part of the primary treatment of lower lip carcinoma except when the tumor size is less than 1 cm.[14] But there is an alternative for this method; we could perform radical neck dissection and radiotherapy after regional metastases developed.

Although it seems that with suprahyoid neck dissection for lower lip cancer lower regional metastases and higher survival rates could be obtained in this study, lack of a control group and randomization prevents us from making such a conclusion.

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