



Elective neck dissection for carcinomas of the oral cavity: occult metastases, neck recurrences, and adjuvant treatment of pathologically positive necks

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Abstract

Background: Supraomohyoid neck dissection (SOHND) is currently performed in patients with carcinoma of the oral cavity with clinically negative neck. Most investigators consider SOHND as a staging procedure.

Methods: Records of 100 patients with cancer of the oral cavity and clinically negative neck undergoing SOHND were reviewed. The rate and significance of occult metastases are evaluated, the neck recurrences are analyzed and the indication of adjuvant radiation of pN+ necks is discussed.

Results: In 34 of 1814 of analyzed lymph nodes, metastatic disease was detected as follows: 30 macrometastases and 4 micrometastases. In 13 of 34 metastases (38%), extracapsular spread was observed. Twenty of 100 patients (20%) had to be upstaged. In 9 of 87 (10%) patients without local recurrence and with a minimal follow-up of 24 months, 5 ipsilateral (4 within the dissection field) and 5 contralateral neck recurrences were observed. Regional recurrence developed in 4% and 35% of patients with pN0 and pN+ necks, respectively.

Conclusions: In 20% of patients with oral cavity tumors and pN0 neck, occult metastases were disclosed. Neck recurrences developed significantly more often in patients with pN+ than in those with pN0 necks. To evaluate the exact indication for an adjuvant treatment of patients with cN0/pN+ necks, prospective studies should be performed. © 2006 Excerpta Medica Inc. All rights reserved.

Keywords: Adjuvant radiation; Occult metastases; Oral cavity carcinoma; Regional recurrence; Supraomohyoid neck dissection

Lymph node metastases are an important prognostic factor for patients with carcinomas of the oral cavity. The incidence of occult metastases in patients with cN0 neck remains significant despite improved imaging studies. In fact, the rate of occult lymph node metastases in patients with cN0 neck has been reported between 11% and 45% [1–9]. In patients with cN0 neck and a >20% probability of occult metastases, an elective treatment of the neck for diagnostic and therapeutic purposes is generally performed [10].

Studies of lymphatic drainage demonstrated that most regions of the oral cavity drain to neck levels I to III [11,12]. Furthermore, the prevalence and distribution of lymph node metastases was analyzed on large histologic studies on radical neck-dissection specimens [13,14]. These observations

formed the rationale for the currently most often employed supraomohyoid neck dissection (SOHND) of oral cavity carcinomas in patients with cN0 neck. The objectives of this study were to analyze occult metastases and recurrence rates with the use of SOHND in patients with cN0 neck of the oral cavity and to discuss adjuvant treatment of the pN+ neck.

Patients and Methods

From 1992 to 2001, 100 patients with T1 to T3 oral cavity squamous cell carcinoma and cN0 neck, categorized according to the International Union Against Cancer TNM classification system [15], underwent surgical resection of the primary tumor and ipsilateral or bilateral SOHND and were enrolled in a retrospective study. Patients with T4 carcinomas and patients with previous surgery or radiother-

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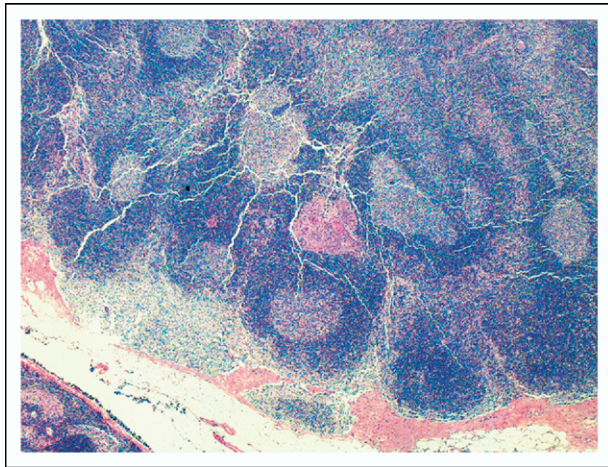


Fig. 1. Micrometastases (<2 mm) in a clinically NO neck.

apy in the head and neck region, and patients with positive resection margins were excluded. There were 72 male and 28 female patients. Ages ranged from 22 to 85 years (mean age 59.6). In 60 patients, the tumor site was the tongue, the floor of the mouth in 30 and other sites of the oral cavity in 10. Twenty-seven tumors were classified as T1, 55 as T2, and 18 as T3. In all patients an ipsilateral and in 16 patients a contralateral neck dissection was performed. Neck-dissection specimens were fixed in formalin, and thereafter the nodes were dissected from the specimens and processed for histologic study by standard techniques and stained with hematoxylin and eosin (H and E). In the pathologic reports of 19 lymph nodes per neck specimen, the number of lymph nodes was characterized by the term “numerous,” and in 97 reports, the exact number of analyzed lymph nodes was indicated. In these 97 neck specimens, a total of 1814 lymph nodes were analyzed, corresponding to a mean number of 19 lymph nodes/neck/specimen.

The incidence of neck recurrences was evaluated according to the pathologic findings and whether or not patients

underwent postoperative radiotherapy. Patients with a follow-up <24 months or with local recurrence within 24 months were excluded from the evaluation of neck recurrences because of a possible reseeding of the neck from the recurrent primary tumor. The statistical evaluation was performed using Mann-Whitney nonparametric test.

Results

Occult metastases

Occult metastases were detected in 34 of 1814 lymph nodes (corresponding to 20 of 100 ipsilateral neck specimens and in 0 of 16 contralateral neck dissection specimens). Thus, 20 of 100 patients presented with occult metastases (20%). The mean size of metastatic lymph nodes was 12.6 mm (range 4 to 26). According to Hermaneck et al [16], 4 occult metastases were micrometastases, ie, smaller than 2 mm (Fig. 1), and 30 were macrometastases. The smallest metastases measured 0.3 mm, and the largest measured 17 mm.

In 13 (all macrometastases) of 34 (38%) metastatic lymph nodes, extracapsular tumor spread was observed. Two patients were upstaged from pN0 to pN1 (mi): 11 patients from cN0 to pN1 and 7 patients from cN0 to pN2b. In 4 of 27 T1 (14%), in 10 of 55 T2 (18%) and in 6 of 18 T3 (35%) occult metastases were observed. Occult metastases were detected in 11 neck specimens of 60 (18%) tongue carcinomas, in 8 of 30 (26%) tumors of the floor of the mouth, and in 1 of 10 (10%) tumors of other locations in the oral cavity.

Regional recurrences

Eighty-seven patients (70 pN0 and 17 pN+) presented with a minimum follow-up of 24 months and without local recurrence. Nine (10%) developed regional recurrence (Table 1).

Table 1
Clinicopathologic findings of patients with recurrent neck disease

Site of recurrence	Initial T	Site of primary tumor	Initial N	Size of metastases (mm)	ECS	Initial ipsilateral irradiation of neck	Interval (mo)	Treatment of recurrence	Follow-up
Ipsilateral infield	T2	Floor of mouth	pN0	–	–	Yes	26	Palliative	DOD 3 mo
Ipsilateral* outfield	T3	Tongue	pN0	–	–	No	14	Palliative	DOD 1 mo
Ipsilateral infield	T2	Tongue	pN1	4	Yes	Yes	6	Curative	DOD 7 mo
Ipsilateral infield	T1	Floor of mouth	pN2b	8/5	No	Yes	9	Palliative	DOD 8 mo
Ipsilateral infield	T2	Tongue	pN2b	7/5.5	Yes	Yes	5	Curative	DOD 5 mo
Contralateral	T1	Tongue	pN0	–	–	No	7	Curative	DO 2 nd primary 40 mo
Contralateral*	T3	Tongue	pN0	–	–	No	9	Curative	DOD 10 mo
Contralateral	T2	Tongue	pN1	13	No	Yes	15	Palliative	DOD 1 mo
Contralateral	T2	Floor of mouth	pN1	1	No	No	20	Curative	DOD 4 mo
Contralateral	T2	Tongue	pN2b	15/13/7	Yes	Yes	10	Palliative	DOD 6 mo

DOD = death of disease.

* Same patient.

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