Incidence of occult lymph node metastasis in patients with head and neck cancer

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The incidence of occult lymph node metastasis in patients with head and neck cancers ranges between 4 and 40 percent. In these cancer patients, number, location and extent of lymph node metastasis are important issues in accurate planning of the treatment, prediction of patient’s prognosis and evaluation of treatment.

Abstract

Objective: The objective of the study is to determine the incidence of occult lymph node metastasis detected in patients with head and neck cancer who applied to our clinic.

Methods: Medical files of 107 patients who had been diagnosed as head and neck cancer between 2007 and 2012 were retrospectively examined. The patients who were accepted as N0 both clinically and radiologically at the time of diagnosis and those who had undergone neck dissection in addition to the treatment of primary tumor were included in the study. The patients were grouped based on the diagnosis of the primary tumor. Histopathology results of the patients and those with lymph node metastasis were documented. The proportion of the patients with occult lymph node metastases was calculated and primary tumor sites with a higher probability of occult lymph node metastases were determined.

Results: A total of 64 patients were included in the study who were diagnosed as laryngeal (n=42; 65.6%), oral cavity (n=15; 23.4%), parotid gland (n=5; 7.8%), nasal cavity (n=1; 1.5%) and auricular (n=1; 1.5%) carcinomas. Histopathologically lymph node metastases were detected in patients with laryngeal (n=12; 70.5%), oral cavity (n=4; 23.5%) and parotid gland (n=1; 5.8%) carcinomas. Laryngeal cancers were subdivided into supraglottic (n=4), transglottic (n=7) and glottic (n=1) cancers. The highest rate of metastasis was detected in patients with transglottic laryngeal carcinoma.

Conclusion: Occult lymph node metastasis is an important issue which should be kept in mind in cases with head and neck cancers. Location of primary tumor is an effective influential factor concerning this issue. As a result of this study, we thought that occult lymph node metastases are frequently seen in patients with transglottic laryngeal cancers.

Keywords: Head and neck carcinoma, neck dissection, occult lymph node metastasis.

Özet: Baş ve boyun kanserli hastalarda gizli lenf nodu metastazı insidansı

Amaç: Bu çalışmamın amacı klinikimize başvuran baş-boyun kanserli hastalarda saptanan gizli lenf nodu metastazı oranını belirlemektir.


Bulgular: Çalışmamızda 107 hastanın 64'u (65.6%) larenks, 15'i (23.4%) oral kavite, 5'i (7.8%) parotis bezi, 1'i (1.5%) nasal kavite, geri kalan 1'i (1.5%) ise aurikula kanser tanısı olan hasta idi. Histopatolojik olarak lenf nodu metastaz mevcut olan hastaların oranı %70,5'tir. Larenks kanseri, supraglottik (n=4), transglottik (n=7) ve glottik (n=1) kanserlerden oluşuyor. İstanbul'da bu kanserlerin %70,5'inden metastazı saptanıyor. 

Sonuç: Gizli lenf nodu metastazsi önemli bir konudur ve bu konuda önemli etkileyici faktörlerden biri lenf nodu metastazı olan hastaların çalışma bölgeleri değerlendirildi. 

Anahtar sözcükler: Baş ve boyun kanseri, boyun diseksiyonu, gizli lenf nodu metastazı.
response. Increased incidence of lymph node metastases enhances the probability of local recurrence and remote metastases and decreases survival rates nearly 50 percent.\textsuperscript{[2]}

The incidence of lymph node metastasis changes with characteristics and location of primary tumor. In the present study, the frequency of occult lymph node metastasis has been determined during the diagnostic process of the patients with head and neck N0 cancers who had received surgical treatment.

**Materials and Methods**

Medical files of 107 patients with head and neck cancer who applied to the polyclinics of Ear-Nose and Throat Department between the years 2007 and 2012 were retrospectively analyzed. At the time of diagnosis, patients in whom metastatic lymph nodes were not detected during otorhinolaryngological examinations, neck ultrasound (US) and neck computed tomography (CT) and had undergone neck dissection in addition to the treatment of the primary tumor were included in the study. The patients were grouped based on the location of the primary tumor. Patients with laryngeal cancer were divided into groups of supraglottic, glottic and transglottic cancer. The incidence rates of the patients with preoperatively accepted as N0 in TNM classification but had revealed lymph node metastasis in postoperative histopathological examination were determined. Locations of primary tumors with higher percentage of occult lymph node metastases were documented.

**Results**

In preoperative TNM classification, 64 (8 women and 56 men) patients with a mean age of 59.8±9.8 (range: 34 to 79) years who were radiologically and clinically accepted to be in stage N0 according to preoperative TNM classification were included in the study. Primary tumor was localized in larynx (n=42; 65.6%), oral cavity (n=15; 23.4%), parotid gland (n=5; 7.8%), nasal cavity (n=1; 1.5%) and auricula (n=1; 1.5%) (Fig. 1).

In postoperative evaluation 17 (26.5%) of a total 64 patients, pathological lymph nodes were detected. In 12 (70.5%) of these 17 patients primary tumor was localized in larynx (n=12; 70.5%), oral cavity (n=4; 23.5%) and parotid gland (n=1; 5.8%). Among 12 patients with laryngeal cancer, cases with supraglottic (n=4), transglottic (n=7) and glottic (n=1) cancer were detected. In 4 patients with oral cavity cancers, primary tumor was localized in tongue in 3 and base of the oral cavity in 1 patient. When patients with occult lymph node metastases were grouped within themselves, the highest rate (70.5%) of lymph node metastases was detected in laryngeal cancer group and in transglottic laryngeal cancer (41.1%) in this group (Fig. 2).

When patients included in the study group were analyzed within their own subgroups, since in 12 out of a total 42 patients with laryngeal cancer lymph node metastases...
were detected, the rate of occult lymph node metastases was detected as 28.5 percent. While 4 out of 15 patients with oral cavity cancers lymph node metastases were detected, so the rate of occult lymph node metastasis was estimated as 26.6 percent. In other patients (parotid gland, nasal cavity and auricular cancer) the corresponding rate was found to be 14.2 percent (Fig. 3).

Discussion
In patients with head and neck cancer, accurate evaluation of lymph node metastases during preoperative period effects treatment method to be performed and prognosis of the patient. In a study performed by Cerezo et al., 5-year survival rates in patients with only one lymph node metastasis was found to be 41%, while in patients with 2 or ≥3 lymph node metastases it was 22 percent.[3]

Knowing the group of patients with higher rates of occult lymph node metastases can aid in determination of type of lymph node dissection in the planning of surgery and/or specification of radiotherapy application field. This issue is crucial especially in patients who during preoperative period had been clinically and radiologically accepted as N0 patients. Literature reviews demonstrate that the incidence of occult metastases ranges between 15 and 20 percent.[4] Also in our study this rate was detected as 28.5% in accordance with literature findings. In a study by Woolgar performed on oral cavity cancers, the authors detected occult lymph node metastases in 21% (n=32) of 152 patients with N0 stage oral cavity cancers.[5] In our study in 4 (26.6%) of 15 patients with N0 oral cavity cancers occult lymph node metastases were detected. In a study by Pillsbury et al.,[6] the incidence rates of occult lymph node metastases were 36% in transglottic, 13% in glottic and 25.6% in supraglottic laryngeal cancers, and 29% in oral cavity cancers. In line with these results, the highest rate of occult lymph node metastases was determined in transglottic laryngeal cancers, followed by oral cavity cancers. In our study, the highest rate of occult lymph node metastases was detected in patients with transglottic laryngeal cancers, followed by supraglottic laryngeal cancers and oral cavity cancers in decreasing order of frequency. This discrepant outcome of our study was thought to be related to the scarce number of patients with oral cavity cancers.

In conclusion, as seen in studies performed and in our study, the rate of occult lymph node metastases is closely related to the primary tumor site. Therefore especially in transglottic laryngeal cancers and oral cavity cancers occult lymph node metastases are seen at higher rates we recommend addition of prophylactic lymph node dissection to the treatment plan of the patients.

Conflict of Interest: No conflicts declared.

References

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