

Immunohistochemical Detection of Lymph-Node DTCs in patients with node-negative Head and Neck Squamous Cell Carcinoma (pN0-HNSCC)

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IMMUNOHISTOCHEMICAL DETECTION OF LYMPH NODE-DTCS IN PATIENTS WITH NODE-NEGATIVE HEAD AND NECK SQUAMOUS CELL CARCINOMA (pN0-HNSCC).

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Background

This study was conducted to systematically assess the prevalence, topography and prognostic impact of the detection of disseminated tumor cells (DTCs) in lymph nodes (LNs) of patients with primary, regional and distant metastasis-free (pN0-, cN0-) HNSCC who underwent resection with elective neck dissection (ND).

Methods

In total, 50 patients with clinically node-negative HNSCC (cN0) were included in the study, who were operated on including a selective bilateral ND. During the preoperative ultrasound examination, the LNs were depicted in a diagrammatic plan of anatomically defined AAHNS (American Academy of Otolaryngology - Head and Neck Surgery) regions (I-VI). The ND specimens were processed in order to retrieve the lymph nodes depicted on the lymph node map preoperatively, they were assigned with numbers and individually sent for histopathological examination. All patients were negative upon routine histopathological workup (pN0). Immunostaining of the single lymph nodes was performed for CK5/14, CD44v6 and pancytokeratin, respectively.

Results

Altogether, we analyzed 4.190 sections of histopathologically negative LNs of 50 patients and detected seven micrometastases (MM) in five patients and 31 DTCs in 12 patients. Overall, 15 (30%) patients were positive for DTCs or MMs. Strikingly, the anatomical distribution of LN affected with DTCs was not random, but was dependent on the lateralization of the primary tumor and clustered

significantly most proximal to the primary tumor. None of the investigated patients developed loco-regional lymphatic or distant metastasis during the mean follow-up period of 71 months.

Conclusion

Our selected markers seem to be valid for the detection of DTCs and micrometastases in regional lymph nodes. Our data suggest an early and frequent tumor cell dissemination to the regional lymph nodes in HNSCC-patients. Given the fact that higher recurrence rates in therapeutic LN dissection concepts have been reported than in elective ND strategies, our DTC-data support the practice of elective NDs, since they appear to be effective in preventing loco-regional lymphatic recurrence from LN DTCs or MMs.