Lymphoscintigraphy in Head and Neck Skin Cancers: An Atlas of Sentinel Node Mapping


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Introduction: The lymphatic system of the head and neck consists of complex networks of collecting vessels and about 300 nodes (1/5 of the total body nodes). The valves in these vessels are more numerous than those in the lower limbs. This anatomical characteristic together with the effect of gravity favours a more rapid lymph flow in the head and neck. A dynamic or early static lymphoscintigraphy is a reliable method of identifying the Sentinel Nodes (SN) in head and neck skin cancers.

Methods: Between Nov.'99 and April 2004 55 patients (34m, 21f) with head and neck skin cancers were enrolled on our study. 37 melanoma cT2-3N0, 14 with Lip Squamous Cell Carcinoma (SCC) cT2N0 and 4 patients with Merkel disease. 30-50 MBq of 99mTc-Albunin-Nanocolloidal was injected in 0.3 mL was injected intradermally, into two perilesional points. A planar static scintigraphy was acquired immediately after the injection visualising the lymph drainage pathways. A SN radioguided biopsy was performed three hours after lymphoscintigraphy.

Results: SNs were observed on the I-II Neck Level (NL) within 5 minutes of the injection in 20 patient; 14 cases of cheek tumour, 4 nose cancers and 2 tumours on the eyelids. In 14/15 patients with SCC on the lip the SNs were detected on Ia-II NL. In 5 up to 7 patients with ear localisation SNs were detected in the pre-auricular region and in 2 patients on NL II. In the 7 patients with parieto temporal localisation SNs were detected in the retroauricular region and in 2 cases on the IV-V NL. In 1 patient with melanoma of frontal occipital region and in 2 cases on the IV-V retroauricolar region, in 2 cases in the parietal region and in 2 patients on NL II. In the 7 patients with a neck tumour the lymph drainage was observed in all directions, including the cranial direction. Pathologic upstaging of the clinically N0 neck occurred in 7 (13%) of 55 patients.

Conclusion: The unpredictability of lymphatic drainage in head and neck skin cancers depends strongly on the tumour site. By using nanocolloids were observed that the radioactivity of the first sentinel node decreases quickly and therefore we recommend a short interval between scintigraphy and a radioguided biopsy no more than 3 hours.