Clinically Occult Metastases in Patients with Cutaneous Melanoma: Detection with Sentinel Lymph Node Biopsy and Whole Body Positron Emission Tomography

Ilkka Koskivuo

Department of Surgery, Institute of Clinical Medicine, University of Turku, Finland. E-mail: ilkka.koskivuo@tyks.fi

Dr Ilkka Koskivuo, from the Institute of Clinical Medicine, Department of Surgery, University of Turku, Finland, defended his PhD thesis on 5 December 2008 in Turku. The opponent was docent Tiina Jahkola from the University of Helsinki and the thesis was supervised by docent Erkki Suominen. The thesis book is available at: https:// oa.doria.fi/handle/10024/42692.

The aim of this study was to investigate the use of sentinel lymph node biopsy (SLNB) and whole body positron emission tomography (PET), with emphasis on surgical treatment and prognosis, in the detection of clinically occult metastases in patients with clinically localized cutaneous melanoma.

The study population comprised 1255 patients with clinical stage I–II cutaneous melanoma, operated on at Turku University Hospital between 1983 and 2007. A total of 334 patients underwent SLNB and were compared with 921 retrospective patients. A subgroup of 30 symptom-free patients with high-risk melanoma underwent prospectively whole body PET 6–24 months postoperatively.

Overall, the disease-specific survival rate was 84.4% at 5 years. Sex, Breslow thickness, age and nodal status were independent prognostic factors for survival. SLNB revealed occult nodal metastases in 17% of the patients. There was no significant difference in disease-specific overall survival between SLNB patients and controls, but the nodal disease-free time was significantly longer, suggesting better local control after SLNB and subsequent completion lymph node dissection. The follow-up time was different between the study cohorts, and initial surgery was performed during different time periods. SLNB detected micrometastases in 7 out of 155 patients (4.5%) with thin T1 primary melanoma and in 4 out of 25 patients (16%) with head and neck melanoma. In 6 out of 30 asymptomatic patients with high-risk melanoma (20%), whole body PET detected occult distant metastases.

In conclusion, both SLNB and whole body PET were reliable methods to detect clinically occult metastases in patients with cutaneous melanoma. This upstaging altered the treatment in each case.

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