Risk of non-sentinel node metastases in patients with screen-detected breast cancers

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Background: It could be hypothesised that screen-detected breast cancers represent a clinically insignificant, slow growing group of cancers with low risk of dissemination beyond the sentinel node. This would make axillary lymph node dissection redundant in these patients.

Method: In a previous study on the risk of non-sentinel node metastases, tumor size, proportion of positive sentinel nodes, lymphovascular invasion, hormone receptor status and location of tumor in the breast were identified as risk factors for non-sentinel node metastases in patients with micrometastases in the sentinel node, and tumor size, age and proportion of positive sentinel nodes were identified as risk factors in patients with isolated tumor cells (ITC) in the sentinel node. Out of the 2801 patients from the Danish Breast Cancer Cooperative Group Database included in this initial study, 955 patients were operated between 2008 and 2010, after introduction of the national screening program; 773 with micrometastases and 182 with ITC in the sentinel node. Patients were cross-checked in the Danish National Screenings Database and 481 patients were identifies as screen-detected cancers. The remaining 474 patients were considered as having symptomatic cancers. Multivariate analyses of the risk of non-sentinel node metastases were performed including risk factors from the initial study as well as method of detection.

Results: 18% of the patients had metastases to non-sentinel nodes. This was evenly distributed between patients with screen-detected and symptomatic cancers; 18.5% vs 17.5% (OR: 0.94; 95% CI: 0.67-1.30; P=0.69). In patients with micrometastases in the sentinel node 19% had non-sentinel node metastases in the screen-detected group compared to 21% of patients with symptomatic cancers. This difference was not significant (OR 0.87; 95%CI: 0.61-1.23, P=0.43). In the multivariate analysis, the risk of non-sentinel node metastases was still not increased in patients with symptomatic cancers compared to screen-detected cancers (OR= 0.89, CI: 0.62-1.29, P=0.55). In patients with ITCs in the sentinel node 13% of patients with screen-detected cancers had non-sentinel node metastases compared to 8% of patients with symptomatic cancers. This difference was not significant (OR 1.74; 95% CI: 0.65-4.63, P=0.27). In the multivariate analysis, the risk of non-sentinel node metastases was still not increased in patients with symptomatic cancers compared to screen-detected cancers (OR 2.22; 95% CI: 0.79-6.24, P=0.13)

Conclusion: We did not find any difference in the risk of non-sentinel node metastases between patients with screen-detected and symptomatic cancers when micrometastases or ITC were found in the sentinel node. A less aggressive axillary treatment can not be supported in patients with screen-detected cancers.