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EDITORIAL

A tailored approach to regional nodal irradiation

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Abstract Regional nodal irradiation for breast cancer has recently been shown to improve disease-free survival, distant disease-free survival, and breast-related mortality but is associated with morbidity. A tailored approach adding regional nodal irradiation only to patients with involvement of the internal mammary nodes is improving prognosis while minimizing morbidity.

The results of the EORTC trial on Internal Mammary and Medial Supraclavicular Irradiation in Breast Cancer were recently reported in NEJM (July 23 issue) [1]. Patients with centrally or medially located primary tumors irrespective of axillary involvement or externally located tumors with axillary involvement were randomized in a 1:1 fashion to the addition of regional nodal irradiation to the standard breast or chest wall radiation. The rationale behind the study was a reported 4–9 % involvement of the internal mammary nodes in patients with axillary node-negative breast cancer and 16–65 % in those with axillary node-positive breast cancer [2–4]. The results demonstrate a small but significant benefit in disease-free survival, distant disease-free survival, and breast-related mortality. The study reports also a fourfold reduction in internal mammary (IM) recurrence rate but the numbers are small. In fact, it is precisely the unidentified/untreated metastatic drainage to the IM nodes that is usually blamed for the worse prognosis associated with medial tumors compared to otherwise similar lateral ones [5]. Unfortunately, regional nodal irradiation was also associated with an increased risk of pulmonary fibrosis, cardiac fibrosis, and cardiac disease. This associated morbidity might have contributed to the only marginal effect of regional irradiation on overall survival.

The quoted rates of metastatic involvement of the IM nodes in the paper do not take into account the lymphatic drainage pattern from the primary tumor as easily mapped by lymphoscintigraphy. Drainage to the IM nodal chain is associated with an 8–27 % metastatic rate [6]. This subgroup of patients with metastatic IM nodes is the most likely to benefit from IM radiation. We routinely perform IM sentinel node biopsies for patients with lymphatic drainage to the IM chain, thereby selecting the specific subgroup for which additional IM radiation should be added and minimizing the morbidity associated with it. We have demonstrated [7] that this tailored approach to the IM chain can reverse the worse prognosis associated with lymphatic drainage to those nodes [8].

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