IMMEDIATE BREAST RECONSTRUCTION AND POST-MASTECTOMY RADIATION THERAPY: TWO SAFE AND COMPLEMENTARY ENTITIES

Nazanin Shahvary, Léamarié Meloche-Dumas, Dominique Mathieu, Kerianne Boulva, Nicolas Côté, Maher Al Khaldi, Israël Fortin, Erica Patocskai

Department of Surgical Oncology, Centre hospitalier de l’Université de Montréal, Montreal, Quebec, Canada

Adjuvant radiotherapy post-mastectomy has been proven to increase disease-free survival (DFS) and overall survival (OS) rates in women with locally advanced breast cancer. Also, immediate breast reconstruction (IBR) post-mastectomy offers important psychosocial benefits and decreased morbidity as compared to delayed reconstructive surgery. There is currently controversy in the literature regarding the safety of post-mastectomy radiotherapy (PMRT) after IBR with regards to compromised treatment plans and the possibility of increased radiation toxicity. Current practice in most centers prohibits PMRT after IBR. This study aims to demonstrate that, with advances in radiotherapy technologies, adequate and safe PMRT can be offered to patients after IBR.

This retrospective study includes patients with breast cancer who underwent IBR post-mastectomy with adjuvant radiotherapy. Whole breast irradiation at 50 Gy in 25 fractions was used, with lymph node coverage when indicated. Treatments were delivered by tangential irradiation, tomotherapy or deep inspiration breath-hold (DIBH). Toxicities were graded according to the Common Terminology Criteria for Adverse Effects v4.0. Disease control and survivals were calculated by Kaplan Meier curves.

Seventy-one patients treated with PMRT after IBR between August 2006 and April 2015 were included. Median follow-up was 43 months. An adequate radiotherapy dose was administered without treatment delay to 66 (93%) patients. Fifty-seven patients received lymph node coverage. Tangential irradiation was used in 59 patients, whereas 10 patients were treated with tomotherapy and 2 in DIBH to reduce cardiac doses induced by treatment of left breast lesions or coverage of internal mammary chains. Grade ≤ 2 skin toxicities were observed in 56 patients. At 3 years, local control, DFS and OS were respectively 98%, 87% and 94%.

With newly developed radiotherapy technologies, the vast majority of IBR post-mastectomy patients can obtain adequate adjuvant radiotherapy without treatment
delay. In our experience, only low-grade skin toxicities were reported with excellent tumor control.