

NEGATIVE IMPACT OF HEAT EXPOSURE ON COSMESIS AFTER CONSERVATIVE TREATMENT FOR BREAST CANCER

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Aim and background: To identify the factors influencing cosmesis after conservative treatment in breast cancer.

Methods: Retrospective analysis was done on 424 patients who underwent postoperative radiotherapy after conservative surgery for breast cancer from February 1992 to January 2002. Most of the patients underwent quadrantectomy. Whole breast irradiation up to 50.4 Gy was delivered in 28 fractions followed by a 10 Gy boost in 5 fractions to the tumor bed. Regional lymph node irradiation was administered if indicated. Breast cosmesis was scored in 4 tiers. Breast symmetry was analyzed by the relative distance from the sternal notch to the nipple, using photos taken prior to radiotherapy and 2 years after its completion. Median follow-up was 64 months.

Results: Breast cosmesis was excellent in 15%, good in 63%, fair in 19%, and poor in 3% of the patients. In multivariate analysis, tumors >2 cm ($P = 0.0109$), lower quadrant location ($P = 0.0026$), lymph node irradiation ($P = 0.0028$), and heat exposure ($P = 0.0152$) were related to poor cosmesis.

Key words: breast cancer, cosmesis, heat, radiotherapy.

The cosmesis score after radiotherapy compared to the pre-radiotherapy score was deteriorated in patients who had undergone lymph node irradiation ($P < 0.0001$) and heat exposure ($P = 0.0027$). Breast symmetry was worse for patients who had tumors >2 cm ($P < 0.0001$), upper quadrant tumor location ($P < 0.0001$), chemotherapy in combination with radiotherapy ($P = 0.0136$), lymph node irradiation ($P = 0.0006$) and heat exposure ($P = 0.0355$). Changes in symmetry by radiotherapy were greater for lymph node-irradiated patients ($P < 0.0001$).

Conclusions: With larger tumor size, lymph node irradiation, and chemotherapy in combination with radiotherapy, heat exposure was found to have a negative impact on cosmesis in patients undergoing conservative treatment for breast cancer. Patients should therefore be advised to avoid heat exposure after breast irradiation.