Intraoperative radiation therapy as part of breast conserving therapy of early breast cancer—Results of one-year follow-up

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Abstract

Aim

The aim of this study was to assess the therapeutic effect of intraoperative radiotherapy, describe the method, and examine the occurrence of side effects and quality of life.

Background

Breast conserving therapy has recently become a standard treatment modality in patients with early invasive cancer. Radiotherapy, along with surgery, is an integral part of such treatment. The important thing of radiotherapy is to deliver a high dose to the tumour bed. One of the methods is the intraoperative radiotherapy.

Materials and methods

The analysis comprised sixty Tis-T2N0-1A breast cancer patients treated with breast conserving surgery. Patients’ mean age was 57 years (range: 32–73 years). Intraoperative radiation therapy was delivered in the operating theatre during surgery and involved a single dose of 10 Gy with an electron beam of 4, 6, 9 or 12 MeV. After that, all patients were treated with whole breast irradiation. During one year observation photos and side effects examination were made.

Results

Physical and imaging examinations performed during a one-year follow-up revealed no local or distant relapse and good tolerance of IORT. Acute mild responses to the radiotherapy occurred in 23.3% of patients. Based on the examination, a good and very good cosmetic effect was found in 78.3%, with 83.3% of patients evaluating their treatment effects in the same way.

Conclusions

Due to its exceptional physical and radiobiological properties, intraoperative radiation therapy can be a good alternative to other methods of boosting dose to the post-operative site in management of low stage breast cancer, enabling a precise therapy to the tumour bed.

Keywords

Intraoperative therapy; Breast conserving therapy; Cosmetic effect; Side effects