

Intraoperative radiotherapy in breast cancer. How do we do it?

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Intraoperative radiotherapy consists of irradiating the tumor bed of breast cancer during operation. The geographic miss of the tumor bed is a well documented phenomenon in boost irradiation, demanding adequate techniques of high quality boost setups.

After the tumorectomy including a safety margin of 1 to 2 cm around the palpable tumor, the lateral sides are sutured side by side to be better included into the applicator. The irradiation must be localized on the tumor bed, constituted by the lateral section areas of the tumorectomy. The cross-sections of the applicator are circular with the inner diameters of 3, 4, 5, and 6 cm. The applicator is fixed in the tumor bed with a foil and is not attached to the collimator of the linear-accelerator. Our operating table is moveable allowing the transfer of the patient from the operating room to the radiotherapy treatment room in the best conditions of asepsis. There, the patient is moved from the operating table to the treatment couch. Anaesthetic surveillance of the patient is ensured by mobile and fixed monitors during the entire period of transfer and IORT. The depth dose prescription is done by CT scan of the tumor bed. The single dose is 9 Gy with 4 to 12 MeV electrons on the 90% isodose.

After the wound is healed, the patients are treated up to 50 Gy (EBRT). No additional boosting is performed. This is why EBRT is two weeks shorter than without IORT. There were no early complications associated with the use of IORT. From 5/1999 to 4/2000 conservative surgery was performed on 20 patients with stage I or II breast cancer in a dedicated IORT facility.

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