Tolerance to irradiation in patients carrying breast prosthesis
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Introduction. An increasing number of women undergo breast augmentation procedures either for cosmetic reasons alone or immediate reconstructions post-cancer surgery. Some studies suggest that irradiating a reconstructed/augmented breast may result in an un-acceptable rate of cosmetic failure whereas others have found no detrimental effect.

Aims. Analyses were performed to determine tolerance and side effects of breast carcinoma patients with prosthetically augmented or reconstructed breasts who had received radiotherapy (RT) at our institution.

Materials and methods. Between July and December 2012, 4 patients with prosthetically augmented or reconstructed breasts after surgery (heterologous prosthesis) and 2 patients with expander treated with EBRT (50 Gy/2 Gy) were retrospectively reviewed. They aged between 30 and 54 years old.

Results and discussion. It was observed that the expander has a density 12 and 40 times higher than breast and lung respectively, so that there is a high gradient values. This implies more heterogeneity and higher ipsilateral lung irradiation. The conventional prosthesis carriers showed low influence on the distribution of dose because they have similar density breast tissue. Due to these differences the likelihood of dosimetric alterations is higher in this subgroup of patients, even though all cases met ICRU criteria. In any case prosthesis carriers are relieved of other complications associated with skin or prosthesis disorders due to irradiation (such as encapsulation). Our patients showed good tolerance to treatment, 3 had grade II radiodermatitis, and the remaining ≤1. In no case encapsulation or implant removal was recorded.

Conclusions. Despite the fact that prosthesis carriers are prone to suffer more complications, our experience shows no major differences from non-carriers, achieving oncological, cosmetic and dosimetric good outcomes.

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Toxicity analysis of adjuvant radiotherapy in breast cancer
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Introduction. Addition of radiotherapy to surgery has significantly increased local control and survival rates in breast cancer. In recent years new radiation schedules have been incorporated to our daily practice with a tendency to hypofractionation or simultaneous integrated boost (SIB). Toxicity is frequently a concern when using these schemes.

Purpose. To identify factors related to toxicity in breast adjuvant radiotherapy.

Materials and methods. In 2011, 213 patients were treated with different schemes of adjuvant radiotherapy after breast conserving surgery: whole breast + sequential boost, SIB, hypofractionation + sequential boost and only whole breast. We retrospectively compare and analyse the relationship of acute toxicity with different variables: PTVvolume, PTVboost-volumen, radiation scheme, total dose (TD), age, breast right/left, quadrant, grade, time of year, previous chemotherapy and hormone-therapy. ANOVA analysis was performed with quantitative variables and Kruskal–Wallis with qualitative variables. When differences were found analysis with Mann–Whitney U was performed. SPPS programme V10.

Results. Median age 59 (30–83). Median PTVvolume 855.7 cm³ (178–2632). Skin acute toxicity G0 23.9%, G1 46.9%, G2 24.4% and G3 4.7%. No cardiac acute toxicity was reported and only 3 patients presented G1 pulmonary acute toxicity and they were not included in the statistical analysis. With a median follow-up of 15.7 months (2.5–27.5) 212 women are alive (99.5%). No differences were found between toxicity and PTVboost-volumen, TD, age, breast right/left, quadrant, grade, time of year, previous chemotherapy or hormone-therapy. We found differences with PTV volume, more grade of skin toxicity with higher volume of PTV (p = 0.000). We also found increased skin toxicity in relation to sequential boost scheme (p = 0.005).

Conclusions. Hypofractionation or integration of the tumour bed boost shortens the overall treatment time compared to conventional scheme, with an acceptable toxicity. We found statistically significant differences of acute skin toxicity in relation to PTV volume and sequential boost.

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