Brachytherapy

2D, 3D dosimetry and virtual bronchoscopy in endobronchial brachytherapy

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Introduction. Endobronchial brachytherapy has indications for palliation or overprint affected if margins or small remains after other treatments. The use of 2D or 3D images in treatment planning is useful to define the margins of irradiation volumes. Alongside these images are applied directly or virtual bronchoscopy to secure the applicator or verify its position.

Purpose. To compare dosimetric parameters in treatment planning 2D, 3D and direct bronchoscopy. To evaluate the use of virtual bronchoscope obtained from simulation images.

Method. Review of endobronchial application dosimetry. Obtaining the recommended dosimetric parameters. Retrospective evaluation of virtual bronchoscopy as an aid to defining volumes.

Results. In the studied dosimetry planning improves D90 3D vs. 2D planning. Planning bronchoscopy performed on direct, alone, does not allow to delimit the depth of the lesion that it could not be compared. When direct bronchoscopy combined with virtual results are closer to 3D planning.

Conclusions. 3D planning permits, in our institution, set the D90 to planned volume. By virtual bronchoscope is possible off-line evaluation of implants.

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Brachytherapy as only fraction boost for breast cancer

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Introduction. Brachytherapy as only fraction boost after conservative surgery and radiotherapy in early stages of breast cancer is a simple technique that reduces treatment time and produces little late toxicity.

Objectives. To describe our experience with adjuvant breast brachytherapy.

Materials and methods. We retrospectively analyzed 58 patients diagnosed with localized breast cancer, between January 2005 and December 2012. They were treated with breast conservative surgery, EBRT and brachytherapy. We performed a descriptive study of our patients.

Results. 58 patients mean age 58 (36–80). 87.9% with ductal infiltrating carcinoma. 45% located in CSE left breast. Distributed under the current classification of TNM, 55% stage I and 72% G1–2. 100% were treated with breast conserving surgery, mostly without lymphovascular infiltration and 3.4% the resection margins are invaded by tumor, followed by EBRT and brachytherapy with mean dose 7.11 Gy (7–8.5) in only a fraction. The mean time between radiotherapy and brachytherapy was 15 days (3–30). The mean follow-up 52.7 months (1–94). 93% had some degree of dermatitis, of these only 7% were G3. 15% patients had recurrence (4% LR and DR, 11% DR, no LR only). 91% global survival, 90% live free of disease.

Conclusions. In this study, the disease relapse is low but we have found a relation between tumor size, tumor grade and the distance of the tumor resection margin, without founding relation with the time between EBRT and brachytherapy. Breast brachytherapy as only fraction to surgery in patients with early stage tumor and small tumor offers good local control with good long-term aesthetic results.

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