Changes in Breast Radiotherapy: Prone Positioning and Hypofractionation

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Breast cancer management has drastically changed since the 1990s. Many patients with breast cancer now can opt to conserve their breast through a lumpectomy and radiation (breast conservation therapy), rather than a full mastectomy. Advances in the techniques of delivery and length of breast radiotherapy have been rapidly evolving. This article attempts to summarize some of those changes for nurses caring for patients with breast cancer during radiation therapy.

The American Cancer Society (2013) estimated 232,340 new cases of invasive breast cancer will be diagnosed among women in the United States in 2013. Many patients diagnosed with breast cancer will require radiation therapy as an integral part of their cancer management. Breast conservation therapy (BCT) involves a lumpectomy (partial mastectomy) followed by breast irradiation. BCT allows patients to keep the integrity of their own breasts without compromising local control of the breast cancer.

Breast Conservation Therapy

Fisher et al. (2002) reported evidence gathered during a 25-year period that showed BCT can be the appropriate therapy for women with breast cancer who have negative surgical margins. Women in this pivotal trial were treated with lumpectomy and radiotherapy over five weeks without increased recurrence rates, proving that lumpectomy followed by irradiation continues to be appropriate therapy for women with breast cancer. The historical trial confirmed the merit of breast conservation radiotherapy. Historically, breast radiation following lumpectomy always was delivered in the supine position, which has the patient lying face up; the prone position, however, involves the patient lying face down, sometimes with the hands behind the head or neck.

Note. Yellow box shows the beam’s eye view of the treatment field. Images show the left-sided breast cancer (A) supine then (B) prone, demonstrating the sparing of the heart (blue) and the lung (brown).

FIGURE 1. Beam’s Eye View of the Treatment Field

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