Position during breast irradiation can minimize collateral damage

By ACSH Staff — September 20, 2012

We recently reported [1] on a study published in BMJ finding that procedures involving radiation to the chest, including chest X-rays or mammograms, may significantly increase the already high risk of breast cancer that women with certain genetic mutations (BRCA1 or BRCA2) face.

Not long after our coverage of the topic, we received an updated commentary from the NYU School of Medicine. We’d like to share this commentary with our readers, especially since it includes ways that women can reduce this risk:

In North America, breast cancer is the number one cancer diagnosis and the second leading cause of cancer death behind lung cancer in women. Conventional breast radiotherapy in supine position might involve a significant amount of surrounding organs in the treatment fields and cause complications to heart and lung. To reduce toxicity, different treatment positions (e.g., prone vs. supine) and treatment techniques (e.g., IMRT vs. wedged-fields tangent with different beam arrangements) have been investigated without reaching general consensus on the optimal treatment strategy.

In October 2011, Silvia Formenti, M.D., radiation oncologist at NYU School of Medicine, presented research into the advantages of positioning breast cancer patients on their stomachs (prone) rather than on their backs (supine) during post-lumpectomy radiotherapy. Summarizing trials conducted at NYU, she said that using a prone position for treatment can enable a significant reduction in the volume of lung and heart tissue exposed to radiation for women with breasts of all sizes.

"Prone positioning was optimal in sparing the lungs in virtually all right breast cancer cases, and for 85 percent of left breast cancer cases," said Dr. Formenti. She also pointed out that research has shown the prone set-up reduces the amount of respiratory motion of the chest wall, which may further enhance the accuracy of targeting during treatment. There is a contraindication, however: The prone set-up appears to be inadequate for breast cancer patients requiring radiotherapy to axillary lymph nodes.
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