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Prophylactic Mastectomy: A Treatment Alternative for Hodgkin Survivors?

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The link between mantle (chest) radiation for the treatment of pediatric Hodgkin lymphoma and secondary malignant neoplasms in adulthood, especially breast cancer, has been known for several years.¹⁻⁴ The elevated risk persists regardless of whether women received only high-dose radiation or the newer treatment regimen of lower dose radiation combined with chemotherapy⁵; it is highest, however, in those treated in their teens and early twenties with higher doses of radiation. Currently, survivors undergo annual to semiannual breast screenings with mammograms or breast magnetic resonance imaging (MRI), or both, similar to women with *BRCA* mutations.⁶⁻⁸

Recent publications have highlighted the increased risk of second malignancies in this patient population.^{9,10} New results from the Childhood Cancer Survivor Study show that women who received chest radiation for Hodgkin lymphoma were at nearly identical risk for the development of breast cancer as women who have *BRCA1* mutations (31% vs. 30%) and had 3 times the risk of those with *BRCA2* mutations by age 50 years.¹¹ The risk of breast cancer developing in the general population is 4%. This study, one of the first to directly compare these large patient populations, presents the question of how Hodgkin survivors should be most effectively monitored and treated in adulthood in terms of breast cancer risk. Swerdlow et al also demonstrated cumulative risks of > 40% for women treated for Hodgkin lymphoma in their teens, regardless of radiation dosage.¹² Although MRI may detect earlier breast cancer, it does not prevent the development of a second cancer. It is also less clear whether breast MRI screening affects mortality in this patient population. Aggressive surgery with mastectomy can be very effective in preventing breast cancer in *BRCA1*- and *BRCA2*-positive women. Offering *BRCA*-positive women the option of prophylactic bilateral mastectomy is becoming increasingly commonplace.¹³ In contrast, this appears to

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be more rarely discussed with Hodgkin survivors, based on the absence or extreme paucity of published articles on the subject, despite similarly alarming risks.

With these most recent data, we are proposing that the option of prophylactic mastectomy should be discussed with Hodgkin survivors. The psychological toll of losing a sense of “womanhood” would still be a great barrier to overcome for these women, a major reason why many *BRCA*-positive women forego this treatment. However, unlike *BRCA*-positive women, Hodgkin survivors have additional complications such as breast tissue changes after radiation and the emotional and physical enduring effects of having already experienced cancer once. One can only hypothesize at this time whether prophylactic mastectomy would gain traction as a feasible preventive treatment alternative for Hodgkin survivors, but this therapeutic option should be explored with more patients. An educated discussion can and should take place between physicians and their patients about this alternative option. Furthermore, additional research into chemoprevention in this patient population is warranted. We wait excitedly for the results of the proposed use of tamoxifen as chemoprevention in this patient population (NCT00165308).¹⁴

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