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Letter to the Editor

ESTRO ACROP consensus guideline for target volume delineation in the setting of postmastectomy radiation therapy after implant-based immediate reconstruction for early stage breast cancer

In regard to Kaidar-Person et al.

To the Editor: Pre and retro-pectoral implant-based immediate breast reconstruction (IBR) following mastectomy is on the rise [1,2]. Kaidar-Person and colleagues should be commended for their multidisciplinary initiative to define guidelines for clinical target volume (CTV) delineation in patients with IBR undergoing postmastectomy radiotherapy (PMRT) [3].

One recommendation for implants in the retro-pectoral location warrants additional commentary. The authors state that unless the dorsal fascia of the breast is involved (which is rarely the case), the CTV should include only the rim of tissue ventral to the implant and pectoralis major muscle. A notable exception is patients with "adverse factors and/or where the tumour was localized in areas within the breast close to the dorsal fascia (tumour on ink at the dorsal fascia) that was not covered by the major pectoral muscle". For these patients, the authors recommend "to delineate the tissue between the chest wall and the implant caudal from the pre-surgical position of the major pectoral muscle (ideally marked by surgical clips), which can be done as a separate dorsal CTV." Therefore, even in high risk cases such as patients with residual disease after preoperative chemotherapy the ESTRO ACROP consensus guideline recommends exclusion of the tissue between the chest wall and implant beneath the pre-surgical position of pectoralis major and for average-risk patients the area dorsal to the implant may be excluded in its entirety.

With traditional photon tangents, the most medial and lateral extents of the CTV primarily determine the coverage of the dorsal chest wall. The tissue dorsal to the implant will generally be treated regardless of whether it is specifically delineated in the CTV. However, if highly conformal techniques like intensity modulated radiotherapy or proton therapy are employed, these tissues can be spared [4,5]. This approach would limit exposure to the dorsal implant which may reduce the risk of reconstruction complications, a major source of morbidity [6]. Additionally, more chest wall, lung and heart sparing could be achieved [7–9]. That said, these tissues have historically been treated, including in practice defining clinical trials [10–12]. Although the majority of clinically detected chest wall recurrences occur in the skin and subcutaneous tissues, up to 28% have been reported within or dorsal to the pectoralis major muscle (Fig. 1) [13–15]. These patterns of spread should not be surprising considering that lymphatic channels from the breast pass through the pectoralis major muscle to internal mammary, interpectoral, and axillary level 3 and 4 nodes

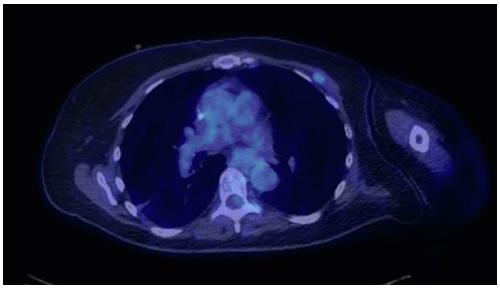

Fig. 1. Axial slice of a PET/CT scan demonstrating a hypermetabolic isolated left chest wall recurrence dorsal to the pectoralis major muscle.

[16]. There may also be a bias towards clinical identification of superficial recurrences [14]. Consistently, in modern trials evaluating the role of regional nodal irradiation, more distant recurrences were prevented than locoregional recurrences with more comprehensive treatment of deep seated regional lymphatics [10,11,17]. Therefore, the lymphatics of the pectoralis major muscle and tissue between the chest wall and the implant may be sites at risk of harboring microscopic residual disease and patterns of local failure alone may not establish the safety their omission from the CTV [17].

Physicians must carefully balance target coverage with normal tissue exposure. Treatment according to the ESTRO ACROP consensus guideline may eventually prove to improve the therapeutic ratio. However, exclusion of the tissue dorsal to the implant in patients with IBR should be recognized as a therapeutic de-escalation of an area potentially at risk of harboring microscopic residual disease. Caution is warranted, particularly in higher risk patients, and the safety of this approach should be confirmed with prospectively designed studies.

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Robert W. Mutter *
Department of Radiation Oncology, United States
* Address: 200 First Street SW, Rochester, MN 55905, United States.
E-mail address: Mutter.Robert@mayo.edu
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