

“Dose Contribution from the Posterior Axillary Boost Field to the Overlapping Region of the Supraclavicular Field”

In radiation oncology, breast cancer patients are generally treated with tangential beams to the breast and/or chest wall. In addition, patients with positive axillary nodes may also receive an anterior supraclavicular fossa (SCV) field. A four-field treatment technique, which includes a posterior axillary boost (PAB) field, may be used to assure that the dose in the mid-axillary area is therapeutic. The anterior SCV field and the posterior PAB field do overlap to some extent, although the amount of overlap varies from patient to patient. The dose contribution from the SCV field to the axilla is usually accounted for in the PAB dose prescription, since the larger SCV field usually encompasses most of the PAB field. However, the dose contribution from the PAB field back to the SCV field is usually *not* accounted for. This study investigates, using calculations and in-vivo measurements, the amount of dose contribution to the overlapping region, and the average size of the region affected. We found that this dose contribution in the overlapping region is on the order of 10-20% of the prescribed supraclavicular field dose. We suggest that the SCV and PAB fields should be treatment planned simultaneously so the physician may consider the full reciprocal dose contribution to both fields. Depending on the size of the region of overlap, the physician may choose to reduce the prescription dose or block part of the supraclavicular field.