**Radiotherapy to the supraclavicular fossa: do standard beam arrangements provide adequate coverage?**

**Descriptor:**

Anatomy between patients undergoing radiotherapy to the Supraclavicular Fossa (SCF) as adjuvant treatment in breast cancer is variable. This audit assessed whether the standard beam arrangement routinely offers adequate coverage of the SCF when it was contoured.

**Background:**

In an adjuvant setting, it is important to ensure that the intended dose is delivered ot the treatment area. Radiotherapy to the Supraclavicular Fossa is delivered at Barts Health using a direct anterior field set according to local guidelines. The SCF is not routinely contoured. Our audit assessed how well this field covered a contoured SCF.

## The Cycle

**The standard:**

Local virtual simulation work instructions for SCF radiotherapy were used. The SCF was outlined according to local consensus opinion from 2 consultants and published contouring guidelines(1, 2).

**Target:**

The contoured SCF volume treated should be entirely covered by the 95% isodose.

## Assess local practice

**Indicators:**

The 95% isodose was the indicator of adequate dose to the contoured SCF.

**Data items to be collected:**

The 10 most recently treated patients’ plans were selected retrospectively from the radiotherapy planning system.  The SCF was outlined according to local consensus opinion and published contouring guidelines(1, 2).

Plans were assessed for the degree of coverage by the 95% isodose. This was subcategorised into coverage at the borders of the contoured volume.

**Suggested number:**

A further 10 patients' plans could be evaluated once change has been implemented.

**Suggestions for change if target not met:**

Coverage of either medial or lateral extremes of the contoured SCF was incomplete on all plans. 60% plans missed medially, 60% laterally. 30% missed on both medial and lateral extremes. Superior coverage was lacking in 50% of plans. 90% were well-covered inferiorly, but in 30% of these the coverage was over generous, with the 95% isodose extending beyond the anatomical borders of the SCF. On the whole, there was good coverage anteriorly and posteriorly, but one volume required a parallel opposed pair instead in order to achieve adequate coverage at depth on the posterior part of the contoured SCF

.Action plan: There is now a plan in place to review field borders to ensure adequate medial and lateral coverage. In some cases, there may be a case for routinely delineating the SCF volume, for example where there is a larger than average amount of soft tissue. Patients will be seen weekly in floor clinic to monitor for additional toxicity. A re-audit will then be undertaken.

**Resources:**

Additional would be required for increased numbers of patients requiring contouring of their SCF for those involved in radiotherapy planning. It would also require additional time in floor clinic for these patients who may have additional toxicity.

**References:**

1. Atean et al. A simplified CT-based definition of the supraclavicular and infraclavicular nodal volumes in breast cancer. Cancer Radiother. 2013, 17(1):39-43
2. White J. Breast Cancer Atlas for Radiation Therapy Planning: Consensus Definitions. Radiation Therapy Oncology Group; 2009.

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