

Junctioning of two lateral fields with an anterior field in the treatment of head and neck cancer is common practice. Several techniques for dose delivery exist and dosimetric characteristics at the match line are an important indication of differences between them. This study focuses on an analysis of the dose distributions produced by the standard 2 CA technique compared to the distributions resulting from two monoisocentric techniques (one angled). With the 2 CA technique, beam divergence at the junction results in underdosing of a significant portion of the target volume. Both the standard monoisocentric and angled slant techniques produced no cold spots across the junction, resulting in a more homogeneous coverage of the target volume. The data showed that both monoisocentric techniques are dosimetrically effective in the treatment of head and neck cancers and adequately cover the nodal involvement at the match line. It was found that the standard 2 CA technique is also effective when the distance between the beam central axes is small. However, for greater distances between central axes as occasionally seen in some tumor types, the divergence in fields results in a greater dose inhomogeneity within the target volume.