

AbstractID: 1219 Title: Stereotactic IMRT (Radionics) using the Varian 120-leaf multi leaf collimator

The introduction of stereotactic technology into Intensity Modulated Radiation Therapy (IMRT) has provided the essential component of very accurate day to day treatment delivery using stereotactic localization and immobilization. The Radionics system utilizes the GTC and TLC (for brain), the HNL (for head and neck) and the BL (for body) stereotactic frames. The mini multi leaf collimator (MMLC), maximum field size of 9 x 11 cm when attached to a Varian linear accelerator with a 120 leaf MLC, is routinely used for static treatment delivery with the XKnife RT planning system. However, to facilitate larger field sizes, the Varian 120 leaf MLC itself has been incorporated into the Radionics system with an added advantage of 5 mm leaf width for the inner leaves. IMRT in the step and shoot mode can now be planned and delivered efficiently with the new XKnife RT 2.1 software. The latter creates the “.mlc” files that contain the segment information whereas the “.rtp” link files contain the segment dose information.

Several patients using the GTC (one with the pediatric TLC) and the HNL frames have been treated successfully in the stereotactic IMRT mode using the Varian 120 leaf MLC. Initial experience with the system suggests that this method will become routine for the entire treatment (30 to 35 fractions) in the Head and Neck and as boost after external 3D conformal treatments in the brain. A clinical example will be provided to highlight the use of this new technology.