

The use of Laitinen Stereoadapter and Glad-X relocatable frame in Stereotactic Radiotherapy

A population of our SRT patient with dentures treated with GTC relocatable frame show reproducibility problems and greater degree of inaccuracy. Some of these patients found the GTC intolerable. We have investigated the use of a combination of the Laitinen Stereoadapter and Galdenberg frame (Gald-X) for these patients. This study evaluated reproducibility in scanning, treatment plan parameters and treatment delivery.

The Stereoadapter relies on nasal bridge and auditory canal for fixation. Patient fitted with the Stereoadapter is secured inside the Glad-X with its lateral holders, Occipital headrest and forehead probe. A Rando head phantom is used in this study. A plastic target with placement positions for TLDs was implanted in the phantom. The Glad-X fiducials and subsequent XYZ coordinates are of BRW coordinates. Treatment plan was generated with our commercial stereotactic system. A total of 13 patients (19 isocenters) have been treated with the Stereoadapter/Glad-X system.

CT scan reproducibility based on XYZ coordinates was within 1.0 mm. The difference between the cone center and implanted target center based on orthogonal films calculations was $1.2+0.3$ mm. The TLD doses compared favorably with expected values. The isocenter variation for the 19 isocenters treated based on angio port film study was $1.5+0.6$ mm.

The Stereoadapter/Glad-X system seems well tolerated with satisfactory reproducibility and accuracy for SRT. At least in patients with dentures who cannot tolerate the GTC, this system offers an alternative. Patient results and phantom efficacy study will be presented.