

Accurate patient positioning is essential for successful treatment delivery. Unfortunately, in the case of obese patients set-up accuracy, based on skin marks and simulation data, even if available, is very limited. Treatment position for these patients needs to be checked and adjusted daily. Daily imaging using film is time consuming and quantitative evaluation of field displacement is not very accurate. The study involved three patients treated in supine position with AP/PA fields. The EPID and matching program used in this study (Varian Portal Vision mounted on the Varian 2100 C/D accelerator) require reference images to be digitized for matching with acquired images. We were able to simulate one patient, we used simulation films and port films for the patients not simulated for reference films. Before each treatment a portal image was acquired and matched with the reference image, the patient position was adjusted, if needed, and a second image was acquired and matched with the reference image to assure proper patient position. The mean displacements for all patients were: lateral (X) $16.9 \text{ mm} \pm 21.2 \text{ mm}$, and longitudinal (Y) $25.2 \text{ mm} \pm 24.9 \text{ mm}$. The results were better for the simulated patient: lateral (X) $8.21 \text{ mm} \pm 6.27 \text{ mm}$, and longitudinal (Y) $8.05 \text{ mm} \pm 5.82 \text{ mm}$. A significant improvement in treatment accuracy for obese patients is possible and less time consuming, using an EPID.