Purpose: As clinical radiation oncology centers move away from using film, digital imagers (EPIDs) are increasingly used to verify patient setup prior to treatment. Shifts are determined via the application of a digital graticule to the MV image. In theory, the origin of the digital graticule should be perfectly aligned to the radiation isocenter, and the digital graticule displayed at the treatment console should be identical to that observed in offline software. In practice, however, discrepancies in graticule position do occur. This poster presents a simple method by which the alignment of the digital graticule to isocenter can be verified on a per-patient basis prior to making shifts in patient setup.

Methods: A metal ball bearing (BB) 2 mm in diameter was placed on the EPID’s imaging plate coincident with the light field crosshairs or central axis (CAX). The EPID was moved through its range of motion, 50 cm vertically, to verify that the physical BB position tracked with the CAX. Crosshair alignment was further verified by retracting and re-extending the imager at the four cardinal gantry angles.

Results: The BB appears as an opaque point in a dark field for portal images. Without obscuring patient anatomy or localization markers, it serves as a marker of the CAX to which the physician and therapists can align the digital graticule prior to making shifts in patient position for treatment.

Conclusions: The BB serves as a reference point by which the accuracy of the digital graticule alignment can be verified on a per-patient basis. As long as a patient’s portal images include the CAX, the BB enables verification of measured shift accuracy prior to adjusting the patient’s position for treatment.