

[AbstractID: 1178 Title: Image Data Correction for MR Guided HDR Prostate Brachytherapy](#)

We have developed a technique for performing MR guided HDR brachytherapy for the treatment of prostate cancer using conventional 60 cm diameter cylindrical 1.5T and 3T magnets. This technique requires that the patient be positioned on the imaging table in the lateral decubitus position and employs a custom designed, adjustable MR compatible template. Procedural MR images~~This technique~~ offers superior ~~image anatomical resolution-definition~~ compared with ultrasound guided techniques and affords the prospect of ~~acquiring real-time spectroscopic information about the tumor when used in a 3T magnet~~incorporating functional images to aid in tumor delineation and treatment planning.

After the catheters are inserted, a final image set is acquired for treatment planning. To maximize the accuracy of catheter digitization, as well as anatomical visualization, these images are acquired in equally spaced slices which are parallel to the plane of the template. ~~However, It was discovered that the the commercial~~ brachytherapy treatment planning software (Plato™, Nucletron Inc.) ~~will, however, would~~ only accept true axial image sets ~~(those~~ acquired perpendicular to the direction of couch travel~~.)~~.

Corrections to the raw image data were applied to permit image transfer into Plato, and tested for geometric accuracy. This presentation will describes the corrections necessary to rotate the image data into the correct orientation as well as the quality assurance procedures needed to assure the spatial integrity of the image data.