

AbstractID: 1499 Title: A Transabdominal Ultrasound Alignment Technique to Improved Alignment Quality and Consistency in the Treatment of Prostate Carcinoma

Transabdominal ultrasound has become a widely accepted method to confirm patient alignment in the treatment of prostate carcinoma. Recent studies have shown the alignment accuracy and consistency of transabdominal ultrasound may not be within acceptable levels. Often, this is a result of the operator's ability to interpret ultrasound images and their familiarity with the alignment system. We've developed an alignment technique that allows the operator to check both the anterior/posterior (AP) and superior/inferior (SI) daily alignment. Typically, the proximal SVs are drawn as part of the CTV. Usually, seminal vesicles (SVs) are readily identified during a transabdominal ultrasound alignment procedure. This disparity in organ labeling can lead to some confusion during the ultrasound alignment process. As part of this technique, we have chosen to separate the SVs into two structures labeled proximal and distal. Viewed in the sagittal plane at their insertion into the prostate base, the proximal SVs are used as an alignment landmark for the SI and AP directions. Visualizing this region in the axial plane can then be used as a check for alignment quality. As routine practice in our department, daily alignments are printed and reviewed by the attending physician. At random, 303 alignments were reviewed before and 310 after this technique was adopted. In both cases 10 patients were used. All alignments were reviewed by the same physician. The printouts were noted for physician comments indicating a substandard alignment. The percentage of substandard alignments dropped from 15.1% to 3.5% after adopting the technique ($p=0.006$).