

<HTML><PRE>Effects of applicator spatial placement variations on cumulative dose to point A in the treatment of cervical cancer with 3 HDR intracavitary brachytherapy treatments.

We evaluated the effects of tandem and ovoids applicator spatial placement variations on the total dose received to points A when treating cervical cancer with 3 fractions of HDR one week apart. A Fletcher-Suit applicator, with a Nucletron Ir-192 remote afterloading HDR unit, and a CMS treatment planning computer were used. We evaluated seven patients with stage I, & II cervical cancer treated with 3 fractions of HDR. The prescribed dose was 700 cGy per fraction to point A for all except one patient with 770 cGy per fraction. The third fraction's orthogonal AP, and lateral films were used as reference images. The corresponding films from the first, and second implants were superimposed on the reference films matching at the bony landmarks. The Manchester defined point A's, and the source dwell positions from the 3 tandems, and ovoids were digitized. Point A dose variations of as much as 33% were observed for applicators positioned 2.3 cm superior to the reference fraction on Y-axis. The spatial displacement of the applicator from midline on X-axis resulted in dose asymmetry between right and left A. Comparisons between fractions should be done prior to second and third treatments. If applicator position varied more than 1.5 cm, its placement should be reevaluated. </PRE></HTML>