

## **Dose Variations Depending on the Separation of Ovoids during HDR Brachytherapy Treatments**

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The dose variations due to the changes of separation between ovoids during high dose rate (HDR) brachytherapy treatments have been studied. The dose for patients after hysterectomy should be prescribed at the point of 5 mm depth from surface that affected by the geometry of ovoids. To deliver the prescribed dose, treatment time for each patient has been calculated by using of planning system that reconstruct with simulated images on the radiographs. The radiograph for each treatment has been taken to measure the separation of ovoids with keeping constant setting of ovoids for patient. The values of measured and planned separation of ovoids were compared to study dose variations during the treatment period. The average and range of variation of separations of ovoids is 3.6 mm and +2.9 ~ -8.7 mm with respect to the separation that used to calculate treatment time. Due to the change of separations of ovoids between the treatments, the range of the dose to the prescription point will be varied from -1.3 to +4.0% and can be ignorable. However, the separation should be watched carefully to keep accuracy of dose delivery although it is hard to identify exact separation on the fluoroscopy and anatomical change due to the separation.

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