AbstractID: 1228 Title: The CT-based Planning Procedure for the Interstitial Gyn-Implant using the Syed-Neblett Template

Abstract: The Gynecological implant using the Syed-Neblett template is suitable for treating advanced stage (III or IV) asymmetric disease. The standard Gyn brachytherapy procedure with Henschke/Fletcher applicator usually generates a symmetric irradiation volume around the applicator, which may not provide adequate dose coverage for asymmetric tumors without overdosing adjacent normal structures. Conversely, the Syed template offers freedom to customize dose distribution for asymmetric tumors. The local control rates in advanced stage (III or IV) tumors are found to be improved with the Syed template based implants.[1-2] Conventional simulation procedure for this technique involves a series of radiographs at various gantry angles with dummy seed ribbons placed in selected needles. The entire simulation and planning process is quite laborious and could take 5 – 7 hours. Even after that, the dose distribution obtained from the radiograph-based procedure cannot be correlated with the tumor and the adjacent normal structures. The CT-based planning procedure reduces simulation and dosimetry planning time to within 2 hours. Additionally, the CT-based procedure enables us to correlate dosimetry with the target as well as the normal structures (rectum, bladder and urethra, etc.) through dose-volume histogram analyses and facilitates differential source loading to spare normal structures, which is not easily achievable with the conventional radiograph-based procedure.

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2. R. Stock, et. al. A new Technique for performing Syed-Neblett template interstitial implants … Int. J. Radiat. Oncol. Biol. Phys. 37,819-825 (1997).