

EDITORIAL



John Suh, MD, Editor in Chief

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Overview of Gamma Knife radiosurgery and vaginal brachytherapy

Welcome to the third quarter edition of Applied Radiation Oncology 2013! On behalf of the advisory board and publisher, we appreciate your support of this e-journal, which features two articles and two case reports. We are encouraged by the favorable feedback that we have received from our readers.

In this edition, Dr. Neyman and colleagues review the history of Gamma Knife radiosurgery and evaluate the procedure, imaging, treatment planning, quality assurance, and clinical uses of the Gamma Knife based on the Cleveland Clinic experience, which has been an active unit since January 1997. Since Dr. Lars Leksell introduced the term radiosurgery in 1951, many patients with vascular malformations, benign brain tumors, functional disorders, such as trigeminal neuralgia, and malignant brain tumors, have greatly benefited from this technology. Like many centers, the Cleveland Clinic has continuously upgraded its systems and currently uses the Perfexion model, providing greater flexibility in treating targets throughout the brain in a more efficient and effective manner. Unlike many centers, MRI and CT images are obtained for the vast majority of patients to confirm positioning and minimize spatial distortion errors of MRI scans. The authors review some of the newer developments, including collapsed-cone convolution algorithm, which more accurately calculates dose distribution in the treatment field, relocatable frame system (Extend), allowing for stereotactic radiotherapy using a vacuum-assisted bite-block device, and a cone-beam computed image-guidance system, enabling image guidance that can help improve precision particularly for fractionated delivery.

The second article from Cattaneo and Elshaikh provides a radiation oncologist's perspective on minimally invasive hysterectomy for patients with uterine cancer—the most commonly diagnosed gynecological malignancy in the United States. With the introduction of robotic-assisted laparoscopic techniques and keen interest in reducing hospital stays and potential perioperative complications associated with more traditional hysterectomy, this approach has been widely adopted. Although this approach is clearly less invasive than total abdominal hysterectomy, the vaginal-cuff dehiscence rate approaches 4.1% compared to < 1% when following a traditional hysterectomy. This coupled with the increased use of vaginal brachytherapy based on the PORTEC-2 results makes this article timely. Since vaginal-cuff dehiscence appears higher for those patients undergoing robotic-assisted laparoscopic techniques, radiation oncologists should take the necessary steps and precautions to detect and prevent vaginal-cuff dehiscence as outlined in the article, including inspection of the vaginal cylinder after completion of the procedure.

We hope you enjoy this issue of *Applied Radiation Oncology*. If you are interested in submitting an article, we would welcome your submission. We also encourage you to participate in our [monthly clinical case review contest](#). The winning case will be published in a future issue of *Applied Radiation Oncology*, and the author will receive an American Express Gift Card in the amount of \$250.

For those attending the ASTRO meeting, I hope you enjoy the meeting in Atlanta.

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