

Dr. Suh is the editor-inchief of Applied Radiation Oncology, and professor and chairman, Department of Radiation Oncology at the Taussig Cancer Institute, Rose Ella Burkhardt Brain Tumor and Neuro-oncology Center, Cleveland Clinic, Cleveland, OH.

## Brain Waves: Expanding Treatment Options in Neuro-Oncology and Beyond

John Suh, MD, FASTRO, FACR

Welcome to the December 2022 issue of *Applied Radiation Oncology*, which focuses on the role of focused ultrasound (FUS) for neurological disease. FUS, while not a traditional tool in the radiation oncology armamentarium, is garnering interest and showing potential as a treatment option to consider for certain patient populations. The review article, *Breaking Barriers: The Past, Present and Future of Focused Ultrasound and Diffuse Intrinsic Pontine Glioma* (*DIPG*), offers a comprehensive update on how the advent of FUS-mediated blood brain barrier opening lays groundwork to promising advances in neuro-oncology. Approved for SA-CME credit, the article discusses preclinical studies from the last decade that assess the safety and feasibility of FUS-mediated BBB opening in the brainstem. The authors also review published phase 0-II clinical trials of low-frequency FUS therapy in the adult glioma population, and phase I clinical trials in DIPG that are underway. We hope you enjoy this interesting and timely review of emerging technologies to consider in treating this highly malignant cancer.

A second review article, *Focused Ultrasound for Ablation in Neurosurgery* – *Present Use and Future Directions*, examines the risk-benefit ratio of MR-guided FUS surgery as a noninvasive ablative therapy for movement disorders such as essential tremor and Parkinson's disease, as well as other indications. The authors describe the science behind ablative action and note that there may be a future role for radiation oncologists in utilizing this form of treatment.

The issue also features two case reports, the first of which is *Radiation Myonecrosis After Stereotactic Body Radiation Therapy (SBRT) for Metastatic Renal Cell Carcinoma (RCC)*. This insightful article details what is believed to be the second reported case of radiation myonecrosis after SBRT and the first reported case in a patient with RCC, as well as the first involving a patient on concurrent immunotherapy. This report adds to the published collection of radiation-induced myonecrosis cases and cautions clinicians on this rare but serious potential side effect of radiation therapy.

The second case report, *High-Dose-Rate Brachytherapy (HDRBT) Followed by Concurrent Chemoradiotherapy for Esophageal Adenocarcinoma*, provides an unusual example of how an upfront 3D HDRBT boost with dose manipulation followed by intensity-modulated radiation therapy showed good tumor response and minimal toxicity in a patient. Additionally, this case illustrates how upfront HDRBT swiftly relieved dysphagia, increasing the patient's acceptance of subsequent treatment with concurrent chemoradiotherapy, and how dose escalation with the aim to improve local control rate is feasible with HDRBT.

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Finally, we are delighted to present the Resident Voice editorial, *Resident-Led Education Committee: Fostering Leaders and Impactful Change in Radiation Oncology Education.* Cultivating leadership is a passion of mine and it's exciting to see how residents in radiation oncology and medical physics at UCSF have built a successful program to bolster teaching and leadership training. Through summer internships, journal clubs, a tumor board series and more, this enterprising group is fostering confidence and laying the foundations to exceptional leadership.

In other news, we are delighted to welcome Amishi Bajaj, MD, as the new Association of Residents in Radiation Oncology (ARRO) representative to serve on the *ARO* editorial advisory board for a 1-year term. Dr. Bajaj is a PGY5 radiation oncology resident at Northwestern University, Feinberg School of Medicine; chair of ARRO; and past president of the McGaw Medical Center Housestaff Association. In her role with *ARO*, Dr. Bajaj will assist with a variety of editorial responsibilities, including coordinating the Resident Voice editorial featured in every issue. Dr. Bajaj succeeds Justin Anderson, MD, PGY5 resident physician at Mayo Clinic Arizona, whom we thank for his wonderfully conscientious and dedicated service from 2020 to 2022.

We also thank the peer reviewers who critiqued submissions throughout 2022. An integral component to scholarly publishing, the peer review process is a time-consuming volunteer effort, and we are deeply indebted to those who made room in their demanding schedules to assess, filter and ultimately improve review articles, research papers, and case reports for the journal. Please see p. 24 for our acknowledgement of these committed clinicians who deserve high praise and recognition.

Finally, a word of gratitude to our readers for your many contributions to our growth over the last 11 years. Your support remains a key pillar to our advancement and success. We wish you a joyful holiday season and peaceful New Year!