

Preface

Advanced Neuroimaging in Brain Tumors



Sangam Kanekar, MD
Editor

The 2003 Human Genome Project and 2016 World Health Organization classification have made significant impacts on our understanding of brain tumors. Current research in brain tumors is focused on tumor genomics to identify novel therapeutic targets, devise personalized treatment options, and improve individual patient outcomes. In parallel, brain tumor imaging has also seen rapid growth with the development of advanced imaging techniques that provide insight into tissue characteristics at the cellular and molecular level. Molecular imaging techniques have made remarkable progress with the development of niche areas of texture analysis/radiomics and the applications of machine learning and artificial intelligence techniques.

Structural and molecular imaging plays a major role in diagnosis, treatment planning, and follow-up of the brain tumor. Preoperative imaging includes routine structural MR imaging along with various functional and molecular imaging techniques to aid the neurosurgeon in maximizing tumor excision. MR imaging, in particular, remains the basis for analyzing residual tumors, assessing treatment response, and guiding management. This *Radiologic Clinics of North America* issue strives to describe the current state of imaging in Brain Cancer, covering the imaging techniques employed for the diagnoses and for follow-up of the brain tumors.

I, along with my coauthors, present before you an issue of *Radiology Clinics of North America* dedicated to “Advanced Neuroimaging in Brain Tumors.” This issue has 12 articles, predominately dedicated to the imaging approach in the preoperative and postoperative follow-up of the brain tumor. This subsequently plays a significant role in triage and treatment strategies.

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Sangam Kanekar, MD
Division of Neuroradiology
Penn State Milton Hershey Medical Center
Penn State College of Medicine
Mail Code H066, 500 University Drive
Hershey, PA 17033, USA

E-mail address:
skanekar@pennstatehealth.psu.edu