

MR-Guided radiation therapy: Clinical applications & experiences

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Abstract

Magnetic Resonance (guided) Radiotherapy (MRgRT) is considered a suitable and versatile imaging modality that enhances direct visualization for tumors that surround the wounds among other organs at risk. MRgRT has marked the beginning of a new era, with its ability to provide real-time imaging that tracks and characterizes each anatomical motion. Initially, the technology was challenging, with the next-generation hybrid MR systems still having limited applicability to clinical practice. Adaptive radiotherapy is also an adequate procedure, given the monitoring variations targeting the neighboring structures to enhance uniformity of the treatment procedures. This is sufficient since a single plan may be inaccurate in exploring the wound's exposure. MRI is also adequate as it provides soft tissue superior in image contrasts as compared to the standard X-ray technologies without exposure to radiation. Lastly, pre-operative MRgRT has shown delineation given the less inter-observer variations as compared to postoperative procedures. MRI has proved very sensitive to the detection of findings. Patients also receive earlier detection and treatment for successful clinical outcomes. The robust use of MRgRT improvement and safety applications in artificial intelligence have enhanced improved quality of contours, also reducing uncertainties and improving the overall quality of imaging. Other involved healthcare complications, including Glioblastoma and other ulcers, require unique therapeutic strategies changing the way clients receive their treatment. The past decade has also proven to have deficient tumor control, high survival rates, and reduced toxicity occurrences. More accurate imaging tools and gating solutions have been useful in achieving higher authentic images, hence the effective treatment of tumors in the overall.

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Biography

Dennis Adjepong, MD. MBA is a surgeon intern at Alexandria Surgery Associates in Alexandria, VA. He graduated from Poznan University of Medical Science, Poland. His thirst for research is in the field of Neurosurgery/ Neuroscience. Dennis received his Master's in Business Administration from Strayer University, Washington DC.

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