



XSTRAHL IN ACTION: SARRP ASSISTS IN NEUROAXIS THERAPY ON PRECLINICAL MODELS OF CRANIOSPINAL IRRADIATION FOR MEDULLOBLASTOMA



PUBLICATION/STUDY

Preclinical Models of Craniospinal Irradiation for Medulloblastoma



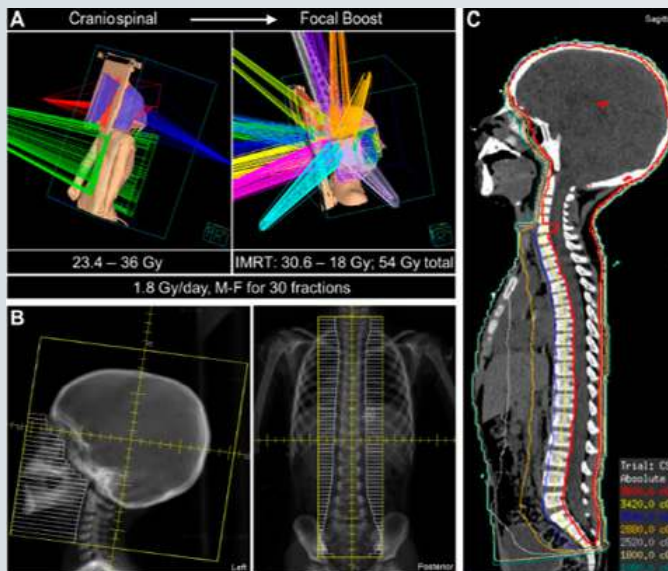
AUTHORS

Stripay JL, Merchant TE, Roussel MF, Tinkle CL



KEY FINDINGS

- Medulloblastoma is the **most prevailing** malignant brain tumor in children and adolescents in the United States.
- Current standard techniques employ computed tomography (CT)-based target delineation, often supplemented by other image-guidance tools, to ensure interfraction reproducibility.
- Delivery of craniospinal irradiation (CSI) to preclinical models of medulloblastoma enables study of radiation dose and volume effects on tumor control and toxicity, hence **best identification** of precise combination adjuvant therapies.
- CSI has so far employed megavoltage photons delivered through a simple geometric beam arrangement to treat the cranium and spine, with beam collimation to the contours of the both organs. Proton therapy has more recently emerged as a **leading irradiation modality** for medulloblastoma therapy.



Clinical radiation therapy for medulloblastoma. (A) Three-dimensional rendering of craniospinal irradiation (CSI) (left) in a pediatric patient with medulloblastoma treated in the supine position with parallel-opposed lateral beams (red, purple) and a single posterior-to-anterior (PA) beam (green) and with intensity-modulated radiation therapy (IMRT)-based primary tumor site boost irradiation with multiple beams (right). Typical CSI and boost doses



THE VALUE OF SARRP

SARRP's offering of image-guidance facilitates neuroaxis therapy via precise positioning of treatment-field isocenters in the brain and the spinal cord. With the help of SARRP technology, scientists assess multiple endpoints including overall survival in tumor-bearing animals, investigation of multiple radiation administration regimens, and response evaluation.

PMID: 31948065 | PMCID: PMC7016884 | DOI: 10.3390/cancers12010133 | [Full Study](#)