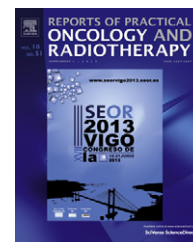


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## Central nervous system

### A novel technique for craniospinal irradiation with rapid arc

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The purpose of this video is to present a new technique for craniospinal irradiation. A patient with medulloblastoma was submitted for adjuvant treatment after surgery. A total dose of 36 Gy was prescribed to the craniospinal axis and a posterior fossa boost to 54 Gy. Patient was immobilized with a vacuum bag and head plastic shell. More than one isocenter is needed to cover the total PTV, as for 3DCRT as IMRT techniques. In this case we used 3 isocenters located at the center of the brain, at 6th thoracic vertebra and 2nd lumbar vertebra. On each isocenter two arcs were planned. Dose distribution improved 3DCRT and is comparable with tomotherapy. Image guided with CBCT was performed before each session. Total treatment time including image acquisition was around 30 min.

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### Childhood crano-spinal irradiation immobilization devices

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**Introduction.** Pediatric treatments central nervous system, it creates serious problems in positioning and to stabilize the patient, this is due to anatomical and size variability in this group, being almost essential to use sedation or anesthesia for mobility control, ALSO, the commercial offer specific devices for these treatments is virtually non-existent.

**Objective.** Timely respond to demand and future of these treatments, designing, manufacturing and applying two immobilization systems for two different locations pathologies and pediatric treatment central nervous system.

**Materials and methods.** We start from a multidisciplinary team with experience in the treatment of pediatric patients. Is necessary to treat three patients: – A patient (16 months old), which requires a cranial radiosurgery. – Two patients (3 years old), treatable crano-spinal. Following the evaluation of patients considered the design and manufacture of two immobilization systems specific for this, now we get a local company (Siho Medical Devices), which will design and manufacturing of restraint devices, following staff criteria. To do positioning and immobilization control of patients with BRAINLAB ExacTrac.

**Results.** In a short period of time, the devices are modular, for covering timely and future demand for covering a wide range in these patients. Both patients were covered by immobilizer, conducting a study of their effectiveness.

**Conclusion.** The results obtained during and after treatment, demonstrate the effectiveness of these types of devices in pediatric treatments, ensuring immobilization and greater precision in treatment, also giving RESPONSE to specific needs of this group.

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