

## FP87

### **The use of ultra-low field iMRI in the treatment of pediatric brain tumors**

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**Introduction:** Intraoperative magnetic resonance imaging (iMRI) is in use in the treatment of intracranial tumors since 1994. Use of iMRI during tumor removal reduces the risk of damaging normal parts of the brain and helps neurosurgeon to confirm successful removal of the tumor. But iMRI increases the duration and cost of surgical treatment. In this paper, we presented our experience on the use of ultra-low field iMRI in the surgical treatment of pediatric brain tumors.

**Methods:** Six pediatric patients with brain tumors underwent surgical treatment using iMRI in our department between 2009 and 2011. The mean age was 3 years (ranged between 2 and 4 years) and 5 patients were male and one was female. The radiological diagnosis was posterior fossa tumor in 4 patients, suprasellar tumor in 1 patient, and left temporal tumor in 1 patient. Polestar N20<sup>®</sup> ultra-low field iMRI (0.15 T) was used in these patients during the operations. Preoperative, intraoperative and early post-resection (before the dural closure) iMRI scans were obtained in all patients.

**Results:** Total removal of the tumor was performed in 5 patients while subtotal resection was achieved in 1 patient. The diagnosis was pilocytic astrocytoma in 2 patients, pilomyxoid astrocytoma in 1, medulloblastoma in 1, ependymoma in 1 and dysembryoblastic neuroepithelial tumor in 1 patient. Easier patient positioning and better intraoperative images were the advantages of iMRI in these patients, particularly for posterior fossa tumors.

**Conclusions:** iMRI could be easily used in the surgical treatment of pediatric brain tumors. It provides excellent intraoperative evaluation of tumor resection and safe surgery for the patients, especially in posterior fossa tumors.