FP103

Childhood braintumors of posterior fossa and midline structures

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Objective: In children tumors of the posterior fossa and midline structures are more frequent compared to the adult population. Related to localization and age, specific histologies are found. Therapy strategies depend on histological type, growth pattern and age. Prognosis correlates not always with histological grading.

Methods: A single institution retrospective study was performed in order to characterize tumors of the posterior fossa and midline structures. The vast majority of the patients were not older than 20 years.

Results: Between 2007 and 2013 a total of 103 patients with midline/PF tumors were treated. Mean age was 6.4 years (3 patients > 20 years). Tumor localizations were: cerebellum (42), suprasellar (18), intraventricular (16), brainstem (13), thalamus (7), pineal (5) and corpus callosum (2). Most frequent histology was pilocytic astrocytoma I° (35) and III° (1), followed by medulloblastoma (11), astrocytoma II° (5) and III° (2), choroid plexus papilloma II° (5) and I° (3), ependymoma III° (3) and II° (2), germ cell tumors (5), craniopharyngeoma (5), diffuse pontine glioma (5), optic glioma (4) glioblastoma multiforme (3), ATRT (2), SEGA (2), RGNT (2), pituitary adenoma (2), central neurocytoma II° (2), and pineoblastoma, AML, PMA, ganglioglioma I° (1 each). In 6 patients no tumor related surgery was performed (optic glioma, DIPG). 51 patients received no adjuvant treatment; radio-chemotherapy was performed in 29, and chemotherapy alone in 17, only radiotherapy in 5. One boy had fatal lung embolism after surgery. 3 patients are LOF and 11 died (DIPG, thalamus glioma, GBM). Mean follow up was 2.5 years. 49 patients are in complete remission and 26 show stable disease. Recurrent or progressive disease is found in 11; partial regression and secondary metastatic disease in 1 each. A shunt became necessary in 16 patients, 9 could be treated with ETV. Posterior fossa syndrome was seen in 7 patients (17% of cerebellar tumors).

Conclusion: The histological variety of childhood brain tumors is broad. Medulloblastoma and atypical histologies (II°) can be well controlled. DIPG, thalamic astrocytomas (fibrillary) and GBM in older children still have an unfavorable prognosis. 25% of all midline and posterior fossa tumors require additional hydrocephalus treatment. Posterior fossa syndrome occurs in 17% of all cerebellar tumors.