Pediatric posterior fossa tumor classification

Molecular biomarkers play a central role, not only in the diagnosis and prognosis of posterior fossa tumors in children but also in customizing treatment plans. They anticipate patient outcomes, measure treatment responses, and assess therapeutic effectiveness. Advances in neuroimaging and treatment have significantly enhanced outcomes for children with these tumors. What is Known: • Central nervous system tumors are the most common solid neoplasms in children and adolescents, with approximately 45 to 60% of them located in the posterior fossa. • Multimodal approaches that include neurosurgery, radiation therapy, and chemotherapy are typically used to manage childhood posterior fossa tumors What is New: • Notable progress has been achieved in the diagnosis, categorization, and management of posterior fossa tumors in children, leading to improvement in survival and quality of life [1)].

The pediatric posterior fossa tumors are:

Posterior fossa astrocytoma

Cerebellar pilocytic astrocytoma: most common

Brainstem glioma

Medulloblastoma: (also known as posterior fossa PNET)

Infratentorial Ependymoma

Atypical teratoid rhabdoid tumor (AT/RT)

Hemangioblastoma (uncommon except in patients with vHL)

Posterior fossa teratoma

A quick and handy mnemonic for posterior fossa tumours in children is BEAM.

Although it is true that posterior fossa tumours are much more common in children than in adults the distribution does vary with age:

0 to 3 years of age: supratentorial > infratentorial

4 to 10 years of age: infratentorial > supratentorial

10 to early adult hood: infratentorial = supratentorial

adults: supratentorial > infratentorial

Overall 50-55% of all intracranial tumors in children are found in the posterior fossa.

1)

Formentin C, Joaquim AF, Ghizoni E. Posterior fossa tumors in children: current insights. Eur J Pediatr. 2023 Sep 8. doi: 10.1007/s00431-023-05189-5. Epub ahead of print. PMID: 37679511.