Spontaneous Delayed Hematoma at Operative Site in a Child with Anaplastic Ependymoma: A Rare Case

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Intratumoral hemorrhage is a known phenomenon, especially in high-grade brain tumors.¹ Delayed hematoma formation after tumor excision is rare and rarely reported. Hemorrhage into posterior fossa tumor is reported in preoperative, intraoperative,² or postoperative period. Contributing factors may be reverse herniation due to overdraining ventriculoperitoneal shunt, high altitude flight used for travelling before tumor surgery,³ hemorrhage in residual tumor, neomembrane formation associated with dural substitute used to repair the dural defect after suboccipital craniectomy⁴ (fragile vessels associated with nonmembranes

have been proposed as the source of hemorrhage), or local trauma to the operative site.

Authors are reporting a rare case in which spontaneous delayed hematoma formation was present after excision of posterior fossa anaplastic ependymoma in a young child.

A 9-year-old boy was brought to our department with features of raised intra cranial pressure (ICP). Noncontrast computed tomography (NCCT) head showed midline posterior fossa tumor with hydrocephalus (→Fig. 1A). MRI brain was suggestive of fourth ventricular tumor with heterogeneous enhancement (→Fig. 1B–D). VP shunt followed by near total excision of tumor

Fig. 1 (A) NCCT head showing solid cystic partially calcified midline posterior fossa tumor with upstream hydrocephalus. MRI brain (contrast) showing contrast-enhancing tumor: axial (B), coronal (C), and sagittal (D) images. Postoperative NCCT head showing good operative cavity with no hematoma (E). (F) On second admission, NCCT head showing operative cavity hematoma. (G) MRI brain (contrast) showing no residual tumor with operative site hematoma. (H) NCCT Head showing resolved posterior fossa hematoma. MRI, magnetic resonance imaging; NCCT, noncontrast computed tomography.

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Fig. 2 (A) Tumor showing predominant pseudorosette arrangement of cells with foci of necrosis (H&E $\times 100$). (B) Tumor cells showing relatively uniform round to oval nuclei with granular chromatin. Frequent mitotic activity is also noted (H&E $\times 400$). (C) Tumor cells showing cytoplasmic dot-like immunopositivity for EMA ($\times 400$). (D) Tumor cells showing high MIB-1 labeling index indicating high proliferative activity ($\times 400$). EMA, epithelial membrane antigen; H&E, hematoxylin and eosin.

was done. Tumor was greyish red, moderately vascular, firm, multilobulated, and had both solid and cystic components and firmly adhered to the floor of fourth ventricle, so a thin sheet of tumor was left attached to it. Postoperative NCCT Head was satisfactory (**►Fig. 1E**). Later, patient was discharged in satisfactory condition. Histopathology was suggestive of anaplastic ependymoma, MIB-1 labeling index—30 to 35% (WHO Grade III; **►Fig. 2**).

About 35 days after tumor surgery, patient came with recurrent vomiting and headache. NCCT Head showed operative site hematoma with intraventricular extension (**►Fig. 1F**). MRI brain with contrast showed no residual tumor with resolving hematoma at operative site (**►Fig. 1G**). NCCT Head at the time of discharge showed resolved operative site hematoma (**►Fig. 1H**). Later, patient discharged and he is under regular follow-up.

In our case, delayed hematoma formation at operative site may be due to neoangiogenesis at the tumor bed because thin sheet of tumor was left behind attached to the floor of fourth ventricle. However, further studies are required to confirm our observation.

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Conflict of Interest

None declared.

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