Remote cerebellar hemorrhage with acute hydrocephalus after supratentorial surgery

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We report the case of a 57-year-old man without previous medical history undergoing left frontotemporal meningioma surgery (*Figure 1*). The neurosurgical procedure was performed under general anesthesia using a target-controlled infusion of remifentanil and propofol. Intra-operative course went well without hemodynamic instability or surgical complication. In early post-operative period, our patient presented no sign of awakening. A cerebral tomodensitometry was performed urgently showing a massive bilateral cerebellar hemorrhage with a compression of the fourth ventricle (*Figure 2A*). After neurosurgeons and neuro-intensivit discussion, the posterior fossa hematoma was not accessible to surgery. Because of hydrocephalus's risk by the compression of the fourth ventricle, a continuous intracranial pressure (ICP) monitoring device was implanted. Three days later, an external ventricular drain (EVD) was necessary because of the increase of the ICP between 20 and 25 mmHg, the absence of neurological improvement and a ventricular dilatation on the cerebral tomodensitometry (*Figure 2B,C*). The neurological status improved drastically after cerebral spinal fluid (CSF) drainage, allowing the EVD withdrawal 2 weeks later and the discharge from the intensive care unit (ICU) without cerebral sequels. Three months after surgery, the patient remained well without language impairment or cerebellar syndrome. Remote cerebellar hemorrhage is a rare complication occurring after supratentorial surgery, whose physiopathology is not well understood. It would appear that remote cerebellar hemorrhage is a venous bleeding following to a venous infarction in the posterior fossa, due to an intra and postoperative loss of CSF. The cerebral tomodensitometry shows a classic pattern called "zebra sign" (*Figure 2A*) consisting in spontaneous blood hyperdensity lines in the cerebellum. RCH increases mortality and cerebral sequels after neurosurgery, with an incidence of 11.7% and 25.1% respectively. Advanced age and the bleeding's severity are the two factors associated with worth outcome.

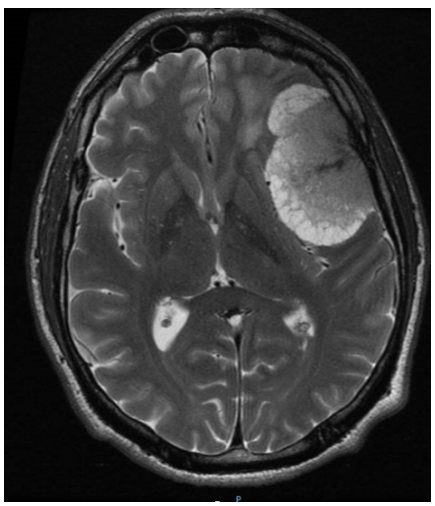

Figure 1 Transversal T2-weighted image showing a left multicystic frontotemporal meningioma with moderate edema.

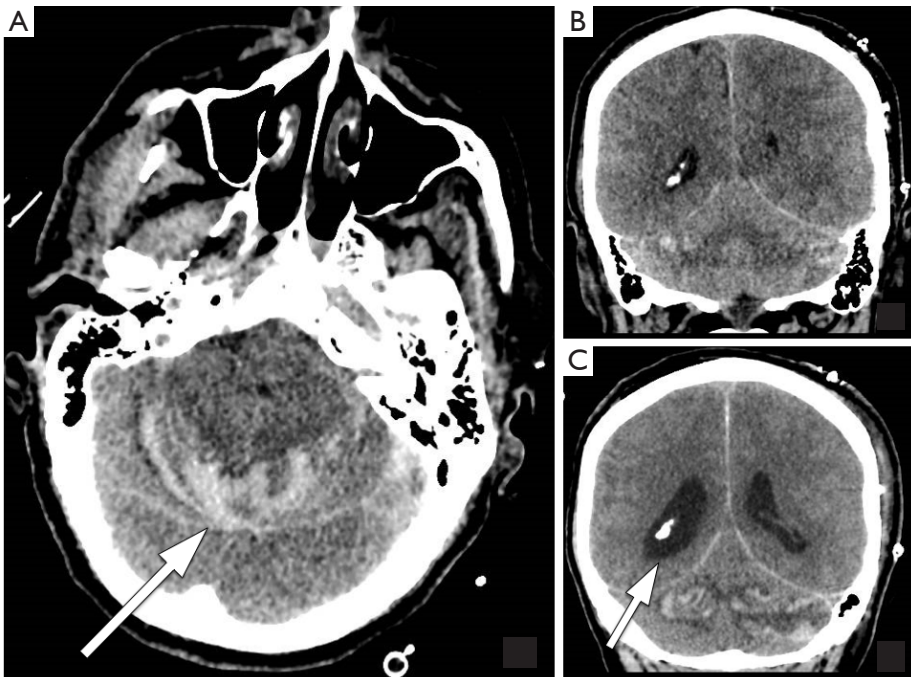

Figure 2 Cerebral tomodensitometry illustration of remote cerebral hemorraghe and related hydrocephalus. (A) Cerebellar tomodensitometry in transversal section showing a massive bilateral cerebellar hemorrhage also called "zebra sign" (white arrow). (B,C) Cerebral tomodensitometry in coronal section showing a dilatation of the lateral ventricles (white arrow). (B) Image taken at the time of the diagnosis of remote cerebellar hemorrhage; (C) image taken 3 days later just before the implantation of the external ventricular derivation.

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None.

Footnote

Conflicts of Interest: The authors have no conflicts of interest to declare.

Ethical Statement: The authors are accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved. Written informed consent was obtained from the patient's offspring for publication of this manuscript and any accompanying images.

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