

Commentary on: “Remote Cerebellar Hemorrhage after Revision Lumbar Spine Surgery”

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One exceptionally rare complication of spine surgery is a remote cerebellar hemorrhage, which is defined as a hemorrhage that is remote from the site of surgery, either in the cranium or the spinal column. The existence of a remote cerebellar hemorrhage has been reported by several authors,^{1–3} and it appears to be more common after supratentorial surgery rather than spine surgery.

Haller et al presented a case of an unexpected hemorrhage in the posterior fossa, which occurred remotely in time as well as remote to the site of surgery. For this particular case, the remote site involved a revision lumbar spine surgery.

Posterior fossa hemorrhages have variable presentations. Prompt identification of the hemorrhage is essential to properly manage it and to obviate deleterious sequelae. The authors used appropriate clinical judgment in accordance with current standards of care to identify the root cause of the patient's new neurologic deficits. It was quickly determined that the patient's symptoms did not correlate with the surgical site or procedure, allowing the authors to effectively intervene and achieve a positive outcome.

The pathophysiology of remote cerebellar hemorrhages after spine surgery is not completely understood, and several theories have been proposed.^{4,5} The most common presentation continues to be hypertension, followed by embolic infarct and stroke with hemorrhagic conversion. Another theory involves the downward displacement of the cerebellum, which occurs when there is a rapid decrease in the volume of cerebrospinal fluid (CSF) in the posterior fossa. This sagging of the cerebellum results in increased tension of the bridging veins in the posterior fossa, consequently increasing the risk of intraparenchymal or extraparenchymal hemorrhage. In this case, Haller et al identi-

fied a CSF leak as the likely cause of the cerebellar hemorrhage secondary to a sagging cerebellum.

For patients who have undergone spine surgery and who develop new neurologic deficits not attributable to the site of surgery, hemorrhage of the posterior fossa may be considered and evaluated with a computed tomography scan of the head. Clinicians must be cognizant of any subtle changes in a patient's neurologic status and accurately recognize when symptoms are unrelated to the operative procedures. The authors made a keen observation that remote cerebellar hemorrhages may occur even in the absence of an initial intraoperatively identified CSF leak. They were able to appropriately and promptly intervene, positively affecting the patient outcome.

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