Posterior Reversible Encephalopathy Syndrome as a Cause of Postoperative Blindness

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A 61-YR-OLD man with untreated prehypertension (blood pressure of 120/80–139/89 mmHg) underwent an L2–S1 decompressive laminectomy and L4–L5 instrumented fusion during general anesthesia. The intraoperative and immediate postoperative courses were uneventful. Initially, he had no visual complaints. On postoperative day 1, the patient experienced confusion, severe headache, and increasing hypertension (systolic blood pressure of 180–220 mmHg). On postoperative day 2, he experienced photophobia progressing to blindness over several hours. Magnetic resonance imaging of the head demonstrated patchy T2 signal increase without diffusion signal abnormality predominantly in the parietooccipital cortex (arrows) with scattered foci elsewhere. A diagnosis of posterior reversible encephalopathy syndrome was made. The patient’s hypertension was controlled with a nicardipine infusion, and during a period of 12 h his visual deficits resolved.

Posterior reversible encephalopathy syndrome is an uncommon cause of postoperative visual loss. It is associated with hypertension, preeclampsia, eclampsia, immunosuppression, transplantation (especially stem cell or bone marrow), autoimmune diseases, renal failure, and sepsis. The pathophysiology may involve endothelial dysfunction, loss of cerebral autoregulation, or vasospasm. Signs and symptoms include seizures, visual disturbances, altered mental status, headache, nausea, and vomiting. Diagnosis often is confirmed with magnetic resonance imaging, which classically demonstrates bilateral parietooccipital lesions, although lesions may occur throughout the entire brain. Treatment includes antihypertensive therapy, immunosuppressant discontinuation or modification, and the use of antiepileptic agents. Symptom resolution generally occurs within 1 week. Posterior reversible encephalopathy syndrome differs from ischemic optic neuropathy and retinal artery occlusion in its association with perioperative hypertension, presence of the aforementioned neurologic findings, and favorable prognosis.

References