Thunderclap Headache Secondary to Pneumocephalus Following Epidural Anesthesia

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Figure 1. Noncontrast computed tomography of the head at the level of the basal nuclei (left) and midbrain (right) demonstrates extensive supra and infratentorial pneumocephalus.

A 33-year-old woman presented in labor at 41 weeks of gestation. She received epidural anesthesia and developed a thunderclap headache immediately after the injection. The pain was of sudden onset, described as 10 of 10 in intensity and pressure in quality. It was the “worst headache” of her life. It was located in the top of the head and radiated to the right side when she laid on her left. There was no associated nausea, emesis, photophobia, phonophobia, visual changes, or other neurologic symptoms. Neurologic examination was normal. An emergent noncontrast computed tomography of the head showed extensive pneumocephalus without other abnormalities (Figure 1). The patient was treated with butorphanol with significant improvement in pain. She was able to deliver a healthy newborn, and the headache resolved by the next morning.

Both abrupt onset and a new headache during pregnancy are considered red flags for secondary headache disorders.¹

Potential causes in this scenario include subarachnoid hemorrhage, cerebral vein thrombosis, pituitary apoplexy, and posterior reversible encephalopathy syndrome.² Headache can rarely occur after epidural anesthesia, and it is often attributed to intracranial hypotension due to leakage of cerebrospinal fluid.³ Although the incidence of pneumocephalus after epidural anesthesia is unknown, it seems to be a very rare complication, as the available evidence is limited to case reports.^{4,5} Pneumocephalus should be

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considered as a cause of secondary headache in pregnancy, particularly if pain develops immediately after epidural anesthesia. In most patients, the headache resolves with conservative measures.

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