A 44-yr-old woman developed a sudden onset severe headache while undergoing a technically challenging epidural insertion before colectomy for ulcerative colitis. No obvious cerebrospinal fluid was noted in the needle and the needle was withdrawn. Given the severity, sudden onset, and persistent nature of the headache, an urgent noncontrast computed tomography scan of the brain was obtained to rule out a subarachnoid hemorrhage as a potential cause. The computed tomography brain demonstrated low attenuation material consistent with extra axial (arrowhead) and subarachnoid air (arrow). There was no evidence of intracranial hemorrhage. The patient’s headache resolved within 24 h, and a repeat computed tomography at 48 h was normal.

Pneumocephalus during epidural placement can arise secondary to inadvertent dural puncture when using the loss-of-resistance to air technique for identifying the epidural space. Air in the thecal space can cause meningeal irritation and sudden headache.1 Postdural puncture headache (PDPH) can be caused by either a cerebrospinal fluid leak or, less commonly, pneumocephalus. The two can be distinguishable clinically.1,2 The headache with pneumocephalus is typically sudden in onset, worse in the recumbent position, and generally lasts less than 3 days.2 A PDPH from cerebrospinal fluid leak typically occurring 24–48 h postepidural can be relieved by the patient lying supine and with intravenous hydration. It typically lasts longer than 2–3 days. Cerebrospinal fluid leak PDPH can be treated with an epidural blood patch,3 which would be ineffective if the headache was related to intrathecal air. Conservative management is usually all that is required for headache associated with intrathecal air.1,2 As such, distinguishing between the causes of PDPH is important. Imaging can be useful in cases where the cause of PDPH is neither clinically apparent nor easy to distinguish clinically.1

References