not consistent with C5 and 6 root damage alone. In these cases, a surgical aetiology should be sought.

**Declaration of interest**

None declared.

J. Womack*
I. Harper
Newcastle, UK
*E-mail: jonowomack@doctors.org.uk

2 Picard J, Meek T. Complications of regional anaesthesia. Anesthesiology 2010; 65 (Suppl. 1): 105–15
doi:10.1093/bja/aes088

**Delayed subdural haematoma complicated by abducens nerve palsy and cortical vein thrombosis after obstetric epidural anaesthesia**

Editor—A healthy 28-yr-old primigravida received epidural analgesia for labour pain (EpiLong Tuohy 18 G × 90 mm, Pajunk GmbH, Geisingen, Germany). An inadvertent dural puncture occurred at L3–4. The needle was pulled back and a peridural catheter inserted, which provided good analgesia for an uneventful delivery. A few hours later, the patient complained of posture-sensitive headache. Post-dural puncture headache (PDPH) was diagnosed. Theophylline (1 × 200 mg day⁻¹), paracetamol (4 × 1 g day⁻¹), and fluids were prescribed. On day 7, diplopia developed. Magnetic resonance imaging (MRI) showed bilateral subdural haematoma and diffuse meningeal swelling consistent with intracerebral hypotension (Fig. 1). On day 11, an autologous sterile blood patch (20 ml) was performed on the level of the initial epidural puncture site. The headache improved markedly and both headache and diplopia had improved by day 22. An MRI on day 17 showed that the haematoma had decreased, but an isolated thrombosis of a cortical vein (30 mm length) was detected. Treatment with low-molecular-weight heparin was started.

Bleeding history and Prothrombin A variant, factor V Leiden, MTHFR C677T Mutation, Protein C + S, FVII–XII, and VW-factor were all normal. The patient was discharged home on day 19. Three months later diplopia had receded completely and on a follow-up MRI, 10 months later, neither haematoma nor thrombosis was detectable.

After inadvertent dural puncture, the incidence of PDPH is up to 70%. The leakage of cerebrospinal fluid (CSF) causes PDPH. After CSF hypotension, traction on intracranial pain-sensitive structures may result. Symptoms often resolve within a few days spontaneously or when treated with analgesics and bed rest. More than 85% of PDPH will resolve within 6 weeks.

Our patient presented with PDPH, which was unresponsive to conservative therapy. A blood patch was only considered when clinical findings and MRI suggested intracerebral hypotension resulting in subdural haematoma and abducens nerve palsy with diplopia. The loss of CSF may shift the brain caudally and cause traction and tearing of subdural veins, resulting in a subdural haematoma. Nerve palsy as a result of subdural haematoma has been reported and the abducens nerve is often affected. This can be explained by its long route from the pons through the petrous bone and dura, making it vulnerable when the brain is displaced caudally. Conservative treatment is

---

**Fig 1** Bilateral subdural haematoma paramedian of the sagittal sinus and in the infratentorial region, bilateral meningeal swelling; MRI was done 8 days after inadvertent dural puncture.
frequently sufficient. Interestingly, in one case, PDPH resolved immediately after an epidural blood patch, while diplopia persisted for 2 weeks. However, there is no consensus as to the benefit of an epidural blood patch. We performed an epidural blood patch because we assumed that CSF leakage, PDPH, subdural haematoma, and diplopia were causally related.

Cortical venous thrombosis after inadvertent dural puncture is rare but potentially life-threatening. Some hypothesize that thrombosis is a result of pregnancy-induced hypercoagulability and intracranial hypotension, causing compensatory vasodilatation and stasis of blood flow. Subdural haematoma and cortical vein thrombosis were undetectable on MRI follow-up after 10 months.

**Declaration of interest**

None declared.

A. Fiala*
G. Furgler
E. Baumgartner
P. Paal
Innsbruck, Austria
*E-mail: anna.fiala@uki.at


doi:10.1093/bja/aes089