Fig. 1. Effects of sevoflurane and isoflurane on platelet aggregation. (A) Sevoflurane (0.13 mm), with 0.225% ethanol, completely suppressed epinephrine (4 μM)-induced secondary aggregation. (B) Isoflurane (0.56 mm), with 0.5% ethanol, did not affect epinephrine (3 μM)-induced platelet aggregation.

References


2. Ueda I. The effects of volatile general anesthetics on adenocine diphosphate-induced platelet aggregation. Anesthesiology 1971; 34:405-8


(Accepted for publication June 19, 1997)

Postdural Puncture Headache and Epidural Blood Patch

To the Editor.—The case report by Borum et al.1 illustrates the difficulty in the differential diagnosis of headache in a parturient. Postpartum headache may be due to dural puncture, eclampsia, meningitis, or cortical vein thrombosis. Epidural blood patch is a recognized treatment for postdural puncture headache (PDPH). However, in the other conditions, injection of blood in the epidural space may cause complications.

Prolonged leakage of cerebrospinal fluid (CSF) may occur after a dural puncture. Before performing a blood patch, it is advisable to demonstrate this leakage. Cerebrospinal fluid rarely emerges from the needle when an epidural is performed in a patient with PDPH. In a series of 50 patients with PDPH, the CSF emerged from the epidural needle in only 8 patients (16%).2 However, insertion of an epidural catheter and gentle aspiration revealed CSF in the epidural space of all these patients.

The compliance of the dura depends on the volume and pressure of CSF contained within it. The CSF pressure is low in patients with PDPH.3 The compliance of the dura decreases when the CSF pressure is low. Reduction in the compliance of the dura lowers the epidural pressure.4 The epidural pressure gives a rough estimate of the prevailing CSF pressure.5 The mean epidural pressure of parturients is approximately 15 cm H2O in the lateral posture.6 However, it decreases in patients with PDPH. In 50 patients with PDPH the mean epidural pressure was 6.4 cm H2O.

Demonstration of free CSF in the epidural space and a low epidural pressure assists in the differential diagnosis of PDPH in the parturient. Before performing a blood patch, it is advisable to demonstrate free CSF in the epidural space and a low epidural pressure. Epidural pressure is easily measured using a 16-gauge (1.1 mm OD) epidural catheter as a simple manometer.2,4 Injection of blood through a 16-gauge epidural catheter is easy and safe.2,4

J. L. Shah, M.D.
Department of Anaesthetics
City Hospital NHS Trust
Dudley Road
Birmingham, B18 7QH
England

References

In Reply.—We agree with Dr. Shah that our case report illustrates the difficulty in the diagnosis of postpartum headache, although his suggestion that a cerebrospinal fluid (CSF) leak be demonstrated before performing epidural blood patch for postdural puncture headache (PDPH) does not conform with current practice. The history of dural puncture followed by a postural headache establishes the diagnosis in a manner sufficient to proceed with epidural blood patch.

Shah advocates the insertion of an epidural catheter for establishing the presence of low CSF pressure and CSF leak and for injection of the epidural blood patch. Although effective in supporting the diagnosis of PDPH, epidural catheter insertion could have several drawbacks, if used in all cases of PDPH. Because the epidural blood patch should be injected as close to the site of dural puncture as possible and because the spread of the blood is typically cephalad, the insertion of a catheter might reduce the accuracy of the injection. Also, vascular injury by the catheter could cause bleeding in the epidural space, thus unnecessarily increasing the volume of the blood patch.

Shah has suggested that epidural catheter insertion for CSF aspiration might be helpful when a patient has a postural headache after multiple attempts at epidural needle placement and when the stilette was not removed from the needle, resulting in the possibility of an unrecognized dural puncture. In our case report, the atypical headache appeared after the second epidural blood patch. An epidural catheter inserted at this time might have entered the previously placed blood patch, thus rendering pressure measurements and aspiration testing useless.

Stanley E. Borum, M.D.
Department of Anesthesiology
L. Gill Naul, M.D.
Department of Radiology
Texas A&M University Health Science Center
Charles McLeskey, M.D.
Department of Anesthesiology

Anesthesiology, V 87, No 4, Oct 1997

References


(accepted for publication June 19, 1997)