International Journal of Obstetric Anesthesia (2014) 23, 175–193

ELSEVIER
www.obstetanesthesia.com

CASE REPORTS

An intrathecal catheter in a pregnant patient with idiopathic intracranial hypertension: analgesia, monitor and therapy?

D.M. Moore, M. Meela, D. Kealy, L. Crowley, R. McMorrow, B. O'Kelly
Department of Anaesthesia, National Maternity Hospital, Dublin, Ireland

ABSTRACT
Idiopathic intracranial hypertension is important for the obstetric anaesthetist as it is mostly seen in obese women of childbearing age. The incidence is likely to increase as the obesity pandemic grows. Management of labour analgesia in these patients can be complex and requires multidisciplinary input. We successfully managed labour analgesia in a parturient with idiopathic intracranial hypertension with an intrathecal catheter. The possibility of using this catheter as a cerebrospinal fluid drain and pressure monitor was considered and is discussed along with potential complications.
© 2013 Elsevier Ltd. All rights reserved.

Keywords: Labour analgesia; Idiopathic intracranial hypertension; Intrathecal catheter

Introduction

Idiopathic intracranial hypertension (IIH) is a condition comprised of headache, papilloedema and raised intracranial pressure (ICP) with normal cerebrospinal fluid (CSF) composition, and no identifiable neuropathology on relevant evaluations.[1] The incidence of IIH is highest in obese women of reproductive age with an estimated annual incidence of 4 in 100 000.[2,3] Previously, IIH has been inappropriately referred to as benign intracranial hypertension. It does not, however, always follow a benign course and may be associated with debilitating headaches and, rarely, complete visual loss. Pregnancy does not appear to impact on the incidence of IIH or alter the natural history of the disease.[4] Factors such as obesity and ICP control can make the management of peripartum analgesia and anaesthesia in these patients challenging.

Case report

A 27-year-old nulliparous woman presented to our high-risk obstetric clinic at 33 weeks of gestation for an anaesthetic assessment and peripartum plan. She had a four-year history of IIH which presented with headaches and blurred vision. Her diagnosis had been confirmed with a CSF pressure of 28 mmHg recorded by a neurologist with a simple column manometer. Her management involved daily oral acetazolamide. Depending on symptoms, she required therapeutic lumbar puncture every 6–12 months, the most recent of which was performed at 32 weeks of gestation. Her obstetrician and neurologist agreed that the patient's preferred option of a vaginal delivery was appropriate; however, the second stage of labour should be limited to 30 min. If this time limit were exceeded, or in the event of persistent symptoms associated with IIH, an emergency caesarean section should be performed.

On examination at 33 weeks, her body mass index was 40 kg/m^2. She had a Mallampati class III airway and a thyromental distance <6 cm. Due to her body habitus, the lumbar intervertebral spaces were difficult to palpate. An intrathecal catheter was deemed the best analgesic option, and if required, the most efficient way of delivering anaesthesia with a minimal bolus dose. The patient was counselled on the increased risk of infection and postdural puncture headache (PDPH). As a secondary function, we planned to use the intrathecal catheter for monitoring ICP during labour, and as a CSF drain if a rising ICP were associated with symptoms.

At 40 weeks of gestation, the patient presented in the first stage of labour. The consultant anaesthetist was informed and neuraxial analgesia performed. With the patient in the sitting position, the epidural space was located with an 18-gauge Tuohy needle on the first attempt at 7 cm with loss of resistance to air at the

Accepted October 2013
Correspondence to: Dr David M. Moore, Department of Anaesthesia, National Maternity Hospital, Holles Street, Dublin 4, Ireland.
E-mail address: mooredm82@googlemail.com

presumed L2-3 intervertebral space. The dura was then punctured with CSF flow, and an intrathecal catheter (915 mm, 20-gauge closed-ended multiport catheter, Portex, Hythe, Kent, UK) was threaded easily with 5 cm left in the intrathecal space. Attempts were made to aspirate CSF from the catheter but there was minimal back flow (<1 mL).

Apparatus used to measure ICP consisted of a fluid-coupled intrathecal catheter with external strain gauge (Fig. 1). The intrathecal catheter was attached to a 0.2 micron, hydrophilic two-way filter, which was in-turn attached to a pressure transducer (strain-gauge). The system was primed with saline and the transducer was zeroed to the atmosphere and positioned at the level of the external auditory meatus. We used a standard central venous pressure transducer, line, and flushing mechanism. ICP measurements were recorded at 5-min intervals and before and after intrathecal catheter bolus injections. Initial ICP was 22 mmHg.

To maximise patient safety, the intrathecal catheter injection port on the filter was clearly labelled. The attending midwives were informed of the mode of analgesia. Two on-duty anaesthetists were the only staff members authorised to access the catheter injection port. To minimise the risk of infection, all boluses were delivered via the filter, and the filter was never disconnected from the catheter.

A bolus of isobaric bupivacaine 2 mL (2.5 mg) resulted in a sensory block to ice to T6 bilaterally with a minimal motor block. Over the next 2.5 h, the patient required two further boluses of isobaric bupivacaine (each bolus 2 mL, 2.5 mg). Each bolus was flushed with saline 2 mL. The ICP fluctuated between 22 and 29 mmHg and the patient reported no IIH symptoms. The second stage of labour lasted 10 min. The ICP peaked at 43–60 mmHg when pushing, returning to 25–27 mmHg when not expulsive. Satisfactory analgesia was achieved and the patient did not experience headaches or visual disturbances during the labour. A healthy 3.66 kg baby girl was delivered vaginally. The ICP stabilized at 23 mmHg before removal of the intrathecal catheter 1 h postpartum.

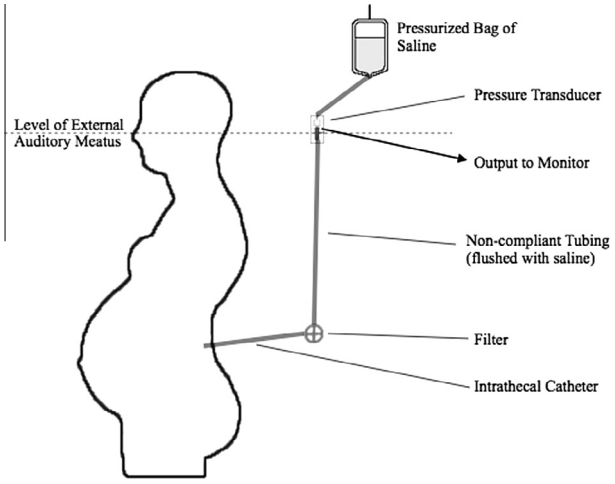

Fig. 1 Apparatus for intrathecal pressure monitoring

Unfortunately, the patient complained of a postural occipital headache on the first postpartum day which was not consistent with her IIH headache. She was diagnosed with a PDPH. Conservative and pharmacological treatments proved inadequate and she reported a significant disruption in her activities of daily living. On day nine postpartum, she received an autologous epidural blood patch. An 18-gauge Tuohy needle was sited at the presumed L3-4 interspace. There was loss of resistance to air at 7 cm and 15 mL of blood was injected. Injection was stopped when the patient reported back pain. She experienced instant relief of symptoms and rested in the supine position for 4 h. She remained asymptomatic and was discharged the following day.

Discussion

Before pregnancy, our patient was managed with acetazolamide, a carbonic anhydrase inhibitor and serial lumbar punctures, both recognised treatments for IIH. Acetazolamide is possibly teratogenic but its administration was continued, following counselling, due to the relative lack of other treatment options.[5]

An antenatal anaesthetic review was conducted to discuss analgesia options during labour. Parenteral opioids were considered relatively contraindicated, as the resulting respiratory depression and the probable rise in PCO_2 would increase cerebral blood flow and ICP. Our patient presented with a potentially challenging airway, which is a strong indication for securing reliable neuraxial access for analgesia, and potential anaesthesia if required. Effective peripartum analgesia was also desirable to blunt any sympathetic response and corresponding rise in ICP.

Epidural and combined spinal-epidural analgesia were considered, and have been used successfully in the management of similar patients.[6–8] However, the larger fluid boluses involved in epidural analgesia and anaesthesia are known to acutely increase the epidural pressure.[9] We were aware that an emergency caesarean section was likely. In this situation, an epidural bolus of up to 20 mL would be required to achieve adequate anaesthesia. This bolus dose, coupled with a sympathetic stress response, might induce a rise in ICP. The consequence of this rise in a patient with IIH in labour is not clear, but could possibly increase the risk of symptoms and ocular complications.

Another consideration was the placement of an intrathecal catheter, which is also described in the literature.[10] This was our preferred option over an epidural for a number of reasons. Smaller volumes of injectate would be required, and this would probably minimise the im-

Download English Version:

https://daneshyari.com/en/article/2757505

Download Persian Version:

https://daneshyari.com/article/2757505

Daneshyari.com