Case report

Unusually early onset of post-dural puncture headache after spinal anaesthesia using a 27G Whittacre needle

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We present a case of a post-dural puncture headache occurring 20 min after spinal anaesthesia using a 27-Gauge Whittacre needle. The unusually early occurrence of this complication is thought to be the first of its kind reported in the literature and highlights the novelty of this case.

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Spinal anaesthesia is an established technique for urological surgery. The frequency of post-dural puncture headache (PDPH) using a 27G Whittacre needle has been quoted as 0.5% with the majority of cases occurring after 24 h.1 We report a case where PDPH occurred within 20 min of spinal anaesthesia being performed.

Case report

Spinal anaesthesia was performed in a 54-year-old female smoker with brittle asthma for transobturator tape insertion. Using a strict aseptic technique in the sitting position, 2% lignocaine was infiltrated at Tuffiers line using a 25G 16 mm (Terumo, Belgium) and a 23G 30 mm needle (Terumo, Belgium) before inserting the 27G Whittacre needle introducer (Becton Dickinson, Spain). At first attempt, removal of the Whittacre stylet demonstrated cerebrospinal fluid (CSF) completely filling the needle hub before 2.5 ml of 0.5% heavy bupivacaine and 15 μg of fentanyl were immediately injected. A bilateral block to T10 dermatome was demonstrated after 5 min. Twenty minutes post-spinal and prior to incision, the patient complained of an intolerable occipital headache, neck pain, and stiffness, associated with photophobia and tinnitus. Surgery was abandoned.

The patient exhibited marked neck stiffness and photophobia, and further examination, including that of the cranial nerves, was otherwise unremarkable. The headache was positional, exacerbated by an upright position and lessening in the supine position. She was apyrexial and had no history of migraines or similar episodes. There was no evidence to support withdrawal symptoms to substances such as caffeine. An urgent computed tomography (CT) scan of the brain was normal. All symptoms, except the postural headache, resolved within 6 h.

Within a week the postural headache settled with conservative treatment consisting of oral analgesia while maintaining adequate hydration. An epidural blood patch was felt unnecessary due to the gradual clinical improvement. There was no neurological sequelae. Given the lack of alternative pathology and the clinical course, a diagnosis of PDPH was made.

Discussion

Such an early onset of headache after spinal anaesthesia is rare and this is thought to be the first reported case to occur within the first hour. PDPH is a diagnosis of exclusion and is due to loss of CSF as first described by Bier, thus lowering of CSF pressure. However, whether the headache is due to traction on intracranial structures or due to compensatory cerebral venodilatation is debated.1 The main risk factors for our patient included her gender and upright positioning for spinal insertion, but as described in a review by Turnbull and Shepherd, PDPH is also related to the size of the dural perforation and thus, needle size, needle bevel design and orientation, localized thickness of the dura, experience of the operator, and

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The frequency of PDPH using a 27G Whittacre needle has been quoted as 0.5% in one study, but may not be a true reflection due to the inadequate numbers of cases studied. Indeed, Moen et al. have commented on the vast numbers that would be required for prospective studies to quantify complication rates after spinal anaesthesia and the inherent risk of underreporting in retrospective studies.

In this patient, there is the possibility that the dura may have been breached by one of the other needles or with residual chlorhexidine from the skin. However, the skin was dry prior to local anaesthetic infiltration and there was no evidence of inadvertent CSF loss prior to syringe connection. Albeit, most studies measure the incidence of PDPH at 24 h onwards and no reports have been found of a PDPH as early as 20 min using this or other gauges of needle.

Subdural and other intracranial haemorrhages have been reported after both intentional and unintentional dural puncture. Central venous thrombosis and pre-existing brain pathology (e.g. tumours, chiari malformation) would also be unlikely in a patient with no evidence on CT scan, and complete resolution of all symptoms except a postural headache within 6 h. Migraines affect 18% of the female population but the chance of a migraine de novo in someone with no history in this situation is unknown.

Pneumocephalus is increasingly recognized as a cause of early headache when using loss of resistance to air as a technique for epidural placement, and an earlier onset and resolution of PDPH has been demonstrated in these patients when compared with LORS. The majority of patients demonstrated intrathecal air on brain CT which was normal in this case. In addition, the amount of air that would be injected intrathecally with this epidural technique and that using a 27G Whittacre and a syringe devoid of obvious air bubbles is not comparable. The only report found in the literature of symptomatic pneumocephalus during spinal anaesthesia was where 2 ml of air was intentionally injected.

In view of the clinical symptoms of postural headache, associated with meningism, photophobia, and tinnitus and exclusion of other diagnoses, we have reported the first case of PDPH to occur within 20 min of performing spinal anaesthesia. Lack of published cases regarding a spinal PDPH within the first half-hour using a 27G Whittacre needle reflects the novelty of this case report, or a possible reflection of underreporting.

References