Case Report
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Subdural hygroma presenting as a potential late complication of epidural anesthesia

Abstract

Postpartum headache in parturients receiving labor epidural analgesia occurs not infrequently. Much less often, spontaneous CSF leaks can cause intracranial hypotension and orthostatic headache. Although neuroimaging can aid differential diagnosis, conservative treatment and epidural blood patch make sense for temporally-related symptoms. We report a case of recurrence of orthostatic headache one month following successful treatment of post-dural puncture headache with epidural blood patch.

Keywords: epidural, orthostatic headache, subdural hygroma

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Introduction

Orthostatic headaches are a common presenting symptom of dural punctures following epidural anesthesia. Symptoms recurring following successful treatment with epidural blood patch and the subsequent development of subdural hygromas, while a recognized complication, is rare in the setting of spinal anesthesia. There are several other more common causes of orthostatic headaches in postpartum patients such as pre-eclampsia, migraines, drug-induced headache, intracranial pathologies and postpartum depression.[1] This can lead to missed or delayed diagnosis with significant morbidities[2,3] and should therefore be considered when evaluating orthostatic headaches in the postpartum population.

Case report

A 35-year-old primigravida at 41 weeks' gestation underwent uncomplicated, spontaneous, primary vaginal delivery. She had received epidural analgesia via a 19 Ga. FlexTip Plus® (single open end hole) catheter inserted through a 17 Ga. x 3-3/8" Wise needle at the L3-L4 interspace with negative aspiration and no response to a 3 mL test dose containing lidocaine with epinephrine. A few hours after delivery, the patient experienced neck stiffness, described as muscular in nature; she received oral acetaminophen and ibuprofen. The next day, she complained of persistent, severe head and neck pain. Suspecting a post-dural puncture headache, the next day we performed an epidural blood patch using 18 mL of the patient's blood at a L2-3 level, with immediate, lasting symptom relief. A month later, the patient presented in moderate distress with orthostatic occipital headache, radiating bi-directionally to the crown and the neck. Computed topography revealed bilateral age-indeterminate, hypodense, high frontoparietal, extra-axial subdural fluid collections. An MRI found intracranial hypotension, vivid enhancement of pachymeninges, and subdural hygromas (Figure 1) (Figure 2). Lumbar spine MRI returned normal, without pseudomeningocele. Imaging of the cervical and thoracic region did not occur. Conservative treatment with flat bedrest and an abdominal binder led to discharge home several days later with moderate improvement of symptoms.

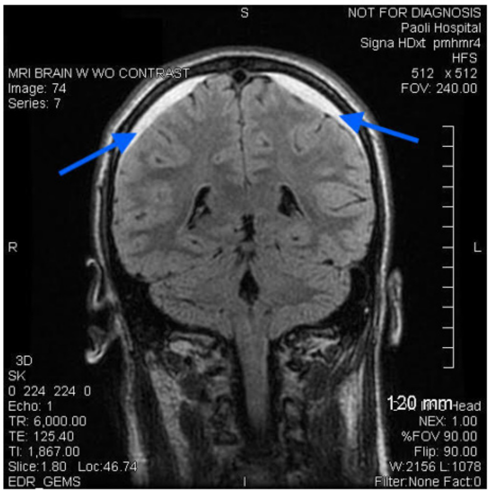

Figure 1 Coronal view of patient's MRI of the brain with and without contrast showing bilateral subdural hygromas.

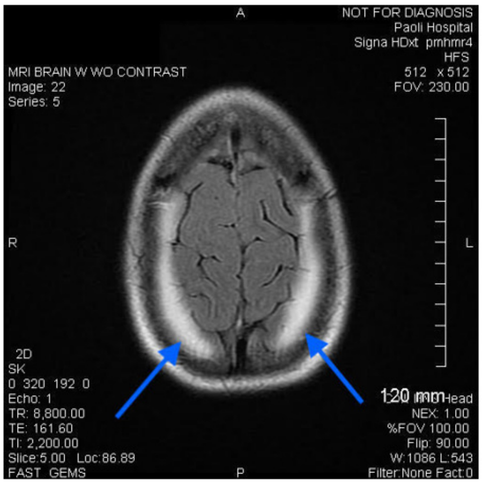

Figure 2 Axial view of patient's MRI of the brain with and without contrast showing bilateral subdural hygromas.

Discussion

We estimate the 2019 incidence of post-dural puncture headache in the US between 19,600 and 81,500 cases, based on 3,745,540 births,[5] 68% epidural anesthesia rate,[4] a 1.5-4.0% dural puncture rate,[6,7] and headache in 50-80% of dural punctures.[7] Epidural blood patch, used when symptoms do not resolve with conservative strategies or with severe symptoms needing more prompt attention, has a success rate of 85-90%.[8,9] Persistent orthostatic headache suggests more definitive diagnosis via MRIs of both cranium and spine. Spontaneous CSF leaks resulting in intracranial hypotension are extremely rare (5 per 100,000) and often present as orthostatic headache.[10] No data address the incidence of postpartum, spontaneous CSF leak, with resultant confounding with post-dural puncture headache.[11,12]

Conclusion

In this patient, no signs of dural puncture at epidural placement belied a CSF leak related headache clearly cured with epidural blood patch. Could the recurrent orthostatic headache have arisen from dissolution of the epidural blood patch with resultant intracranial hypotension? A separate, spontaneous CSF leak appears unlikely. In postpartum patients presenting with orthostatic headache, both possibilities should be considered as the consequences of a missed CSF leak can be catastrophic; imaging of both head and spine can facilitate diagnosis with conservative measures often being an appropriate treatment option.

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Conflicts of interest

There are no conflicts of interest to report.

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