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A Rare Complication of Spinal Anesthesia: Subdural Hematoma

Nadir Bir Spinal Anestezi Komplikasyonu: Subdural Hematom

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Summary

The most common complication of spinal anesthesia is the postdural puncture headache. Any injury of the dura may cause headaches. After the injury of the dura, cerebrospinal fluid leakage may occur and subdural hematoma may be seen as a result of the increased tension in the veins between the cortex and the dural sinuses. Herein, we present a patient with persistent headache after the spinal anesthesia given during labor, and emphasize a rare complication of spinal anesthesia which is subdural hematoma. *(Turkish Journal of Neurology 2014; 20:20-22)*

Key Words: Spinal anesthesia, headache, subdural hematoma

Özet

Spinal anestezinin bilenen en sık komplikasyonu postdural ponksiyon baş ağrısıdır. Durada oluşan herhangi bir hasar baş ağrısına neden olmaktadır. Duranın zedelenmesi ile beyin omurilik sıvısı sızıntısı meydana gelebilir ve gerilmeye bağlı olarak korteks ve dural sinüsler arasındaki venlerin yırtılması sonucu subdural hematom görülebilir. Bu yazıda doğum esnasında yapılan spinal anestezi sonrası geçmeyen baş ağrısı olan bir olguyu sunarak nadir de olsa görülebilecek subdural hematom komplikasyonunu vurgulamayı amaçladık. (Türk Nöroloji Dergisi 2014; 20:20-22)

Anahtar Kelimeler: Spinal anestezi, başağrısı, subdural hematom

Introduction

Being a common alternative to general anesthesia, spinal anesthesia may cause a variety of complications. The most common one among such complications is the postdural puncture headache. Any damage to the dura matter causes headache. Bleedings occurring during spinal puncture are generally confined to that area. A cerebrospinal fluid (CSF) leakage may take place as a result of dura damage during spinal anesthesia and the veins between the cortex and the dural sinuses can be torn due to this change (1). If the headache persists or does not go away with rest, intracranial hematoma should be suspected (2,3). Subdural hematoma following spinal anesthesia is a rare but potentially fatal condition (3). In this case report, we discuss a subdural hematoma complication following spinal anesthesia.

Case

35-year-old female patient was admitted to the labor and delivery service 45 days ago for Caesarean section. The patient was followed closely during her pregnancy and did not have an existing medical condition. The patient's pre-operative state and examination was normal. The operation took place after spinal anesthesia. There were no complications before or after the operation. While her headache was severe during the first few days following the operation, it got weaker with rest, analgesics and proper hydration. The patient was discharged and advised to continue the hydration and rest. After the discharge, the severity of her headache fluctuated every day. Nausea and vomiting sometimes accompanied the headache. Even though resting and analgesics sometimes alleviated the pain, the persistence of the

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headache necessitated a medical examination, in which she was found normal, cooperative and fully conscious.

In the magnetic resonance imaging (MRI) examination, subdural hematoma at the late sub-acute stage with 14mm at the thickest section, extending from right frontoparietal region to occipital region, appearing hyperintense in the T1, T2 and FLAIR sequences. Since she did not have a history of trauma, this finding was attributed to a subdural hematoma due to the spinal anesthesia complication (Figure 1, 2, 3). Intraparenchymal hemorrhage was not observed. The patient was not scheduled for surgery and was left for spontaneous resorption with control examinations. In the MRI taken at the second month follow-up, subdural hematoma was completely resorbed and there were no residual hematoma.

Discussion

Subdural hematoma following spinal anesthesia is an extremely rare but important anesthesia complication. Because of the CSF leakage after dural damage, the brain shifts caudally, which causes hemorrhages of the bridging dural veins, dural sinus walls or small cerebral cortical veins. The reason why subdural veins are more susceptible to tearing is that the wall structure of the bridge veins in those locations are microscopically weaker compared to other vein walls. Use of anticoagulants, cerebral atrophy or dehydration may increase the risk of intracranial hemorrhage (1).

Vomiting, headache, blurry vision or drowsiness following spinal anesthesia can be meaningful for subdural hematoma (4). In addition, nausea, tinnitus, hearing loss, diplopia and blindness may also develop (5). The most frequent symptom, however, is the headache, with 40% of the cases after spinal anesthesia (3). Starting generally at around 72 hours, this duration can be as long as 14 days (5). Typically, the pain increases when the person is standing up or sitting and decreases when lying down. It is more commonly seen in the frontal and orbital areas and propagates towards the back of the neck. With analgesics, hydration and rest, the pain usually goes away in a few days. It was accepted that these symptoms emerge as a result of dural damage and CSF leakage exceeding 250 ml. The daily CSF loss is undercompensated in this

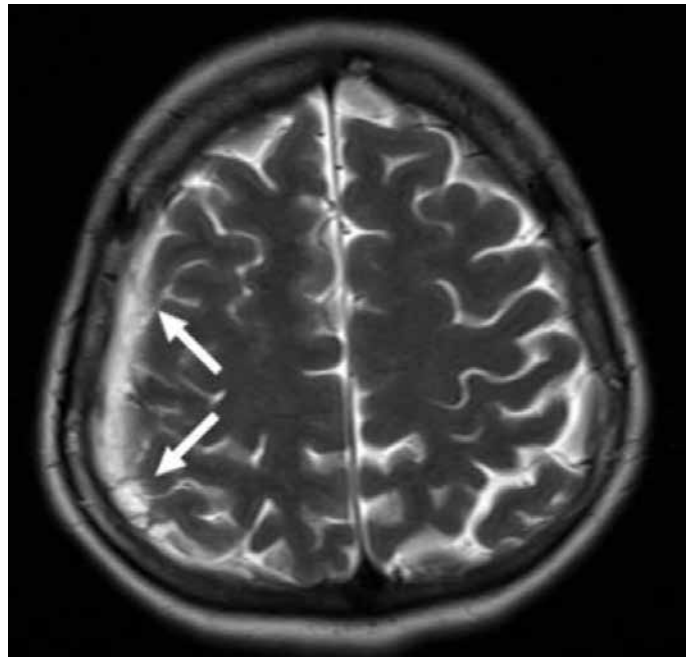

Figure 2. In the axial slice of T2-weighted image, the thin, hyperintense subdural hematoma on the right frontoparietal region can be seen.

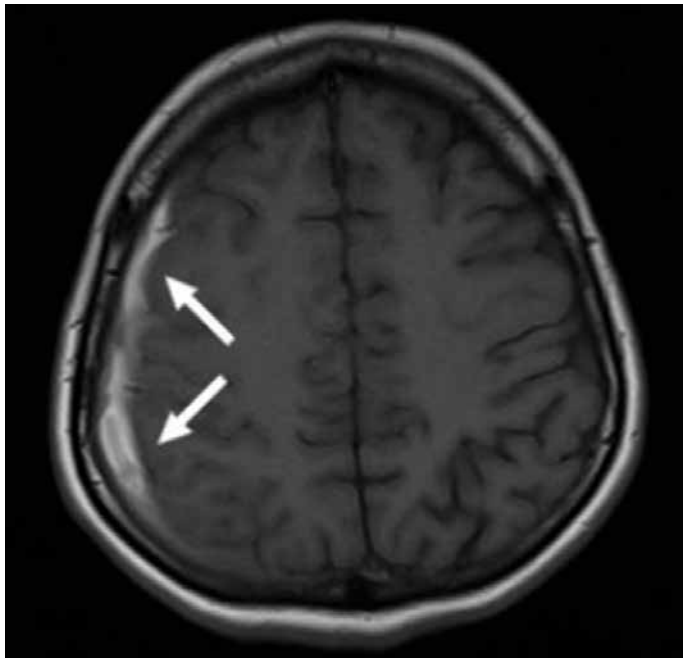

Figure 1. In the axial slice of T1-weighted image, the thin, hyperintense subdural hematoma on the right frontoparietal region can be seen.

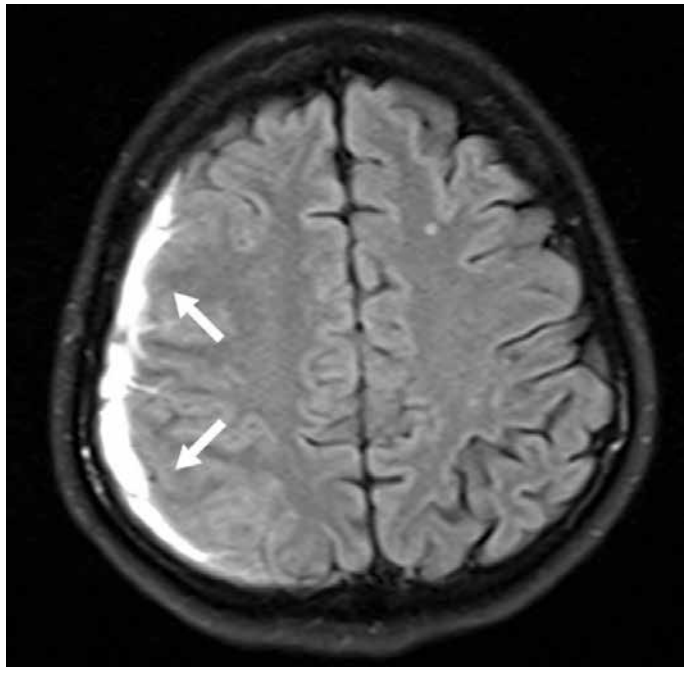

Figure 3. In the axial slice of FLAIR image, the thin, hyperintense subdural hematoma on the right frontoparietal region can be seen.

condition and CSF pressure declines. To make up for this leakage, epidural patching or oral caffeine is suggested (6). Intracranial hemorrhage may not always present with symptoms. A change in the headache character, prolonged duration and persistence should suggest subdural hematoma.

Subdural hematomas may be seen as hyperacute, acute, subacute and chronic. The diagnosis may make use of computerized tomography (CT) and MRI. Thin hemorrhages at the late subacute stage can easily be overlooked since they will be seen as isodense in CT. In these situations, MRI can easily allow for the diagnosis in the case of ambiguity. In our case as well, the late subacute stage subdural hematoma diagnosis was made after prolonged headache following spinal anesthesia using MRI.

In conclusion, persistent headaches following spinal anesthesia should be evaluated with caution. It should be kept in mind that a complication as severe as subdural hematoma can be the underlying cause and the proper measures should be taken by using imaging techniques.

References

1. Park IB, Moon SY, Kim YY, Kwon YE, Lee JH. Acute-on-chronic subdural hematoma by spinal anesthesia in a patient with undiagnosed chronic subdura lhematoma -A case report-. Korean J Anesthesiol 2011;61(1):75-78.
2. Vaughan DJA, Stirrup CA, Robinson PN. Cranial subdural haematoma associated with dural puncture in labour. Br J Anaesth 2000;84(4):518-520.
3. Acharya R, Chhabra SS, Ratra M, Sehgal AD. Cranial subdural haematoma after spinal anaesthesia. Br J Anaesth 2001;86(6):893-895.
4. Kelsaka E, Sarihasan B, Baris S, Tur A. Subdural hematoma as a late complication of spinal anesthesia. J Neurosurg Anesthesiol 2003;15(1):47-49.
5. Turnbull DK, Shepherd DB. Post-dural puncture headache: pathogenesis, prevention and treatment. Br J Anaesth 2003;91(5):718-729.
6. Gül M, Bölükbaşı FH, Sözenoğlu İ, Işık N, Çelik M, Elmacı İ. A Case of Chronic Subdural Hematoma After Spinal Anaesthesia. Türk Nöroşirüji Dergisi 2007;17(3):183-187.