



## A Rare Complication After Spinal Anesthesia: Intracranial Subdural Hematoma

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### Case Report

#### History

Received: 25/03/2024

Accepted: 25/06/2024

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### ABSTRACT

Acute & chronic intracranial subdural hematoma is usually caused by trauma. However, it is a rare and serious complication after spinal anesthesia. A 38-year-old woman was brought to the emergency department by her relatives with complaints of sudden change in consciousness. It was learned that the patient gave birth by cesarean section under spinal anesthesia 3 days ago. It was anamnesized that there was no abnormality in the operation, the patient had a headache during the follow-up in the service and was diagnosed as post-dural puncture headache, analgesics were prescribed and she was discharged with recommendations. It was determined that the headaches continued after discharge and sudden change in consciousness occurred 2 hours after discharge. On physical examination, the patient was intubated because of poor general condition and Glasgow coma scale score of 8. The patient had 4/2 anisocoria on the left side. A brain CT scan showed a 6 mm subacute subdural hematoma in the left frontotemporoparietal region at the widest part. There was an 8 mm shift effect to the right of the midline, the sulci were obliterated and the cerebral tissue was mildly edematous. The patient was consulted to neurosurgery because of subacute subdural hematoma, shifting and anisocoria and was transferred to neurosurgery intensive care unit for emergency craniotomy and hematoma evacuation. This case report describes an acute subdural hematoma after spinal anesthesia and emphasizes that when using spinal anesthesia, it should be kept in mind that headache does not always mean hypotensive headache associated with spinal anesthesia and that a catastrophic complication of subdural hematoma may also occur.

**Keywords:** Spinal Anesthesia, Subdural Hematoma, Headache

## Spinal Anestezi Sonrası Nadir Bir Komplikasyon: İntrakraniyal Subdural Hematom

### Olgu Sunumu

#### Süreç

Gelis: 25/03/2024

Kabul: 25/06/2024

#### Telif Hakkı



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### ÖZET

Akut ve kronik intrakraniyal subdural hematom genellikle travma nedeniyle oluşur. Ancak spinal anestezi sonrası nadir ve ciddi bir komplikasyondur. 38 yaşında kadın hasta yakınları tarafından ani bilinç değişikliği şikayeti ile acil servise getirildi. Hastanın 3 gün önce spinal anestezi altında sezaryen ile doğum yaptığı öğrenildi. Operasyonda herhangi bir anormallik olmadığı, hastanın servisteki takibi sırasında baş ağrısı olduğu ve post-dural ponksiyon baş ağrısı tanısı aldığı, analjezik reçete edildiği ve önerilerle taburcu edildiği öğrenildi. Taburcu olduktan sonra baş ağrısının devam ettiği ve taburcu olduktan 2 saat sonra ani bilinç değişikliği olduğu tespit edildi. Fizik muayenede genel durumu kötü ve Glasgow koma skalası skoru 8 olan hasta entübe edildi. Hastanın sol tarafında 4/2 anizokori vardı. Beyin BT taramasında sol frontotemporoparietal bölgede en geniş yerinde 6 mm subakut subdural hematom görüldü. Orta hattın sağına doğru 8 mm'lik bir kayma etkisi vardı, sulkuslar oblitereydi ve serebral doku hafif ödemliydi. Hasta subakut subdural hematom, şift ve anizokori nedeniyle beyin cerrahisine konsülte edildi ve acil kraniyotomi ve hematom tahliyesi için beyin cerrahisi yoğun bakım ünitesine transfer edildi. Bu olgu sunumu spinal anestezi sonrası gelişen akut subdural hematomu tanımlamak ve spinal anestezi kullanırken baş ağrısının her zaman spinal anesteziye bağlı hipotansif baş ağrısı anlamına gelmediğini ve subdural hematom gibi katastrofik bir komplikasyonun da oluşabileceğini akılda tutmak gerektiğini vurgulamaktadır.

**Anahtar Kelimeler:** Spinal Anestezi, Subdural Hematom, Baş ağrısı

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**How to Cite:** Hançer Çelik F, Baykan N, Salt Ö, Aytekin R, Yılmaz G. A Rare Complication After Spinal Anesthesia: Intracranial Subdural Hematoma, Cumhuriyet Medical Journal, 2024;46(3): 205-207.

## Introduction

Acute & chronic intracranial subdural hematoma is usually caused by trauma. However, it is a rare and serious complication after spinal anesthesia. Intracranial bleeding with subdural hematoma after spinal anesthesia is a rare and fatal complication with a reported incidence of 1 in 500000 obstetric populations.<sup>1</sup> Symptoms of subdural hematoma are due to mass effect and displacement of structures. Spinal anesthesia has the advantage of avoiding the side effects of general anesthesia and allowing the patient to be awake during the surgical procedure. It is especially popular in obstetric surgery and delivery.<sup>2</sup> Post-dural puncture headache after spinal anesthesia is a known complication of neurocranial blockade.<sup>3</sup> Other complications include nausea, ringing in the ears, dizziness and photophobia. Symptoms usually resolve spontaneously when treated with bed rest and analgesics or within five days. The diagnostic criterion for post-dural puncture headache is postural headache that occurs or intensifies after 15 minutes of standing and resolves with lying down.<sup>4</sup>

## Case Presentation

A 38-year-old woman was brought to the emergency department by her relatives with complaints of sudden change in consciousness. It was learned that the patient gave birth by cesarean section under spinal anesthesia 3 days ago. Spinal anesthesia was given by 25G Quincke's spinal needle, and 8 mg of hyperbaric bupivacaine was used. A total of two attempts were taken for dural puncture. It was anamnesized that there was no abnormality in the operation, the patient had a headache

during the follow-up in the service and was diagnosed as post-dural puncture headache, analgesics were prescribed and she was discharged with recommendations. It was determined that the headaches continued after discharge and sudden change in consciousness occurred 2 hours after discharge. She had a history of hypertension. The patient's history was negative for any condition that could cause subdural hemorrhage such as arteriovenous malformation, bleeding disorder, alcohol and drug abuse except hypertension. At the time of admission, vital signs were fever 36 °C, blood pressure 160/90 mmHg, pulse 70/min, SpO<sub>2</sub> 99%, fingerstick blood glucose 124 mg/dl. On physical examination, the patient was intubated because of poor general condition and Glasgow coma scale score of 8. The patient had 4/2 anisocoria on the left side. Laboratory tests revealed no pathology. A brain CT scan showed a 6 mm subacute subdural hematoma in the left frontotemporoparietal region at the widest part. There was an 8 mm shift effect to the right of the midline, the sulci were obliterated and the cerebral tissue was mildly edematous (Figure 1). No pathology was detected in other CT imaging studies performed for exclusion. The patient was consulted to neurosurgery because of subacute subdural hematoma, shifting and anisocoria and was transferred to neurosurgery intensive care unit for emergency craniotomy and hematoma evacuation. Cranioplasty was performed after resorption of the brain edema. The patient was intubated for 3 days and then extubated and transferred to the ward and was discharged with recovery after he had no problems in the ward follow-up.

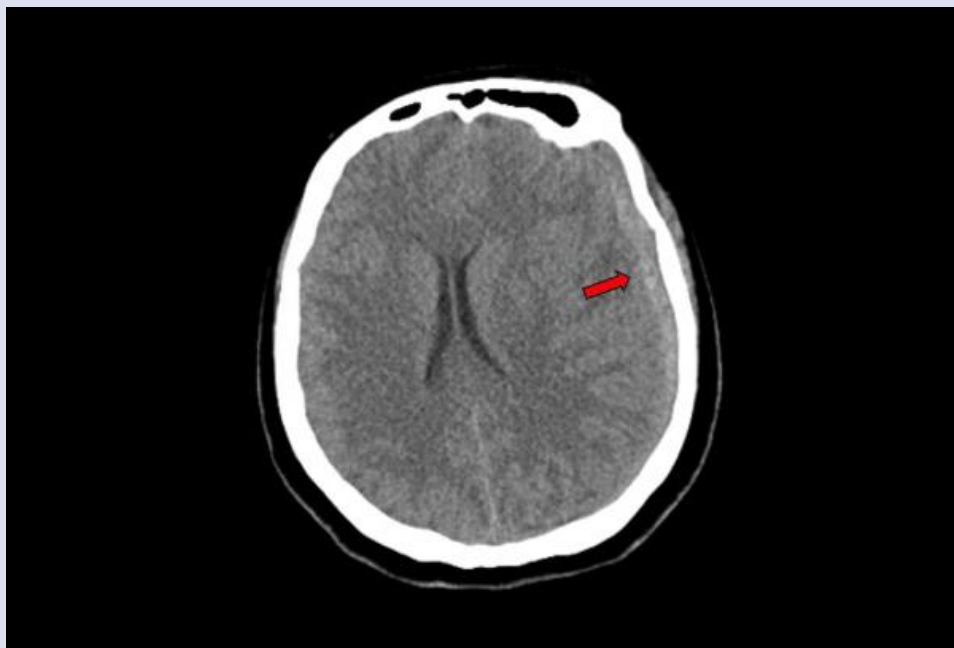


Figure 1. Brain CT image of the patient (A subdural hematoma is marked with a red arrow.)

## Discussion

Intracranial subdural hematoma is a result of dural puncture, which is a rare but serious complication after epidural and spinal anesthesia. This may occur during obstetric neuraxial anesthesia, especially in young and healthy women, and the consequences can be serious.<sup>5</sup> Loss of cerebrospinal fluid (CSF) due to epidural and spinal anesthesia may shift the brain caudally, causing rupture of intracranial subdural veins and subdural hemorrhage.<sup>6</sup> Symptoms of subdural hematoma are related to mass effect and displacement of structures.

Post-dural puncture headache is caused by loss of CSF as a result of dural puncture and worsens with the effect of gravity when the patient stands upright and relieves when the patient is supine. Secondly, vasodilatation occurs in response to decreased intracranial pressure due to CSF loss and causes headache; more than 85% resolve within six weeks.<sup>7</sup> Persistent postpartum headache is usually caused by common causes such as tension-type headache and migraine. This is one of the common types of headache that women frequently encounter in the postpartum period. Especially tension-type headache and migraine may occur prominently in this period and it is a common problem among women with long-term headache.<sup>8</sup> Refractory or recurrent post-dural puncture headache, especially when associated with neurologic symptoms, may require neurology or neurosurgery consultation with cerebral neuroimaging. When this is the clinical situation, it is important to further investigate the cause of the headache in order to determine appropriate treatment strategies.

Development of intracranial subdural hematoma after spinal anesthesia has been reported, although it is rare.<sup>7</sup> This complication is a condition in which early diagnosis is important and therefore the nature of headache after spinal anesthesia should be carefully considered. If any change in the headache is noticed, a thorough neurologic examination should be performed as soon as possible, taking into account the possibility of intracranial subdural hematoma. This may positively affect the prognosis by providing early diagnosis of a potentially serious complication.

This case report describes an acute subdural hematoma after spinal anesthesia and emphasizes that when using spinal anesthesia, it should be kept in mind that headache does not always mean hypotensive headache associated with spinal anesthesia and that a catastrophic complication of subdural hematoma may also occur.

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