



A case of late diagnosis of chronic subdural hematoma following spinal anesthesia

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ABSTRACT

Intracranial subdural hematoma developing following spinal anesthesia is a rare but serious complication. We describe a case of subdural hematoma developing following spinal anesthesia and diagnosed late.

A female patient receiving spinal anesthesia for cesarean delivery 45 days prior to arrival at the emergency department presented to our hospital with non-severe headache persisting for 45 days after discharge. Computerized tomography (CT) of the brain performed due to long-term persisting headache resistant to medical treatment and a history of spinal intervention revealed a hypodense chronic subdural hematoma in the left frontoparietal area and a shift from left to right in midline structures. The patient was operated and discharged without sequelae on the 7th day postoperatively.

Care must be taken over subdural hematoma in the presence of headache after spinal anesthesia persisting despite fluid intake and medical treatment and exceeding 48 h in duration, and diagnosis must not be delayed.

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1. Introduction

Intracranial subdural hematoma developing following spinal anesthesia is a rare but serious complication [1,2]. Moen et al. analyzed cases of 1.260.000 spinal and 450.000 epidural blocks between 1990 and 99 and they reported only five cases of subdural haematoma [3]. Cerebrospinal fluid (CSF) leak persisting due to dural injury during puncture was thought to have led to bleeding with tension and tearing in meningeal vessels [4]. If subdural hematoma is not diagnosed early and treated appropriately it can result with mortality. We describe a case of intracranial subdural hematoma diagnosed late following spinal anesthesia.

2. Case report

A 33-year-old female patient presented with headache to our emergency department. The patient had received spinal anesthesia for cesarean surgery 45 days previously. While the patient was in the sitting position a 23-gauge spinal needle with a Quincke tip was introduced through the L4-5 interspace. After dural puncture at the first attempt, 10 mg of hyperbaric bupivacaine 0.5% was injected. The haemodynamic parameters of the patient were stable throughout surgery. The surgical procedure was completed without complications. The patient reported severe headache following the operation and that the headache had improved despite rest, fluid intake and analgesics as advised. The patient had been discharged with advice on the 2nd day postoperatively and no imaging had been performed during hospitalization. The patient presented to our emergency department due to non-severe headache not responding to oral analgesics and abundant fluid intake and persisting for 45 days following discharge. Pain was widespread across the entire cranium and was accompanied by periodic nausea, although no vomiting occurred. The patient had no additional symptoms such as loss of strength, sleeplessness or altered

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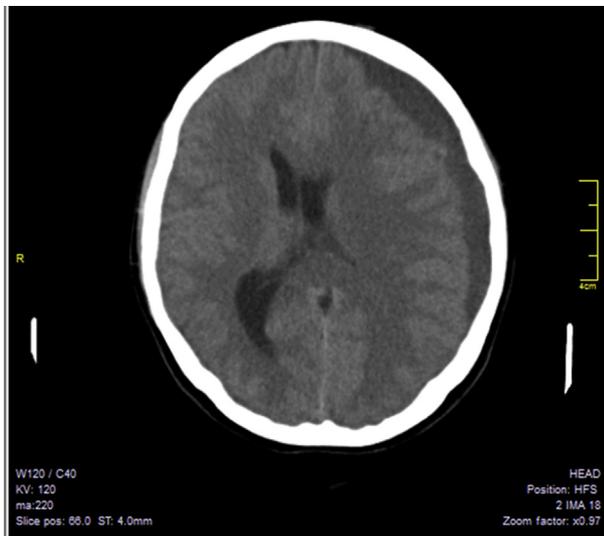


Fig. 1. Hypodense chronic subdural hematoma and shift from left to right in midline structures at CT examination.

consciousness. The patient had no history of trauma, coagulopathy and no known additional disease. The laboratory results (blood count, complete metabolic panel, and coagulation parameters) were normal (platelets count: 258.000 mm³, international normalized ratio: 1.20). She had used iron prepare as medication due to iron deficiency anemia during pregnancy and simple painkillers for the headache. There was no other history of drug use. The patient's general condition was good, she was lucid, oriented and cooperative and her Glasgow Coma Score was 15. Neurological and other system examinations were normal. Computerized tomography (CT) of the brain was performed due to long-term persisting headache resistant to medical treatment and a history of spinal intervention. Hypodense chronic subdural hematoma in the left frontoparietal area and a shift from left to right in midline structures were observed at brain CT (Fig. 1). The patient was operated and discharged without sequelae on the 7th day postoperatively. No problem was determined at follow-up 1 month later.

3. Discussion

Headache is the most common complication after spinal anesthesia [5]. A dural puncture-related CSF leak exceeding 250 ml a day is thought to lead to headache [6]. Headache developing in association with dural puncture is generally postural and resolves within 48 h with fluid intake and bed rest.

Complications of spinal anesthesia include postdural puncture

headache, intracranial hypotension, meningitis, spinal hematoma, sensory loss and paraplegia, intracranial (epidural, subdural or subarachnoid) bleeding, epidural abscess, infection in the puncture site and cranial nerve deficits. Subdural hematoma is a rare complication of spinal anesthesia [1,2,7]. Excessive dural puncture-related CSF leak following spinal anesthesia may lead to causal displacement of the brain. Intracranial bleeding may occur due to tension in the meningeal vessels during this displacement [4]. Postdural puncture headache exceeding 48 h should suggest subdural hematoma or other intracranial bleeding [5].

Conditions such as trauma, cerebral atrophy, anticoagulant use, bleeding disorders, cerebral aneurysm, brain tumor, cerebrovascular events and meningovascular syphilis are factors that increase the risk of subdural hematoma [5,7]. Although there was no predisposing factor in our case, the fact that the headache did not resolve with fluid intake and simple medical treatment, that it was prolonged, and the history of spinal anesthesia necessitated radiological examination directed toward intracranial bleeding. Treatment of subdural hematoma is conservative therapy or surgical evacuation. The size of hematoma and the patient's neurological status are important in treatment selection. Surgical treatment was performed in this case since the hematoma was large and caused a shift to the left in midline structures.

Headache is a common complication after spinal anesthesia and frequently resolves within 48h with bed rest, fluid intake and simple analgesics. However, in the presence of prolonged headache irresponsive to fluid intake and medical treatment, care must be taken in terms of subdural hematoma, and diagnosis must not be delayed.

Conflicts of interest

None declared.

References

- [1] Ulivieri S, Oliveri G, Dell'Acqua S. Intracerebral haematoma following spinal anaesthesia for caesarean section: case report. *G Chir.* 2009;30:109–111.
- [2] Beyaz SG, Ergonenc T, Bayar F, Erdem AF. A catastrophic neurologic complication following spinal anaesthesia: intracerebral haematoma. *Turk J Anaesth Reanim.* 2013;41:104–105.
- [3] Moen V, Dahlgren N, Irestedt L. Severe neurological complications after central neuraxial blockades in Sweden 1990–1999. *Anaesthesiology.* 2004;101:950–959.
- [4] Gass H, Goldstein AS, Ruskin R, Leopold NA. Chronic postmyelogram headache. Isotopic demonstration of dural leak and surgical cure. *Arch Neurol.* 1971;25:168–170.
- [5] Acharya R, Chhabra SS, Ratra M, Sehgal AD. Cranial subdural haematoma after spinal anaesthesia. *Br J Anaesth.* 2001;86:893–895.
- [6] Franksson C, Gordt T. Headache after spinal anaesthesia and a technique for lessening its frequency. *Acta Chir Scand.* 1946;94:443–454.
- [7] Hassen GW, Kalantari H. Diplopia from subacute bilateral subdural hematoma after spinal anesthesia. *West J Emerg Med.* 2012;13:108–110.