

Intracranial Subdural Hematoma: A Rare Complication Following Spinal Anesthesia for C/S Surgery

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Abstract

Intracranial subdural hematoma is an uncommon complication of spinal dura mater penetration with few reported cases in the medical literature. This condition is initially misdiagnosed as post-dural puncture headache, a common occurrence, and treated as such after the procedure. The incidence of postoperative complications is relatively low. The most common complication is headache, which typically begins 24-48 hours after dural puncture, varies in place, and subsides within the first 5 days. Approximately one-third of people undergoing dural puncture report headache. Subdural hematoma should be suspected, particularly if there is no change in posture and the headache lasts longer than expected. It has been reported that the incidence of cerebral subdural hematoma after lumbar puncture is about 1:500,000 and 1:1,000,000. This uncommon consequence, which is rarely reported in the medical literature, is a life-threatening illness for which early identification and treatment are crucial.

Keywords: Spinal anesthesia, subdural hematoma, headache, C/S surgery, emergency medicine

Introduction

Currently, spinal anesthesia is used safely for cesarean deliveries [1]. Advantages include not requiring general anesthesia and permitting patients to remain awake during surgery [2]. It is gaining prominence as a superior alternative to general anesthesia, particularly for obstetric procedures and delivery [1,2]. The incidence of postoperative complications is relatively low. The most common complication is headache, which typically begins 24-48 hours after dural puncture, varies in place, and subsides within the first 5 days [3,4]. Approximately one-third of people undergoing dural puncture report headache [5]. Subdural hematoma should be suspected, particularly if there is no change in posture and the headache lasts longer than expected. It has been reported that the incidence of cerebral subdural hematoma after lumbar puncture is about 1:500,000 and 1:1,000,000 [6]. This uncommon consequence, which is rarely reported in the medical literature, is a life-threatening illness for which early identification and treatment are crucial [4-7]. In this case, we present an extremely rare complication

of subdural hematoma in a patient who underwent a cesarean section with spinal anesthesia, had no risk factors for bleeding in the postpartum months, and presented to the emergency department with a headache that did not respond to analgesic treatment and with very superficial neurological deficits. The patient's consent was obtained prior to the publication of the case report.

Case Report

A 30-year-old woman with a headache was admitted to our emergency department. A month ago, the patient received spinal anesthesia for a cesarean section. The headache subsided around one week following the anaesthetic, but returned three weeks later. In the initial week, medications alleviated the headache, but later headaches did not respond to analgesics. There were no head injuries throughout this time. In the initial medical history of pain, no recognized disease history is present. No known history of substance abuse. At the time of admission, the patient's vital signs were as follows: Arterial blood pressure:



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100/60 mmHg, respiration rate: 16/min, and pulse: 94/min. The patient was conscious, cooperative, oriented, and occasionally totally oriented during the medical examination. The patient's meningeal irritation findings were normal. With the exception of the interference scar in the lumbar area, the neurological examination revealed no aberrant results, and all other examinations of the patient were normal. In the patient's history, it was noted that the patient's right arm and leg were occasionally weak, although this weakness was not permanent. On the basis of these findings, it was determined that the patient should undergo central imaging; non-contrast brain computed tomography (CT) was consistent with acute subdural hemorrhage in the chronic floor measuring 20x73 mm in the thickest part of the vertex left lateral and minimal right shift (about 3 mm) in the midline structures (Figure 1). Magnetic resonance imaging (MRI) was also used to locate the subdural hemorrhagic region of the brain, as seen in Figure 2. In addition, laboratory analyses of the patient's total blood count, biochemistry parameters, and coagulation parameters revealed no disease (international normalized ratio, activated partial thromboplastin clotting time). The neurosurgeon who examined the patient advised drainage and the insertion of burr holes as treatments for the subdural hematoma.

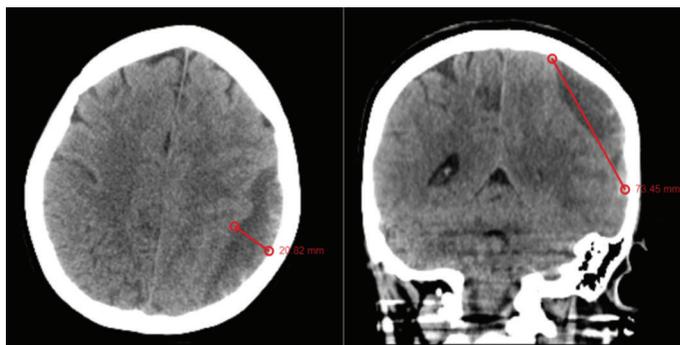


Figure 1. Imaging with a CT scan of the patient

CT: Computed tomography

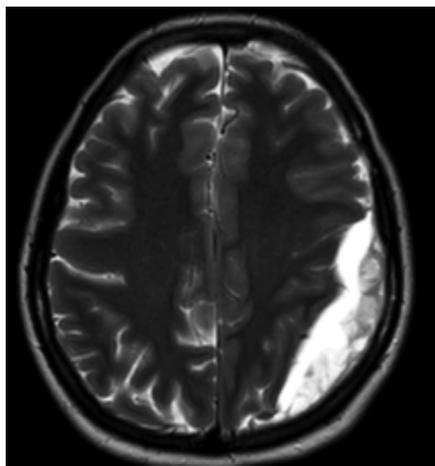


Figure 2. Imaging with a MRI scan of the patient

MRI: Magnetic resonance imaging

The patient declined the proposed treatment and checked out of the hospital. In the first week and first month of the application, information about patient's general condition was acquired through phone call. The patient received medical treatment from the neurosurgery clinic with the drugs which contain dexametazon and levetirasetam.

Discussion

Subdural hematoma is caused by head trauma, coagulation issues, certain medications, iatrogenic causes, dehydration, and lumbar puncture [4-7]. When short-term anesthetic is required for surgical procedures, epidural anesthesia is preferred [2]. Furthermore, general anesthesia has a 1.7-fold higher maternal death rate than regional anaesthetic [8], and general anesthesia increases postoperative hospital stay [9]. An extremely rare but dangerous consequence of spinal anesthesia is subdural hematoma following spinal or epidural anesthesia [10]. As a pathophysiological mechanism, it is hypothesized that the short-term cerebrospinal fluid (CSF) imbalance that occurs during epidural anesthesia creates strain in the vein walls, which may result in subdural bleeding [5,6]. In addition, leakage of CSF decreases intraspinal and intracranial pressure [7]. These changes result in the caudal displacement of the brain and stretching of pain-sensitive tissues and veins [6].

As previously stated, a variety of therapeutic options are available, including observation, blood patch, burr hole drainage, craniectomy, or a combination together. Subdural hematomas may spontaneously resolve [10]. The decision should be based on the neurological condition of the patient and the extent of the hematoma [11]. Among all strokes, ischemic stroke comprises 75-80%, and hemorrhagic stroke comprises 20-25% [12]. It is unknown what the actual incidence of postpartum subdural hematoma is because most affected patients are likely to be treated without further investigation [13]. Any patient with neurological symptoms, a subdural hematoma larger than 10 millimeters, or a midline displacement greater than 5 millimeters must receive surgical evacuation [7,13]. In this case study, the subdural hematoma was greater than 10 millimeters in size, and there was limited midline movement of approximately 3 millimeters. In this case, the extent of the subdural hematoma necessitated surgical intervention. The patient declined the proposed surgical treatment and checked out of the hospital. The neurosurgical outpatient clinic monitored the patient's stable vital signs.

According to our case, when patients arrive with a novel type of headache, this appears to be a rare but significant condition that demands physicians' careful attention. If the headache changes in nature, does not respond to treatment, or there are neurological symptoms such as nausea/vomiting and blurred vision, a subdural hematoma should be examined. Immediately, a CT scan or MRI should be conducted.

Conclusion

After spinal anesthesia during the postpartum period, headaches are extremely prevalent. Headaches may be symptoms of dural puncture headache or cerebral subdural hematoma, both of which are exceedingly rare but lethal complications. After spinal anesthesia, intracranial subdural hematoma should be considered in the differential diagnosis of headaches.

Ethics

Informed Consent: The patient's consent was obtained prior to the publication of the case report.

Peer-review: Externally peer-reviewed.

Authorship Contributions

Concept: K.Ş., B.Ç., A.A., R.G., Data Collection or Processing: K.Ş., B.Ç., A.A., R.G., Literature Search: K.Ş., B.Ç., A.A., R.G., Writing: K.Ş., B.Ç., A.A., R.G.

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