Case Report

Intracranial Chronic Subdural HemATOMA Occurring Six Months After Spinal Anaesthesia: A Case Report

Selim KAYACI¹, Vaner KOKSAL², Serkan KIRBAS¹, Yakup TOMAK², Mehmet Faik OZVEREN¹

¹Recep Tayyip Erdogan University, Medical Faculty, Department of Neurosurgery, Rize,
²Recep Tayyip Erdogan University, Medical Faculty, Department of Anaesthesiology and Reanimation, Rize

Summary

Intracranial subdural hematomas are rare complications of spinal anesthesia. This paper is a case report of a chronic subdural hematoma (cSDH) developing in a 32-year-old female six months after giving birth by cesarean section using spinal anesthesia. The patient came to the hospital six months after giving birth, complaining of a headache that did not respond to conservative treatments. Her neurological examination was normal. In the computed tomography (CT) and magnetic resonance imaging (MRI) on the left frontoparietal that were performed a prominent subdural hematoma shifting to the right was found. There was no history of trauma. The coagulation tests and MR-angiogram were normal. The patient was treated with burr-hole craniotomy and closed drainage.

Key words: Chronic subdural hematoma, Dural puncture, Headache, Spinal anesthesia

Spinal Anesteziden Altı ay Sonra Oluşan İNtrakranial Kronik Subdural Hematom: Olgu Sunumu

Özet


Anahtar Kelimeler: Baş ağrısı, Dural ponksiyon, Kronik subdural hematom, Spinal anestezî

INTRODUCTION

Intracranial subdural hematomas generally occur as complications of medium or mild head trauma. Old age, alcoholism and coagulation disorders are predisposing factors.(11) According to the literature, various surgical techniques used in the treatment of CSDH hematomas have been compared and their effects on clinical results were discussed.(17) However, nowadays closed drainage with burr-hole trepanation is frequently used procedure in the treatment of CSDH.(6) It is a fairly rare complication of spinal anesthesia and a headache is generally the first symptom.(21) In this article the case of a chronic subdural hematoma occurring in a young
woman as a late complication of childbirth by cesarean section under spinal anesthesia is presented and discussed with reference to the literature.

CASE PRESENTATION

The case concerns a 32-year-old female patient with no history of trauma. The patient came to the hospital six months after childbirth by cesarean section with spinal anesthesia complaining of severe headaches. Routine neurological examination was within normal limits. In her CT an isodense intracranial subdural hematoma on the left, shifting on the midline, was found. A 2.2 mm cSDH shifting to the right was found in her MRI (Figure 1). Her MR-angiogram, performed to determine a vascular pathology opening to the subdural distance (such as arteriovenous malformation or aneurysm), was normal. There was no abnormality in the patient's blood biochemistry and coagulation tests. No other reason could be found for the etiology. However, it was learnt that the patient had undergone a cesarean operation under spinal anesthesia six months prior to the consultation. During the spinal anesthesia a 25 G Quince (sharp tip) spinal needle with its point placed upwards administered 2,5 cc (12,5mg) 0.5% hyperbaric bupivacaine to the intracranial area through the L2-3 intervertebral gap. The patient was operated on using burr-hole craniotomy and closed drainage system( ). In the postoperative CTs there was a 2.8 mm effusion on the first day and a 1.0 mm effusion on the third day (Figure 2).

Figure 1: Left frontoparietal cSDH and right shift in preoperative MRI
DISCUSSION

Dural puncture of subdural hematoma is a rare but serious complication. Cases following spinal anesthesia, myelography, discography, and diagnostic lumbar punctures have been documented.\(^4,19\) Scott and Hibbard\(^{16}\) reported its incidence rate as 1/500000.

Some of the factors affecting the incidence of PDPH (postdural puncture headache) following dural puncture are the diameter of the puncture needle,\(^{18}\) the female sex,\(^{20}\) the stage of pregnancy,\(^2\) a history of PDPH,\(^1\) the density of the BOS and width and elasticity of the dura/arachnoid matter.\(^7\)

A fistula that occurs following a dural puncture can stay open for a long time. Studies have shown that the puncture orifice can stay open for 18 weeks and a 0.6 mm orifice can leak 240 ml of BOS liquid every day.\(^5,10\) Amorim JA et al found cSDHs that occurred after cesarean section and spinal anesthesia in two patients.\(^1\)

The extent of the leakage increases with the diameter of the needle. The assumed mechanism of the intracranial subdural hematoma is the tearing of the veins due to the loss of cerebrospinal fluid (CSF) causing traction following the decrease in CSF pressure.\(^8\) Excessive leakage of CSF from the dural puncture can result in intracranial structures changing place to the caudal and this in turn may cause the occurrence of a subdural hematoma.\(^9\)

Bilateral cSDHs are seen more frequently in patients whose coagulation time is prolonged.\(^{11}\) Aneurysm and arteriovenous malformations can also play a part in cSDH pathogenesis.\(^{13}\) The MR angiogram, performed to find possible accompanying vascular pathologies such as aneurysm or arteriovenous malformation, was normal.

A sharp-tipped 25 G Quince needle was used. The diameter and tip (sharp or blunt) is important, because the healing of the tear in the dura mater takes a longer time and is more difficult with a sharp tip. It has been suggested that placing the puncture

Figure 2: CT from seventh postoperative day. No sign of subdural hematoma and shift.
needle on the length of the spine, at a parallel angle, reduces incidence of PDPH and fluid leakage.\(^{(14)}\)

In cases of headache following spinal anesthesia most physicians initially think of PDPH. PDPH occurs in 70% of cases as a result of BOS leakage. The pain characteristically decreases in the supine position and is accompanied by neck stiffness. Photophobia, diplopia and mid-stage deafness have often been reported. In most cases the symptoms improve when treated with analgesic and bed rest.\(^{(11)}\)

The first procedure that should be chosen when evaluating a cSDH is a CT. An isodense cSDH can make diagnosis harder in tomography. However, the presence of a shift should attract attention and be investigated using MRI which is more sensitive to brain parenchyma.\(^{(15)}\) Our patient had an isodense cSDH and clear shift on the midline in her CT. In the MRI a thicker and wider cSDH was found compared to the BBT. Also, a midline shift may not occur in cases of cSDH. Because our case occurred six months after spinal anesthesia PDPH was not considered initially. However, an intracranial pathology was examined when the headache didn't pass after a week of analgesics and bed rest, and a cSDH was found.

To conclude, it should be remembered that when assessing patients who have undergone spinal anesthesia or dural puncture for any other reason, and who complain of headaches that don't respond to conservative treatments, intracranial pathologies such as cSDH may occur.

Correspondence to:
Selim Kayaci
E-mail: selim_kayaci@hotmail.com

REFERENCES