## 【Case reports】

### Subdural Hematoma after Spinal Anesthesia for Cesarean Delivery.

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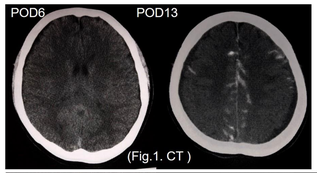
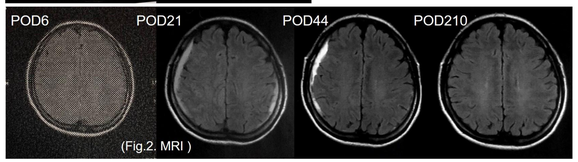
A 37-year-old G1P0 presented at 38+4weeks-of-gestation, for elective cesarean delivery due to breech presentation and myoma uterus. Past medical history was unremarkable and routine blood tests, including coagulation status were normal. Spinal anesthesia was administered at the L3-4 level, with a 27-gauge pencil point needle obtaining clear cerebrospinal fluid flow on the first pass and anesthesia was induced with 11mg 0.5% hyperbaric bupivacaine. For postoperative analgesia, an epidural catheter was placed at Th11/12 with no evidence of dural puncture, a healthy infant weighing 2950g was delivered, with Apgar scores of 9 and 10. After the operation, continuous epidural infusion was started 6mL/h of 0.1%ropivacaine with 2mcg/mL fentanyl for the post-operative pain until POD 2.

On the POD1 she started to ambulate and took care of the baby and her recovery was fine until on POD3, when she complained of nuchal pain and headache. Physical examination including other cranial nerve symptoms showed no deficits, and it was interpreted as a PDPH.

On the safe side, we planned diagnostic imaging for exclusion of other intracranial pathology. On POD6 she had a diagnosis of intracranial subdural hematoma with head CT(fig1) and MRI(fig2). The patient declined autologous epidural blood patch, and treatment for the next 3 days consisted of acetaminophen and bed rest in the supine position until the headache improved. On the POD13 we confirmed no exacerbation with second CT and she was discharged and followed neuroimaging found no abnormal changes(fig2).



(Fig.1. CT )



(Fig.2. MRI )

## 【Discussion】

PDPH is a relatively common complication of neuraxial anesthesia, whereas acute intracranial subdural hematoma is a rare occurrence. One recent review showed as high as 1 of 320 PDPH cases.[1)] As in this case, there is another report with 27-gauge Whitacre needle and subdural hematoma.[2)] One report resulted in a diagnosis 3 weeks postpartum, and had a nearly fatal neurologic outcome.[3)] Failure to make an early diagnosis can occur given the similar symptoms of PDPH and intracranial hematoma. The diagnosis can be confirmed by neuroimaging, which should be considered to facilitate early recognition of intracranial lesions and to start an effective treatment.

***References***
1)Major neurologic complications associated with postdural puncture headache in obstetrics: a retrospective cohort study. Jean G. et al., Anesthesia and Analgesia 2019; 129:5:1328-1336
2)Acute subdural hematoma following spinal anesthesia with a very small spinal needle Emmanuel C. et al., Anesthesiology 2000;93:5:1354-1355
3)Intracranial Subdural Hematomas and Cerebral Herniation after Labor Epidural with No Evidence of Dural Puncture. George A.et al., Anesthesiology 2006;104:610-612

No accidental dural puncture,
27G pencil point spinal needle,
POD3 mild headache

PDPH?

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Early diagnostic image helped finding pathological status, and avoiding critical status.

### Cause of postpartum headache

1. Tension-type headache
2. Preeclampsia / eclampsia
3. Spinal headache
4. Migranie headache
5. Pituitary hemorrhage mass
6. Cerebral venous thrombosis
7. Cerebral vasculopathy
8. Thalamic lesion
9. Subarachnoid hemorrhage