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Acute Subdural Hematoma Post Spinal Anesthesia: Case Report and Review of Literature

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Abstract **Case Report**

Most cases of subdural hematoma occurring in the course of or after spinal anesthesia are related to the use of large gauge needles. Acute subdural hematomas associated with spinal anesthesia and which have been reported in the literature is rare. The pathophysiology of this complication can be explained by the leakage of cerebrospinal fluid and its persistence during the following days, which leads to ventricular collapse, which then results in a separation of the brain from the dura which is suspended. by bridging veins, the rupture of which would be the cause of the formation of the subdural hematoma. This is the case of our 36-year-old patient, with no particular history, who was cesarized under spinal anesthesia, who was admitted in the emergency setting for a coma just after her cesarean delivery. Exploration by brain scanner objectified the diagnosis of subdural hematoma.

Key words: spinal anesthesia, lumbar puncture, acute subdural hematoma.

INTRODUCTION

Spinal anesthesia is a simple anesthesia technique. It's most frequent clinical manifestations are intense fronto-occipital headaches, especially positional, most often increased by orthostasim. This technique is not above serious complication such acute subdural hematoma [1, 2]. We report the case of young women having a subdural hematoma post spinal anesthesia.

OBSERVATION

This study concerns the parturient, Mrs. K.N, 36 years old, with no medical history, primiparous with 39 weeks of amenorrhea. The patient had a C-section surgery for a fetal macrosomia under spinal anesthesia with a non "pencil point" needle, hereafter a completely correct preoperative biological assessment.

The caesarean was performed in the best conditions, with extraction of a live, viable, and healthy newborn. However, the patient presented with excruciating and positional headaches on the second post-cesarean day. The treatment of these headaches included rehydration, prescription of paracetamol codeine, in addition to anticoagulation at a preventive dose and antibiotic prophylaxis.

On the fourth post-cesarean day, the newborn had a deterioration of consciousness' state of rapid and sudden installation with a Coma Glasgow Score of 08/15, as well as a notion of inhalation of gastric fluid. The examination of the pupils revealed an anisochorea with mydriasis on the right. The treatment was intubation and ventilation after sedation with propofol, Fentanyl and scélick maneuver as well as osmotherapy based on Mannitol 10% since the arterial pressure was 160mmHg / 10mmHg. Emergency brain scan was in favor of an acute left hemispherical subdural hematoma (HSD) 10mm thick, with a 14mm thick falcate engagement (Figure 1). An expertise of a neuro-surgeon was requested which recommended an urgent surgical indication. A preoperative assessment was carried out objectifying a thrombocytopenia at 51,000 elements / mm3; the remaining laboratory assessment was without anomaly. The patient was rushed to the operating room under general anesthesia, where she received a transfusion of a platelet pellet, the surgeons evacuated the HSD. After being transferred to a surgical intensive care unit; the patient was hemodynamically stable, correct diuresis, with a correct biological assessment and a platelet count rose to 236,000 elements / mm3. On D6 post-surgery, the patient became febrile at 39 °, a white lung on the right with signs of inhalation on the Chest x-ray, she received a PaO2 / Fio2 gas measurement at 90 mm Hg. The patient was put on antibiotics, subcutaneous anticoagulation, alveolar recruitment maneuver, and curarization. The outcome was marked by the death of the patient postoperatively

from acute respiratory distress syndrome after inhaling the gastric fluid secondary to coma due to HSDI complicating spinal anesthesia.

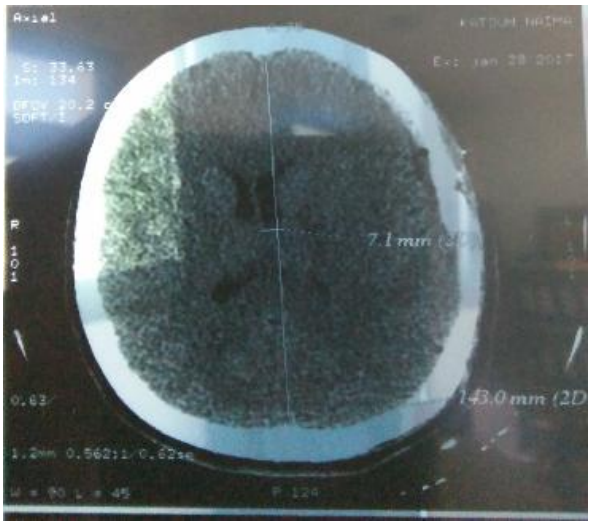

Fig-1: Sub dural hematomal with under falcic engagment

DISCUSSION

Spinal anesthesia (RA) or spinal anesthesia is a locoregional anesthesia which consists of the intrathechal injection of a local anesthetic to yield a reversible sensory motor block in the desired region. This technique of anesthesia was described more than a century ago [3].

Neurological complications from spinal anesthesia are rare. The incidence is 1 / 150,000 cases in surgical' settings, it is of the order of 1 / 500,000 cases in obstetrics, with a risk that rises to 1 / 1,500 cases in the case of anticoagulants' administration [4].

Intracranial HSD (HSDI) is an exceptional complication of R / A with an incidence rate of 1 / 500,000 to one million. Over the past twenty years, around ten cases similar to this adverse event have been cited in literature [5-7].

This complication can be dramatic as it is the case of our observation. Currently, we are certain that a lumbar dural breach can be the cause of several neurological incidents, which are certainly exceptional. However, this type of complications can be disabling such as oculomotor disorders, and can be as serious as putting the vital prognosis at stake such as the subdural hematomas, as in our case.

The etiopathogenesis of post-spinal HSDI is similar to that of "intracranial hypotension syndrome" [1, 3, 7]. In fact, its mechanism is due to changes in the intracerebral hydraulics which is related to the lumbar CSF leak. Furthermore, the leakage of CSF volume through the breach is proportional to the caliber of the puncture needle. As such, the phenomenon of caudal displacement of the neuraxis during the transition to orthostatism is also exerted on intracerebral vascular structures. Spanking as a result of this phenomenon, cortical venules will gain the subdural space, can rupture and constitute a haematic collection, which will give the acute or subacute subdural hematoma [1, 5], the most probable mechanism of our case, especially if we add other circumstances that may create a room for the emergence of this collection; in addition to the caliber of the needle of the R / A, the postpartum and an anticoagulant treatment, in particular by low molecular weight heparin prescribed as preventive. The clinical expression is made of positional headaches, isolated or accompanied by sensitivomotor deficit, while the time between the breach and clinical signs of the HSDI is from a few days (it is an acute HSDI) to several weeks (it is a chronic HSDI). In our case, we noted 01 day between performing R / A and the appearance of the first clinical signs, in this case headache, and 02 days for the onset of coma. So, we are faced with a case of severe acute HSDI as a result of a spinal anesthesia whose diagnosis is established by a cerebral CT scan, however, in the literature, magnetic resonance remains the complementary examination most able to confirm the intracranial hypotension syndrome and to rule out other etiologies of post-R / A HSDI, in particular in chronic HSDI, or in cases where neurological examination finds damage to the cranial nerves [2, 4, 6]. After surgical treatment, the outcome is most often favorable and without any side effects. On the other hand, in our case, the evolution is marked by the death of the patient following an acute respiratory distress syndrome secondary to inhalation of gastric fluid after the rapid onset of the coma linked to the acute HSD post R / A.

CONCLUSION

Acute sub dural hematoma is an exceptional severe complication of spinal anesthesia; which must bementionedin front of resistant headache post spinal anesthesia, especially positional headache. This complication can be reduced if spinal anesthesia is practiced by experimented hands with the use of fine needle.

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