Post-Partum Subdural Hematoma Revealed by Persistent Headache

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Introduction: The subdural hematoma is an exceptional complication of the epidural analgesia following a Dural breach causing by the leakage of cerebrospinal fluid (CSF). Its incidence after spinal anesthesia remains undetermined.

Case report: We report a case of subdural hematoma in a 36-year-old woman, G4P2A1, with a medical history of spontaneous miscarriage and caesarean section, who present progressive headache after iterative caesarean section which took place at 38 weeks of amenorrhea due to placenta previa. After three days from the surgery, an epidural blood patch (EBP) has been realized because of the continuous headache complaint by the woman despite of the usual analgesics 'administration included high dose of corticosteroids. At the 5th day, a disorder of the left oculomotor was headlined by the patient and the existence of a subdural hematoma was discovered through a Cerebral Computed Tomography. The hematoma was extended on the left front-temporal convexity with diffusion in the occipital region above to the top of the tent of the cerebellum. To face this clinical picture, a craniotomy following the drainage of the hematoma was performed. The operative follow-up was simple and without any notable consequences. Pudendal neuralgia is a neuropathic pain syndrome consisting of debilitating pain along the pudendal nerve distribution. Current evidence offers a variety of therapeutic options, however many patients demonstrate inadequate pain control. We present a 56 year old woman with an eight year history of left groin, vaginal, and rectal pain consistent with pudendal neuralgia. After failing physical therapy, pharmacologic therapy, and surgical intervention, a spinal cord stimulator was placed at the conus medullaris with subsequent 65% pain relief and improved sitting time. This report demonstrates spinal cord stimulation uniquely targeted to the conus medullary as an effective treatment modality for pudendal neuralgia.

Key Words: Headache, Subdural hematoma, Spinal anesthesia, Neurological sign

INTRODUCTION

Post lumbar puncture syndromes (PLPS) are mainly manifested by headaches appearing during orthostates and disappearing when lying down [1]. The change in these postural headache features must suggest subdural hematoma (SDH) or cerebral venous thrombosis [2,3]. Subdural hematoma is a rare complication of dura mater breaking-in occurring after epidural analgesia by leakage of cerebrospinal fluid (CSF) [4]. Its incidence after spinal anesthesia remains undetermined. We report an extremely rare case of post-rachis anesthetic subdural hematoma.

CASE REPORT

This is a 36-year-old woman, G4P2A1, with a history of spontaneous miscarriage and cesarean section in spinal anesthesia. The woman was admitted for an iterative caesarean section, scheduled for placenta previa on a pregnancy at 38SA. Spinal anesthesia was done without any consequences. In the immediate postoperative course, the patient had a permanent headache with the progression of intensity. The headache was not a postural type; it was placed in the occipital-frontal zone and spread towards the neck without having any benefits from the administration of the usual analgesics (Paracetamol, Codeine, and Morphine). We used the codeine derivative and morphine because the headache is resistant to paracetamol and we thought that the headache is due to the hypotension of the cerebrospinal fluid by Dural breach and leakage of cerebrospinal fluid after the spinal anesthesia and that the subdural hematoma is not yet suspected. It should be noted that the patient received a low molecular weight heparins (LMWH) for prophylactic purposes for three days after the surgery and the blood coagulation tests were in range at the admission. On 3th day postoperative, an epidural blood patch (EBP) was performed injecting 20 ml of patient's own blood to resolve the persistent headache which not decreased after the conservative treatment administration and the corticosteroid therapy at high dose given as second choice. On day 5 post-partum, a Cerebral Computed Tomography was carried out using contrast products seen the new appearance of a left oculomotor disorder concerned on diplopia and divergent strabismus with palpebral ptosis. The diagnostic exam revealed the existence of an extensive subdural hematoma on the left frontal-temporal convexity, with diffusion in the occipital region to above the cerebellar tent: a large mass affected the medial structures (Figure 1). After identifying the clinical urgency, a craniotomy was done on D6 post-caesarean allowing the evacuation and the drainage of the sub-acute subdural hematoma. The follow-up had not notable complications. The woman had already a new pregnancy 1 year later without any problem. A second iterative caesarean was performed by spinal anesthesia with tubal section ligation and the postoperative course was simple

OBSERVATION

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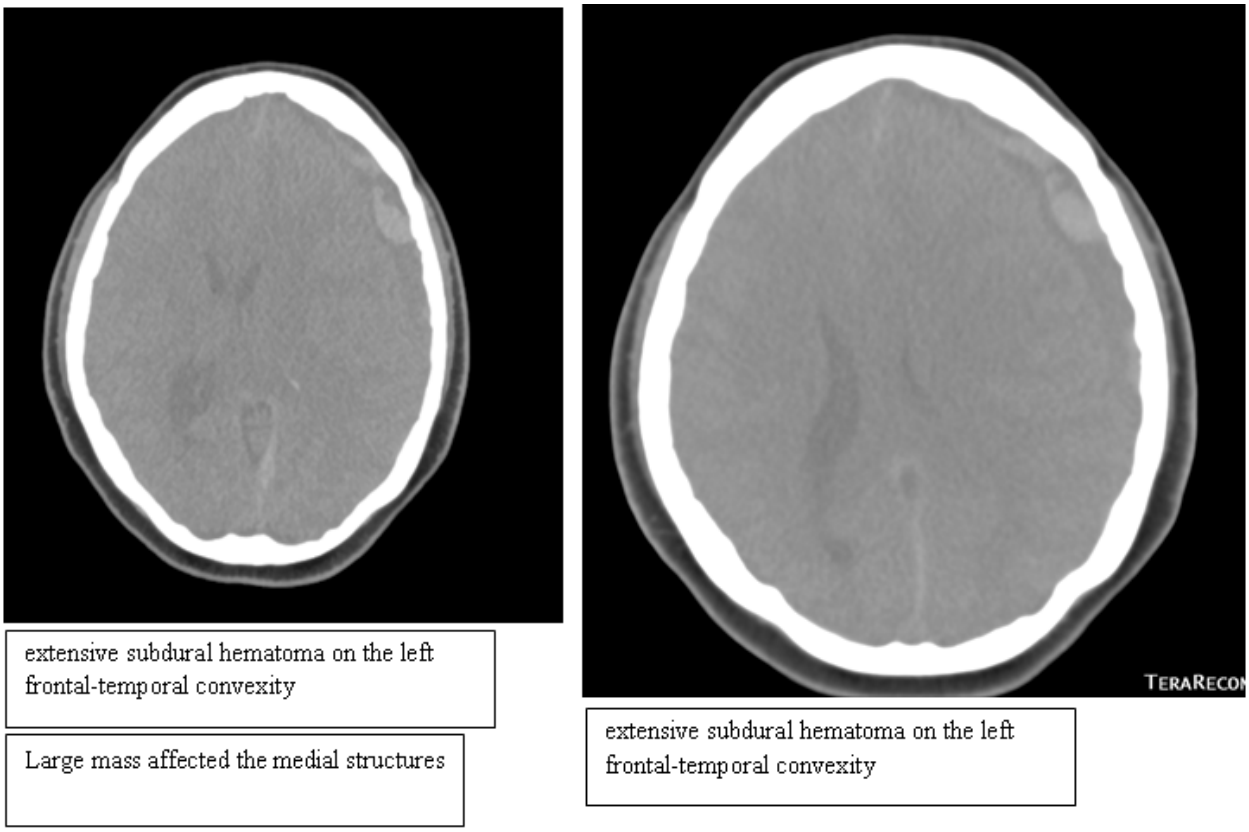

Figure 1) Cerebral Computed Tomography revealed the existence of an extensive subdural hematoma on the left frontal-temporal convexity.

DISCUSSION

The incidence of accidental Dural puncture during epidural anesthesia lies between 0.26 and 2.6% [5]. The persistence of this Dural tear by the needle can cause leakage of cerebrospinal fluid in the epidural space in the absence of rapid scarring. This leak is responsible for intracranial hypotension at the origin of headaches appearing within 5 days following the Dural puncture [6]. The headache is commonly bilateral, constrictive, occipital or occipital-frontal or diffuses, with radiation in the neck or back and sometimes on the shoulders [7,8]. It is usually a pyretic and postural, relieved by dorsal decubitus and aggravated or exacerbated during passage into orthostates [9]. These pains are due to cerebral ptosis with traction on the anchoring allogenic structures and vasodilation of the plexus and meningeal veins to compensate the CSF's volume lost. The first-line treatment of post lumbar puncture syndrome is conservative, and it serves to reduce the intensity of the pain. The common analgesics (Paracetamol, Codeine outside of intracranial hypertension), bed rest and a good hydration are the main recommendations. In the absence of a specific treatment, the post lumbar puncture syndrome disappears spontaneously within 7 days in 72% of cases [10]. If the post lumbar puncture syndrome persists beyond 4 days despite of the conservative treatment, an epidural blood patch (EBP) must be proposed [11] whose effectiveness varies from 77 to 96% according to the authors. The EBP consists in an injection from 20 ml to 40 ml of autologous blood in the epidural space. In the actual procedure, the injection will be stopped when a lumbar pain appeared which indicated that the subdural space is under pressure. If necessary, alternatives to autologous blood are possible by injecting biological fibrin glue [12] into the epidural space or by epidural infusion of dextran. Healing is rapid with the disappearance of postural headaches by stopping cerebrospinal fluid leakage due to the direct filling of the breach with coagulated blood [10]. In case of failure of the epidural blood patch, it is necessary to review the diagnosis of post lumbar puncture syndrome [13]. In our observation, the headache was persistent and became permanent despite the conservative treatment. The blood patch attempt failed on postoperative day 3. Cerebral computed tomography was urgently indicated and confirmed the diagnosis of subdural hematoma. SDH is an exceptional complication of a Dural breach during an epidural anesthesia. As well, the cerebrospinal fluid decreasing caused a rostro-caudal displacement of the brain, and a tensioning of the meningeal structures, which can lead to damage to the cranial pairs and or a subdural hematoma in case of rupture of the cortical veins. In our observation, an oculomotor disorder was found on the left side, such as diplopia and strabismus diverging with palpebral ptosis. According to the studies, the occurrence of this hematoma is favored by dehydration, prolonged labor, thrust forces during contractions and expulsion, the size of the needle and the number of attempts made during the puncture [4]. Some authors confirm the existence of other factors promoting the occurrence of subdural hematoma during epidural anesthesia, such as Valsalva maneuvers (coughing, defecation, sneezing), early mobilization after delivery, disorders of the blood coagulation and anticoagulant therapy, including low molecular weight heparins for prophylaxis [14]. One of the promoting

factors identified in our case could only be the administration of low molecular weight heparins (LMWH) as prophylaxis. The diagnosis of subdural hematoma is suspected in face of a change in the typical postural character of the headache, accompanied mainly by a neurological sign [2,3]. Brain imaging is imperative in face of an atypical clinical picture with failure of blood patch treatment and or a cranial nerve injury [6]. Magnetic Resonance Imaging is a key test for diagnosis. It is better than the Computed Tomography to identify a complication of post lumbar puncture syndromes and may show direct signs of intracranial hypotension [1]. We could not locate the broken vessel causing the bleeding but, in the literature, the mechanism evoked would be a tearing of the cortical blood vessels secondary to traction exerted on the meninges by leakage of cerebrospinal fluid [15,16]. Until now, no case of post-spinal anesthesia subdural hematoma has been reported in Madagascar. The specificity of our observation is the occurrence of SDH after spinal anesthesia. After the 5th day, the diagnosis was suspected due to the persistence of headache and the progressive intensity of it, which became permanent despite of the level's III analgesics given and the epidural blood patch done. The secondary appearance of an oculomotor disorder leaded us to perform an urgent Cerebral Computed Tomography, which confirms the diagnosis of a subdural hematoma. Subdural hematoma is considered a therapeutic emergency and requires specialized management because of the risk of definitive neurological sequels or death [4]. Ferrari et al. had shown that steroid therapy is only enough to treat minimal subdural hematoma [4]. In our case, high dose of corticosteroid therapy had no effects, probably due to the large size of the hematoma. Therefore, a craniotomy was carried out urgently to evacuate and drain the hematoma.

CONCLUSION

A permanent and persistent headache beyond the 5th day after spinal anesthesia, despite of the conservative treatment and the blood patch must remind to a subdural hematoma. The diagnosis can be evoked by the changes of the typical headache's symptomatology associated with an injury of cranial peers. Emergency Cerebral Tomography is enough to confirm the diagnosis.

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