

Intracranial Subdural Hematoma in an Obstetric Patient after Spinal Anesthesia. A Case Report

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Abstract

The anesthetic technique of choice in obstetric patients for segmental cesarean section is spinal anesthesia, among the infrequent complications is a cranial subdural hematoma. A case is presented of a patient who underwent segmental cesarean section who 24 hours later presented with severe holocranial headache and nausea, later in standing she presented loss of consciousness and relaxation of the bladder sphincter, a simple computerized axial tomography of the skull was performed showing an acute subdural right front temporoparietal hematoma that required surgical resolution (decompressive craniectomy plus drainage of hematoma) with satisfactory evolution without neurological sequelae. Continuous evaluation and follow-up of patients after spinal anesthesia and recording late complications that may occur is important.

Key words: Spinal anesthesia; Subdural hematoma; Segmental caesarean section.

INTRODUCTION

Neuraxial anesthesia is the technique of choice for segmental cesarean section according to the ASA, in the absence of contraindications it remains the gold standard for this surgery [1,2]. The Society for Obstetric Anesthesia and Perinatology (SOAP) considers that general anesthesia for cesarean deliveries should represent a rate of less than 5%, the Royal College of Anesthetists recommends a rate of less than 1% for elective caesarean sections and less than 5% for the urgent ones [3]. The placement of an anesthetic in space subarachnoid is easier than an epidural block and the onset of action is faster and gives surgical anesthesia with a failure rate of less than 1% [4]. Among the infrequent and rare complications of spinal anesthesia is acute subdural hematoma, which every anesthesiologist should consider when a persistent headache occurs due to its high mortality rate [5,6].

In general, this complication is often confused with post-dural puncture headache (which is a common complication of spinal anesthesia), it occurs within 5 days after the lumbar puncture, it worsens when standing or

sitting, and is here I was lying down.

The pathophysiology is given by the outflow of a significant amount of cerebrospinal fluid during lumbar puncture that leads to a caudal displacement of the encephalic mass, this causes a stretching of the veins that connect the cortex with the venous sinuses (which have very thin walls at the subdural level) being able to tear and form the hematoma. Pregnancy, dehydration, brain atrophy, repeated dural punctures, large-gauge needles, head injuries, cerebral vascular malformations, bleeding disorders, use of anticoagulants, alcohol and drug use increase the risk [5].

According to the literature, subdural hematoma after spinal anesthesia has a prevalence that ranges between 1/500,000 and 1/1,000,000. It can be acute, subacute, or chronic, the acute is an injury that causes symptoms within 7 days after bleeding [7]. These bridging veins are more congested in pregnancy, which facilitates their rupture, which is why the incidence is higher in obstetric patients [7,8]. A case report of acute subdural hematoma after spinal anesthesia in a patient undergoing segmental cesarean section is presented.

CLINICAL CASE

38-year-old female patient, ASA II, with no known pathological history, IV gestations, II vaginal deliveries, I ectopic pregnancy, who underwent segmental cesarean section for premature rupture of membranes of 14 hours of evolution, for which an anesthesia conductive type spinal anesthesia, single puncture, with excellent blockage.

At 12 hours post-anesthesia, the patient had a holocrine headache, strong intensity stinging without acalmia concomitant nausea, and later in the standing position presents loss of consciousness and relaxation of bladder sphincter; the indication was a computerized axial tomography of the skull which reports suggestive images of right hematoma subdural frontotemporoparietal that discreetly displaces midline structures with the discrete collapse of reserve space (Figure 1).

The patient persists with headache and nausea, she remains with a Glasgow of 15 points, she visits the doctor 10 days after a segmental cesarean section, a neurosurgery service is planned for a right frontotemporal decompressive craniectomy plus emergency hematoma drainage. His paraclinical tests on admission: Hb 12.5

gr/dLm, HH: 39.2%, leukocytes: 7580/mm³, platelets: 312,000 plt/mm³. HIV negative, urea 13 mg/dL, creatinine 0.74 mg/dL, total protein 5.10 g/dL, albumin 2.80 g/dL, globulin 2.3 g/dL, LDH 293.2 U/l. He was admitted to the operating room hemodynamically stable, standard monitoring BP: 150/81 mmHg MAP: 95 mmHg HR: 88 bpm Sat O₂: 100%, standard sequence induction was performed, preoxygenation with FiO₂ at 0.8%, Fentanyl 150 mcg was administered, Lidocaine 60 mg, Propofol 180 mg, Vecuronium Bromide 6 mg, direct laryngoscopy is performed with a Macintosh 3 blade, Cormack Lehane I /IV is evidenced, an endotracheal tube # 7 plus 4 cc of air is introduced and is connected to volume mode mechanical ventilation control, maintenance with Isoflurane 1.5 vol % FiO₂ 0.4%, and intravenous, vecuronium bromide: 2 mg + 2 mg + 1 mg, hemodynamically stable patient during intraoperative, hematoma drainage 60 cc, total blood loss 300 cc approximately, parenteral hydration 650 cc crystalloids (0.9% solution), added: Cefazolin 1 gr, Omeprazole 40 mg, Ondansetron 4 mg, the surgical act ends and Scalp blockade is performed with 12 cc of Bupivacaine 0.25% in the right hemicranium, reversal composed by Neost Igmia 2 mg plus Atropine 1 mg, it is aspirated and extubated without complications, it is

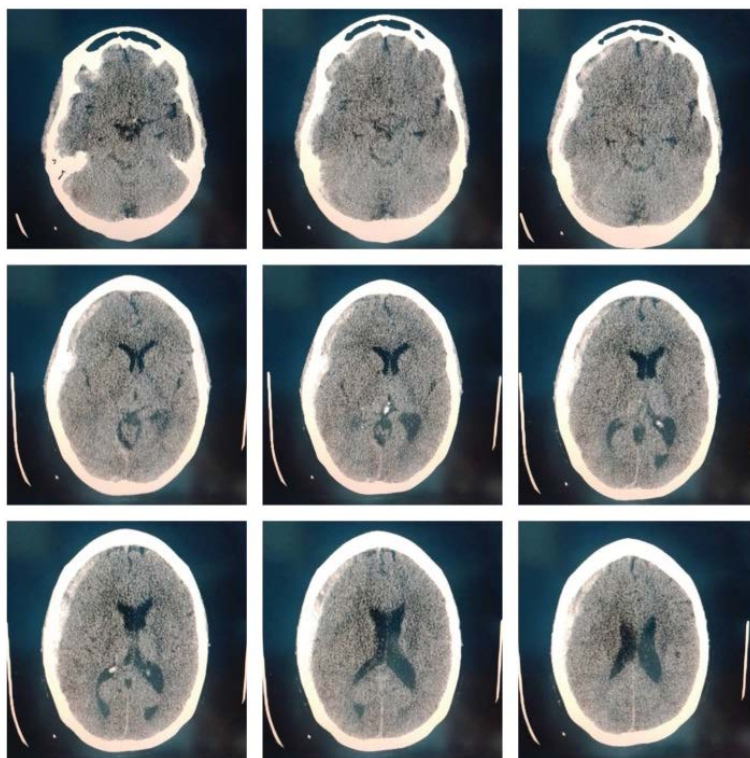


Figure 1. A preoperative computed tomography of the skull of a 38-year-old patient is shown with an image of acute right front temporoparietal subdural hematoma.

transferred to the postanesthetic care unit tolerating room air, BP: 140/80 mmHg , HR: 82 bpm , Sat O₂: 99%. The duration of the surgery was 2 hours. He was discharged after 48 hours without headache, with a Glasgow scale of 15/15 points.

DISCUSSION

Post-dural puncture headache is a complication due to the dural puncture that occurs intentionally in spinal anesthesia or involuntarily as a complication of epidural anesthesia, its incidence varies depending on the type of needle used and risk factors such as female sex, pregnancy, younger age, history of previous CPPD and chronic headache, it is said that in spinal anesthesia it is 1.5% to 11.2% [9,10]. The usual location of CPPD is front occipital radiating to the neck and shoulders, beginning within the first 48 hours and approximately 90% within the first 72 hours after puncture [9].

Unfortunately, there are fatal complications due to spinal anesthesia, among which intracranial subdural hematoma is described. Many authors affirm that despite being rare, this complication is imprecise, and it is also often confused with post-dural puncture headache, which is a common adverse event after lumbar puncture due to similar clinical manifestations [11]. However, in this case, the patient had a holocranial headache without irradiation, which did not have acalmia in the supine position, began 12 hours after the puncture, and presented syncope while standing.

Importantly, the neurological symptoms presented by subdural hematoma may improve with symptomatic treatment or worsen while the symptoms of CPPD are self-limited. In addition, subdural hematoma presents two clinical phases: the initial one characterized by being a postural headache associated with some neurological symptoms, and the second phase where the headache does not improve even in the supine position and symptoms due to intracranial hypertension are associated.

As a conclusion, it should be mentioned that taking measures such as single, atraumatic punctures, with small-caliber needles in spinal anesthesia, there is still the risk of presenting CPPD or a subdural hematoma (although the latter is rare), therefore anesthesiologists and doctors of Surgical services should be aware that this complication may occur, recognizing the risk factors, pathophysiology, and neurological events that constitute

the differential diagnosis with post-dural puncture headache, taking a good medical history and a thorough physical examination in addition to requesting a study of Imaging immediately if neurological symptoms worsen (CT scan of the skull) to confirm or rule out the presence of an intracranial hematoma.

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