

Transient Consciousness Disorder During Emergency Cesarean Section in Patients with Labor Analgesia

Mingyu Xu, Chaoran Wu

Department of Anesthesiology, Shenzhen People's Hospital, Shenzhen, Guangdong, 518000, People's Republic of China

Correspondence: Chaoran Wu, Email chaoranwu@126.com

Abstract: A patient who was 39 weeks pregnant was admitted to the hospital to be expecting labor and performed labor analgesia when the uterine orifice was opened to 2 cm. We successfully performed L2.3 epidural puncture in the lumbar space and equipped her with a self-controlled epidural analgesia infusion pump (100mL, 10mL 1% ropivacaine + 50ug sufentanil + 89mL normal saline) with a load of 8mL for continuous delivery. Continuous infusion of 8mL/h, patient controlled analgesia (PCA) 6 mL/ time at 15 minute intervals. The analgesic effect is good. In the following 40 minutes or so, due to fetal monitoring, fetal heart rate variation deceleration accompanied by late deceleration, the minimum was reduced to 85 times/min, and there was no improvement after treatment, and then the obstetrician prepared to perform an emergency cesarean section. The anesthesiologist evaluated the patient and then chose an epidural. The epidural dose was 3mL 1% lidocaine +0.5% rox mixture, and 7mL 1% lidocaine +0.5% rox mixture was administered 3 minutes later. During the administration, the patient complained of unbearable headache and rapid loss of consciousness. Immediate organization rescue, uterine dissection, pressure oxygen, preparation of tracheal intubation, cardiopulmonary resuscitation, cardiovascular active drugs, etc. After about 1 minute, the patient regained consciousness, responded smoothly, the vital signs were stable, the anesthesia plane T8 was measured. The patient's surgery went smoothly, and there were no complications during postoperative follow-up. They were discharged 5 days later. Such cases are relatively rare, especially during cesarean section surgery has not been reported, so it is published for everyone's reference.

Keywords: labor analgesia, caesarean section, transient consciousness disorder

Case History

Female 32 years old. Because of "menopause for 39+1 week, redness for 4+ hours", there is nothing special during pregnancy.

Inpatient examination: ECG and blood routine biochemical examination are normal. Ultrasonic results: March 27, 2023: Head position, biparietal diameter 9.3cm, femur length 7.0cm, head circumference 33.4cm, abdominal circumference 33.0cm, amniotic fluid index 11.3cm, umbilical blood flow S/D2.3, single live fetus, umbilical cord without neck wrapping. No previous history of anesthesia surgery.

Admission diagnosis: 1 pregnant, 0 intrauterine pregnancy, 39 + 1 week left occipital single live fetus.

In the delivery room, the fetal heart rate monitoring indicated that the baseline fluctuation was 140–160 beats/minute, and the contraction was 30 seconds/4 minutes. Among the intensities, the vaginal examination showed that the cervix was 2+cm open, the head was exposed to S-2, the fetal membrane was broken, and the amniotic fluid was clear, so labor analgesia was required.

Half an hour later, the anesthesiologist performed L2-3 puncture epidural labor analgesia for the patient. The patient-controlled epidural analgesia infusion pump (100mL, 1% ropivacaine 10mL+, sufentanil 50ug+ and normal saline 89mL) was configured, with a continuous load of 8mL, continuous infusion of 8mL/h, and patient-controlled analgesia (PCA) 6 mL/time with an interval of 15 minutes. The analgesic effect is good.

Then, about 40 minutes later, the maternal fetal heart showed variation deceleration with late deceleration, and the minimum variation was reduced to 85 times/minute. The fine variation was poor, and the body position was changed immediately, oxygen was inhaled, rapid infusion was performed, and the contraction was 30 seconds/3 minutes, with moderate intensity. Vaginal examination: the cervix is 2+cm, no umbilical cord prolapse is found at the cervix, the fetal head is pushed up, and no fetal heart change is found. After 15 minutes of observation, the fetal heart rate did not improve, and emergency cesarean section was prepared.

Patients were routinely monitored for vital signs, BP115/70mmHg, HR117bpm and spo2 98%. Open the venous passage, ask the patient for painless effect, check the epidural catheter in good position sideways, and there is no liquid medicine and blood in the back pumping. Choose epidural anesthesia after communicating with the surgeon. Epidural dose was 1% lidocaine +0.5% ropivacaine mixture 3mL. Three minutes later, 7mL of 1% lidocaine and 0.5% ropivacaine mixture was given. During the administration, the patient complained of unbearable headache and quickly lost consciousness. Cannot speak, does not respond to calls, and the pupil's reflex to light disappears. At this time, the patient's vital signs were stable, and the monitor showed: HR 89bpm SpO2 99% Bp 118/87mmHg. Immediately organize rescue, cesarean section, pressurized oxygen supply, preparation of tracheal intubation, cardiopulmonary resuscitation, cardiovascular active drugs, etc.

About 1 minute later, the patient regained consciousness, and his vital signs were stable. The anesthesia plane T8 was measured, and the operation was smooth.

There were no complications in postoperative follow-up, and the patient was advised to do CT of skull and spinal canal, but the patient refused and recovered and was discharged after 5 days.

Discussion

This patient is a 32-year-old female with no history of other diseases and no history of anesthesia operation. After 39 weeks of pregnancy, we were admitted to the hospital, and after regular contractions, the cervix was opened two fingers, we implemented epidural labor analgesia, and the process was smooth and the effect was good. However, there was a deceleration of fetal heart rate variation, which did not improve after obstetric treatment and was sent to the operating room for an emergency cesarean section. Considering that the patient's labor analgesia effect is good, it is decided to give drugs from the hard external catheter for labor analgesia for epidural anesthesia. After giving experimental dose of 3mL local anesthetic for 3 minutes, the patient complained of headache and quickly lose consciousness. Cannot speak, does not respond to calls, and the pupil's reflex to light disappears, when he was given loading dose of 7mL. It has been reported that¹ The unconsciousness of patients during cesarean section under spinal anesthesia is mainly due to severe hypotension and bradycardia caused by high spinal anesthesia level, and coma caused by cerebral ischemia and hypoxia. However, in this case, the patient's blood pressure and heart rhythm remained stable all the time, and the anesthesia level was measured at T8 again after a short unconsciousness, so it can be ruled out that the patient was unconscious because of the spinal anesthesia level. Before epidural administration, the anesthesiologist pumped back without any liquid, and the patient regained consciousness in about 1 minute without any treatment, and the stable circulation basically ruled out that moderate local anesthesia and cerebrovascular accident caused the patient unconsciousness. Some scholars also reported² a case of sudden epilepsy in the process of taking out the fetus after cesarean section. After pressurized oxygen supply and propofol injection, the symptoms of the patient were quickly controlled, and the patient had no history of epilepsy. This patient has no history of epilepsy, and there is no muscle twitching during the onset, so it is not considered as an epileptic seizure for the time being.

Because the patient's only clinical symptom is severe headache, we suspect that a certain amount of liquid medicine accumulated in the epidural space during painless delivery, and 11mL of local anesthetic was injected quickly in a short time during emergency cesarean section, which led to a rapid increase in the pressure in the spinal canal and a corresponding increase in intracranial pressure, leading to severe headache and a short coma caused by decreased cerebral perfusion. Some scholars have specially studied the relationship between the volume of intraspinal injection and the pressure,³ and come to the conclusion that injecting a large amount of fluid into the spinal canal may lead to serious neuropathy. However, even a small volume of epidural injection may lead to dangerous epidural, subarachnoid and intracranial pressure or pressure gradient under the unfavorable anatomical or pathological conditions of spinal canal.

The maximum allowable volume of single or multiple divided injections of liquid is calculated. In the presence of spinal cord lesions, 10 mL of liquid may increase the epidural pressure to more than 100 mm Hg. Injection speed exceeding 4 mL per second may also produce dangerous intraspinal and intracranial pressure. Intermittent injection may provide limited protection, but when the total injection reaches a critical value, the pressure in the spinal canal may rise rapidly. Potential complications of increasing intracranial pressure or generating large pressure waves include nerve paralysis, tinnitus, blindness, stroke and death. The cases we reported basically combined the research results of this scholar, but unfortunately, the patient himself refused the suggestion of CT scan of the skull and lumbar spine after operation, and we could not confirm whether the patient had a space occupation in the brain and spinal canal.

Consent for Publication

The patient provided informed consent to publish their case details and any accompanying images. This case report has been approved by the Ethics Committee of Shenzhen People's Hospital and the patient themselves for publication in academic journals as a normal academic exchange.

Disclosure

The authors report no conflicts of interest in this work.

References

1. Kayaalti S. Intermittent loss of consciousness during cesarean section under spinal anesthesia: a case report. *Braz J Anesthesiol.* 2019;69(6):631–634. doi:10.1016/j.bjan.2019.09.006
2. Zhou W, Zhu Q. Sudden seizure during cesarean section: a case report. *Medicine.* 2018;97(52):e13785. doi:10.1097/MD.0000000000013785
3. Bosscher H. Pressure-volume relationships in the spinal canal and potential neurological complications after epidural fluid injections. *Front Pain Res.* 2022;3:884277. doi:10.3389/fpain.2022.884277

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