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## CLINICAL INFORMATION

# Intermittent loss of consciousness during cesarean section under spinal anesthesia: a case report



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### KEYWORDS

Anesthesia;  
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**Abstract** Loss of consciousness during spinal anesthesia is a rare but scary complication. This complication is generally related to severe hypotension and bradycardia, but in this case, the loss of consciousness occurred in a hemodynamically stable parturient patient. We present a 31 years-old patient who underwent an emergency cesarean section. She lost consciousness and had apnea that started 10 minutes after successful spinal anesthesia and repeated three times for a total of 25 minutes, despite the stable hemodynamics of the patient. The case was considered a subdural block, and the patient was provided with respiratory support. The subdural block is expected to start slowly (approximately 15–20 minutes), but in this case, after about 10 minutes of receiving anesthesia, the patient suddenly had a loss of consciousness. After the recovery of consciousness and return of spontaneous respiration, the level of a sensory block of the patient, who was cooperative and oriented, was T4. There were motor blocks in both lower extremities. Four hours after intrathecal injection, both the sensory and motor blocks ended, and she was discharged two days later with no complications. Hence, patients who receive spinal anesthesia should be closely observed for any such undesirable complications.

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### PALAVRAS-CHAVE

Anestesia;  
Obstetrícia;  
Complicações;  
Bloqueio subdural;  
Inconsciência

### Perda intermitente de consciência durante cesariana sob raquianestesia: relato de caso

**Resumo** A perda de consciência durante a raquianestesia é uma complicação rara, mas assustadora. Essa complicação geralmente está relacionada à grave hipotensão e bradicardia, mas, neste caso, a perda de consciência ocorreu em uma paciente parturiente hemodinamicamente estável. Apresentamos o caso de uma paciente de 31 anos, submetida a uma cesariana de emergência. A paciente perdeu a consciência e apresentou apneia que teve início 10 minutos após a raquianestesia bem-sucedida e repetiu o episódio três vezes por 25 minutos,

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a despeito de sua hemodinâmica estável. O caso foi considerado como um bloqueio subdural e a paciente recebeu suporte respiratório. Espera-se que o bloqueio subdural inicie lentamente (aproximadamente 15–20 minutos), mas, neste caso, cerca de 10 minutos após a anestesia, a paciente repentinamente perdeu a consciência. Após a recuperação da consciência e o retorno da respiração espontânea, a paciente que estava orientada e cooperativa apresentou nível de bloqueio sensorial em T4. Havia bloqueio motor em ambas as extremidades inferiores. O bloqueio sensorio-motor terminou quatro horas após a injeção intratecal e a paciente recebeu alta hospitalar dois dias depois, sem complicações. Considerando o exposto, os pacientes que recebem raquianestesia devem ser atentamente observados para quaisquer complicações indesejáveis.

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## Summary

In this case report, we aim to present a patient who had intermittent Loss of Consciousness (LOC) and periods of apnea starting at 10 minutes of spinal anesthesia with stable hemodynamics. There are important differences between case reports in literature and our case report. First, because of the intracranial spread of the local anesthetic, dilated pupil symptoms were detected in cases in literature, but her pupils were normal. Second, in addition to the other case reports, in our case report three short-term LOC and apnea periods were observed at 5 minutes intervals in this patient.

## Introduction

Spinal anesthesia is more preferred lately to having a Cesarean Section (CS).<sup>1</sup> This preference is because regional anesthesia is safer for both the mother and fetus.<sup>2</sup> In addition, being conscious during the delivery of their babies is also the reason why spinal anesthesia is preferred by patients. However, serious complications causing transient LOC during spinal anesthesia have been reported.

In this case report, we aim to present a patient who had intermittent LOC and periods of apnea starting at 10 minutes of spinal anesthesia with stable hemodynamics. Unlike other case reports in the literature that reported LOC during spinal anesthesia, three short-term LOC and apnea periods were observed at 5 minutes intervals in this patient.<sup>3,4</sup>

## Case report

Written consent was obtained from the patient for publication of this case report. A 31-year-old patient (parturient) with gravid 4 and parity 3 was taken to have an emergency CS because of repeat CS (in labor). She had no history of medical illness or psychiatric history, and there were no complications under general anesthesia during the previous CS. Preoperative laboratory findings

were within normal limits. No premedication was given except for preoperative 1000 mL of 0.9% NaCl solution administered preoperatively. Her basal blood pressure was 120/70 mmHg, the heart rate was 70 bpm, and the SpO<sub>2</sub> value was 96%. A single attempt was made using a 25G Quincke spinal needle (GALENA) from the L3–4 range in the sitting position, under aseptic conditions.

A slow intrathecal infusion of 1.9 mL of 0.5% hyperbaric bupivacaine was performed. She was brought to the supine position immediately. She was given a mild left lateral position to prevent uterine compression. Then, supplemental oxygen was given at 2–3 L·minutes<sup>-1</sup>. She reached sensory block level T4 within 3 min after intrathecal injection (Modified Bromage Score<sup>5</sup> was 3). A single dose of 10 mg ephedrine was administered to her when her blood pressure was 90/50 mmHg within the first 10 minutes one time. Then her blood pressure returned to normal (110/80 mmHg).

When the baby was born in the 10th minute of anesthesia, she suddenly had LOC. She did not respond to both verbal and painful stimuli, and her breathing stopped. After the birth of the baby, no medication other than oxytocin was administered (20 IU oxytocin in 1000 mL of 0.9% NaCl over 2 hours was administered immediately after delivery). Before her LOC, she did not make any complaints such as nausea, vomiting, muscle weakness, difficulty in breathing, or chest pain. Her vital signs were also stable (her blood pressure and heart rate were 110/70 mmHg, 70 bpm, respectively). Her pupils were normal, and her pupillary light reflex was positive. She was immediately supported by balloon mask ventilation. Since the duration of the apnea period could not be estimated, she was not intubated and was evaluated in terms of consciousness and spontaneous breathing effort at 2 minutes intervals. After 5 minutes, she started breathing spontaneously and was conscious, cooperative, and oriented. There was no increase in both sensory and motor block levels.

After about 5 minutes, a new apnea period occurred, and she became unconsciousness. The second LOC period also took about 5 minutes. Then, after a consecutive period of 5 minutes, she lost consciousness for the third time.

During this period, her breathing was rapid and shallow but did not stop completely. During this process, she was supported with the head-tilt/chin-lift maneuver and provided oxygenation by a mask. The last LOC period lasted about 3 minutes. During the last two episodes, her blood pressure and heart rate were recorded as 110/70 mmHg, 80 bpm, and 100/70 mmHg, 80 bpm, respectively. She remained stable until the end of the operation, and no other problems were encountered. For arterial blood pH, blood glucose, and electrolyte analysis, blood samples were drawn from the patient during the apnea period. There were no abnormalities in the test results to explain the LOC (Blood glucose: 85 mmol.L<sup>-1</sup>, hemoglobin: 12.3 g.dL<sup>-1</sup>, platelets: 144 10<sup>9</sup>/L, leukocytes: 8.49 10<sup>9</sup>/L, Aspartate transaminase/Alanine transaminase (AST/ALT): 22.5/16.8 U.L<sup>-1</sup>, BUN-to-creatinine ratio (BUN/Cr): 8/0.57 mg.dL<sup>-1</sup>, Na/K: 141/3.7 mmol.L<sup>-1</sup>, Ca: 7.9 mg.dL<sup>-1</sup>, arterial blood pH: 7.48, PCO<sub>2</sub>: 29.4 mmHg, PO<sub>2</sub>: 85.6 mmHg, and SO<sub>2</sub>: 95.8%). Four hours after intrathecal injection, her Modified Bromage score was 0. When she was questioned about the LOC, she said that she could not remember anything. A postoperative Cranial Tomography (CT) was also performed, and no pathology was detected in the CT scan. She was discharged after two days without any complications.

## Discussion

Cerebral complications of preeclampsia, absence seizures, amniotic fluid embolism, pulmonary embolism, or acute cranial events are among the causes of LOC in patients having a CS. Complications due to spinal anesthesia, such as a total spinal block or subdural block, may also cause LOC.

She had no history of preeclampsia or epilepsy. There were no complications, such as foaming at the mouth, twitching, or gliding of the eyes. Therefore, it was thought that the LOC was not due to a seizure. Her blood glucose levels were also within normal limits. There were no symptoms suggestive of an allergic reaction.

The patient was not intubated because her consciousness returned quickly within a short span of 5 minutes. The patient had no response to repeated, painful stimuli. Her apnea status was accepted by two anesthetists who confirmed at the same time that her mental disorder was not hysterical.

Amniotic fluid embolism is one of the worst complications of pregnancy. Four criteria for diagnosis include acute hypotension or cardiac arrest, acute hypoxia, coagulopathy, or serious bleeding.<sup>6</sup> There was no hypotension, cardiovascular instability, or coagulopathy. She also did not complain of chest pain or shortness of breath before the LOC.

Davis et al.<sup>7</sup> wrote about a patient with an air embolism that occurred in the cerebral artery during a CS. However, in their patient, delayed recovery after general anesthesia and neurological deficits that lasted for days has been defined in addition to intraoperative LOC. In our patient, no neurological deficits were detected. Her postoperative CT revealed no pathology. The lack of precordial Doppler or echocardiography at the time of the LOC or after recovery to exclude

the diagnosis of an air embolism or cardiac defects is the limitation of the case report.

A total spinal block is a rare but life-threatening complication. It is characterized by LOC, hypotension, bradycardia, and respiratory failure.<sup>8</sup> Our patient had only mild hypotension once. She was hemodynamically stable throughout the operation. Therefore, the diagnosis of a total spinal block was also excluded.

In two case reports<sup>3,4</sup> of LOC during CS under spinal anesthesia, no cardiovascular instability was observed. Patients reported by Bhati et al.<sup>3</sup> and Chan et al.<sup>4</sup> had a LOC and respiratory failure lasting about 30 minutes and one hour after 12 and 20 minutes of intrathecal injection, respectively. They concluded that this might be due to the subdural block.

There are many case reports describing the subdural block complication following spinal or epidural anesthesia. The subdural block is expected to start slowly (approximately 15–20 minutes). However, as the subdural space is limited, apnea and LOC can be observed in a short time because of the intracranial spread after administering the anesthetic solution. In our patient, symptoms were observed after 10 minutes. Several case reports<sup>9–11</sup> have reported the same time for the onset of symptoms to occur or even less time (within 1–2 min). Unlike other case reports, three short-term LOC and apnea periods were observed at 5 minutes intervals in our case.

Rapid onset of the subdural block is thought to be a highly probable reason for the LOC. With fast and adequate support, the patient recovered without any other complications or sequelae.

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## Conflicts of interest

The author declares no conflicts of interest.

## References

1. Siddik-Sayyid S, Zbeidy R. Practice guidelines for obstetric anesthesia. *Middle East J Anesthesiol.* 2008;19:1291–303.
2. Jadon A. Complications of regional and general anaesthesia in obstetric practice. *Indian J Anaesth.* 2010;54:415–20.
3. Bhati FS, Vijayvergia VK, Laxmi V, et al. Loss of consciousness following spinal anaesthesia for caesarean section. *Indian J Anaesth.* 2004;48:57–8.
4. Chan Y, Gopinathan R, Rajendram R. Loss of consciousness following spinal anaesthesia for caesarean section. *Br J Anaesth.* 2000;85:474–6.
5. Bromage PR. A comparison of the hydrochloride and carbon dioxide salts of lidocaine and prilocaine in epidural analgesia. *Acta Anaesthesiol Scand.* 1965;16:55–69.
6. Kaur K, Bhardwaj M, Kumar P, et al. Amniotic fluid embolism. *J Anaesthesiol Clin Pharmacol.* 2016;32:153–9.
7. Davis F, Glover P, Maycock E. Hyperbaric oxygen for cerebral arterial air embolism occurring during caesarian section. *Anaesth Intensive Care.* 1990;18:403–5.

8. Collier C. Total spinal or massive subdural block? *Anaesth Intensive Care*. 1982;10:92-3.
9. Karaca Ö, Ahiskalıođlu A, Aksoy M, et al. What happened? An inexplicable case: Accidental subdural block. *Agri*. 2018;30:31-4.
10. Kalil A. Unintended subdural injection: a complication of epidural anesthesia - a case report. *AANA J*. 2006;74:207-11.
11. Wills JH. Rapid onset of massive subdural anesthesia. *Region Anesth Pain Med*. 2005;30:299-302.