

# Anaesthetic Management Of A Patient With Cerebral Palsy During Cesarean Section

M Inal

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## Abstract

A 32-year-old pregnant woman with cerebral palsy was scheduled for cesarean section at 36 weeks gestation. Because of the risk of anesthetic reaction spinal anesthesia was not chosen and general anesthesia was performed. During and after cesarean section no anesthetic reaction was observed.

## INTRODUCTION

Cerebral palsy is a nonprogressive disorder of motion and posture. The causes are multiple, but all result in damage to the central nervous system (1). In patients with cerebral palsy, many problems may occur. Problems during the perioperative and postoperative period may include hypothermia, nausea, vomiting, muscle spasm and respiratory depression. Risk of anesthetic reaction make spinal anesthesia difficult to perform in these patients (2). General anesthesia is therefore often selected.

We report the anesthetic management of a patient with cerebral palsy during cesarean section.

## CASE REPORT

A 32-year-old, 70 kg, 160 cm pregnant woman with cerebral palsy was scheduled for cesarean section at 36 weeks gestation. On physical examination head and neck evaluation was normal and she had a Mallampati class I airway. The cardiac examination revealed a regular heart beat. The lungs were clear to auscultation. Hemoglobin, white cell count, platelet count, plasma electrolytes, prothrombin time and activated partial thromboplastin time were normal. Because she suffered from severe curvature of the spine, she could not be positioned for spinal anesthesia and general anesthesia was selected. The patient was transported to the operating theatre in the lateral position and a 15° left lateral tilt was maintained on the operating table. An 18-gauge i.v. cannula was inserted into forearm and standard monitoring (electrocardiogram, pulse oximetry, non-invasive arterial blood pressure) was used.

After 2 min of pre-oxygenation, general anesthesia was induced with thiopental sodium 3 mg kg<sup>-1</sup> followed rapidly by succinylcholine 1 mg kg<sup>-1</sup>. Cricoid pressure was applied after loss of consciousness and maintained until the airway was secured using a tracheal tube. Anesthesia was maintained with oxygen 100%. The interval between induction and delivery was 20 minutes. After delivery 10 IU oxytocin was administered. Apgar scores were 9 and 10 at 1 and 5 minutes. After the umbilical cord was clamped, nitrous oxide was increased to 50% and sevoflurane 1% in oxygen was started.

After recovery from succinylcholine, muscle relaxation was maintained with atracurium 0.5 mg kg<sup>-1</sup>. The lungs were mechanically ventilated and normocapnia was maintained.

Maternal recovery from anesthesia was good. She did not complain of pain. Uterine contraction was sufficient. No anesthetic reaction was observed during peri and postoperative period. After 2 days she was discharged from the hospital.

## DISCUSSION

For patients with cerebral palsy, general anesthesia is sometimes required for delivery (3). General anesthesia has some problems including transport of drugs to the fetus in patients with cerebral palsy. Regional anesthesia may be beneficial since it can avoid neonatal respiratory problems. Several studies showed that some i.v. anesthetics cause seizures when used with general anesthesia in patients with cerebral palsy (4,5). General anesthesia must therefore be carefully maintained in patients with cerebral palsy. In the

present case, general anesthesia was selected because of the risk of athetotic reaction and difficulty for the patient to maintain supine position during operation. Maternal awakening after the operation was uneventful and no neonatal respiratory depression was observed. It is important both to avoid fetal hypoxia caused by maternal athetotic reaction and to avoid neonatal respiratory depression. We prepared all equipment and we were ready for neonatal resuscitation.

Thiopental sodium is an i.v anesthetic and also a barbiturate. Several studies showed that thiopental sodium is safe for cesarean section. Cellano et al. (6) compared thiopental sodium, propofol and midazolam as induction drugs for cesarean section. In this study they found that the lowest APGAR scores were seen in the propofol group. Several studies (7,8) reported that propofol was used safely for anesthesia induction during cesarean section.

In cesarean section with general anesthesia, patient awareness during surgery must be avoided. In the present case, our patient was not aware during surgery with the use of thiopental sodium for induction of anesthesia followed by N2O and sevoflurane.

In conclusion, we used thiopental for general anesthesia for a patient with cerebral palsy. No respiratory depression or neonatal depression were observed. For anesthesia of the patients with cerebral palsy appropriate preoperative

evaluation is required.

### CORRESPONDENCE TO

Mehmet Turan INAL, MD Address: Etimesgut Military Hospital, Department of Anesthesiology and Reanimation Etimesgut /Ankara /Turkey Tel: +903122491011 Fax: +903122444977 e-mail: mehmetturaninal@yahoo.com

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**Author Information**

**Mehmet Turan Inal**

Consultant, Department of Anesthesiology and Reanimation, Etimesgut Military Hospital