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Case Report

Anesthesia Management in Emergency Cesarean Section of Pregnant with an Undiagnosed Neuromuscular Disease

Tanı Konulmamış Nöromüsküler Hastalığı Olan Gebenin Acil Sezaryen için Anestezi Yönetimi

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Abstract

A 30 year-old ASA II pregnant woman with an undiagnosed neuromuscular disease at 41 weeks of gestation was admitted to our hospital. Neurological examination is normal except lower extremity weakness that has been ongoing for the last 10 years. In this case report, we aimed to discuss general anesthesia management for emergency cesarean section of this particular pregnant woman.

Keywords: cesarean section; neuromuscular diseases; anesthesia

Öz

30 yaşında ASA II gebe kadın 41. gebelik haftasında tanı konmamış nöromusküler hastalık nedeniyle hastanemize başvurdu. Son 10 yıldır devam eden alt ekstremite güçsüzlüğü dışında nörolojik muayenesi normaldi. Bu olgu sunumunda, bu özel gebenin acil sezaryeninde genel anestezi yönetimini tartışmayı amaçladık.

Anahtar Kelimeler: sezaryen; nöromusküler hastalık; anestezi

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Introduction

Emergency cesarean section (CS) under anesthesia in a parturient with a history of neuromuscular disease carries high risk of morbidity and mortality due to increased risk of complicating respiratory muscle functions after general anesthesia or existing lower extremity weakness after spinal anesthesia [1]. In this case report, we aimed to discuss general anesthesia management in a pregnant woman with an undiagnosed neuromuscular disease history scheduled to undergo emergency CS.

Case

A 30-year-old ASA II pregnant woman (160 cm and 75 kg) at the 41 weeks of gestation in active labor was admitted to the emergency room and then immediately transferred to obstetric and gynecologic (OBGYN) clinic. The patient had a medical history of lower extremity weakness for the last 10 years. In the beginning of the pregnancy, the parturient was referred to rheumatology and neurology departments due to the pre-existing elevated creatinine kinase (CK) and liver function tests. The electromyography was reported as normal and examination of bilateral lower extremity iliopsoas muscle strength of the patient was noted as 3/5 but there was no weakness in the lower extremities. Thus, any connective tissue disease or myositis or vasculitis (monoclonal antibodies in the immunofixation and immune extraction electrophoresis in serum/plasma test were negative) was considered as a preliminary diagnosis. Consensus was made to wait for the postpartum period for further evaluations.

After emergency CS decision by the obstetricians due to the indication of non-progressed labor and cephalopelvic disproportion, written informed consent for operation and anesthesia, was obtained from the patient. In the preoperative anesthetic evaluation of the case, there is no known drug allergy, no history of anesthesia and surgery. Because of the undiagnosed neuromuscular disease history and current lower extremity weakness, we decided to perform general anesthesia using total intravenous anesthesia (TIVA) for this particular patient. We did not use inhalation anesthetics and depolarizing muscle relaxants because of the potential risk for malignant hyperthermia. We kept dantrolene ready in the operation room and monitored the patient's body temperature continuously [2]. After administering 10 mg of IV metoclopramide (Anti-Nausea 10mg/2ml, Onfarma, Samsun, Turkey) and 2 gram of cefazolin (Cezol 1g, Deva, İstanbul, Turkey®) IV before onset of surgery, 100% preoxygenation was followed by IV induction with propofol (Propofol-PF 1%, Polifarma,Tekirdağ,Turkey) (2.5 mg/kg) and 0.2 µg/kg/min remifentanil (Rentanil 2 mg ,Vem ilaç, Ankara, Turkey) infusion.

Adequate muscle relaxation was achieved using TOF (train of four) monitoring after giving 20 mg IV rocuronium (Muscuron 50mg/5ml, Koçak Farma, Tekirdağ, Turkey). When the TOF was 2, endotracheal intubation was facilitated with an ID of 7 mm endotracheal tube. Then, anesthesia was maintained with propofol (6-8 mg/kg/h) and remifentanil (0.1-0.2 mcg/kg/min) infusion. Four minutes after skin incision, a male baby (48.5 cm and 3070 grams) was born. Newborn's 1st and 5th minute APGAR scores were noted as 7/10 and 10/10, respectively. After umbilical cord clamping, oxytocin (Synpitan Forte 5 IU/ml, Deva, İstanbul, Turkey) 20 IU/1000 mL Ringer's lactate was administered by IV infusion. Uterine tone was achieved, bleeding control was done and CS operation was completed. For antagonizing residual neuromuscular block, IV sugammadex (Sugawake 200 mg/ 2 ml, Abdi İbrahim, İstanbul, Turkey) (2 mg/kg) was given. Then, the patient was extubated when spontaneous breathing returned. Meanwhile, the TOF ratio was greater than 0.9, and the patient was fully awake. For postoperative analgesia, 6 mg of IV morphine (Morfin Hidroklorür 0.01 gr/1 ml, Osel, İstanbul, Turkey) and 1 gram of IV paracetamol (Paracerol 10 mg/ml, Polifarma, Tekirdağ, Turkey) were administered. To prevent further nausea and vomiting, 1 mg of IV granisetron (Granitron 3 mg/3ml, Koçak Farma, İstanbul, Turkey) was added as an antiemetic. The case was followed in the recovery unit for about half an hour and then transferred to the ward for further follow up.

Discussion

Successful and uneventful management of general anesthesia using TIVA and TOF monitoring for an emergency CS of a pregnant woman with an undiagnosed neuromuscular disease history was presented.

Choice of anesthesia technique in a patient with a known neuromuscular disease is challenging but in case of an existing history of undiagnosed neuromuscular disease is more challenging [3]. Therefore, anesthesia technique should be selected with caution. We did not prefer spinal anesthesia for the present patient as it may complicate the existing lower extremity weakness. However, postoperative respiratory muscle functions of the patient may also be adversely affected after general anesthesia. Thus, we waited until the patient regained his muscle strength to start spontaneous respiration. We observed and confirmed the recovery of muscle strength

with TOF monitoring. We selected anesthetic drugs that could not result in further increase in creatinine kinase (CK) and liver enzymes. Considering the risk of respiratory distress in the postoperative period, we observed the patient closely because of a possible need for noninvasive or invasive mechanical ventilation during followed up in the PACU [4].

Conclusion

In a parturient with an undiagnosed neuromuscular disease plus increased liver enzymes, careful use of muscle relaxants via monitoring TOF under TIVA, seemed to be the appropriate approach for emergency CS with uneventful postoperative period.

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