Acute Dystonia after a Single Dose of Intravenous Metoclopramide during Elective Cesarean Section: A Case Report

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Abstract

We would like to present the first report of severe acute dystonic reaction after a single administration of metoclopramide during cesarean section under combined spinal-epidural anesthesia. During elective cesarean section, a 30-year-old female vomited four times and was treated with 10mg intravenous metoclopramide and 8mg intravenous ondansetron. Nausea subsided with the antiemetic treatment, but two minutes later, patient had rapid eye blinking, uncontrollable head movement, and became unresponsive. Bolus of 50mg intravenous diphenhydramine resolved the acute dystonic symptoms within seconds. Patient was again oriented times three, with no recollection of symptoms, and remained symptom free for the rest of admission.

Introduction

Acute dystonia has been reported to occur several days after the commencement of metoclopramide, a dopamine receptor antagonist. However, to the best of our knowledge, there is no report of an acute dystonic reaction immediately after just one dose. We report a case of a woman developing a severe acute dystonic reaction intraoperatively during a cesarean section with combined spinal-epidural anesthesia after one administration of metoclopramide. Written informed consent was obtained from the patient for publication of this report.

Case Presentation

A 30 year old female with a past medical history of intravenous drug abuse on methadone maintenance therapy and untreated hepatitis C infection presented to our institution at 39 weeks gestation for a scheduled repeat cesarean section. One hour prior to the procedure, a scopolamine patch was placed behind the patient’s right ear for prophylactic antiemetic treatment. Upon arrival to the operating room, the patient’s vital signs were as follows: blood pressure 128/65 mmHg, heart rate 88 beats per minute, respiratory rate 16, and oxygen saturation 100% on room air. The patient had an uneventful combined spinal-epidural placement. Several minutes prior to the delivery of the baby, the patient experienced sudden nausea and vomited twice. Once the baby was delivered, her uterus was exteriorized and she vomited two more times.

To combat the nausea and abort the vomiting, the anesthesiologist administered a bolus of 10 mg of intravenous metoclopramide and 8 mg of intravenous ondansetron. The patient’s nausea passed, but about two minutes after the antiemetic treatment, the patient had rapid eye blinking, uncontrollable movement of her head to the right, and became unconscious. Treatment with 50 mg intravenous diphenhydramine bolus followed by a 10 cc saline flush was administered, and the symptoms resolved within seconds.

She was again awake, alert, and oriented to person, place, and time. There was no effect on her vital signs, and she had no recollection of the symptoms that she had just experienced. The patient remained symptom free for the rest of the operation and throughout the rest of her four day hospital admission.

Discussion

Approximately 80% of parturients experience nausea and/or vomiting during cesarean section with regional anesthesia [1,2]. Besides causing distress for the parturient, intraoperative vomiting may make peritoneal closure more difficult for the obstetrician, increase the risk of inadvertent viscus perforation, lengthen the duration of surgery, and lead to aspiration pneumonitis [3-5]. Therefore, when a woman

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is actively vomiting intraoperatively, a pharmacological medication with a rapid onset of action is necessary.

Intravenous metoclopramide, a dopamine receptor antagonist, has an onset of action of one to three minutes and is frequently utilized for this purpose [3]. Dopaminergic receptor antagonists exert an antiemetic effect by blocking the electrical potential transmission within the chemoreceptor trigger zone (CTZ), which is responsible for coordinating physical movements during emesis. Blocking the CTZ not only stops emesis, but it may also prevent other purposeful movements in individuals [6]. One in five-hundred patients experience the adverse reaction of life-threatening involuntary body movements, called acute dystonic reaction, after the administration of 30-40 mg of metoclopramide per day [7-9].

Acute dystonia has been observed several days after the commencement of metoclopramide [10,11]. To the best of our knowledge, this is the first report of severe acute dystonic reaction after just a single administration of metoclopramide during a cesarean section with combined spinal-epidural anesthesia.

Prompt use of intravenous diphenhydramine treatment relieved our patient’s acute dystonic reaction. Although there have been multiple reports in literature demonstrating that diphenhydramine effectively improves the clinical manifestations of acute dystonia [12-14], there is still uncertainty of diphenhydramine’s mechanism of action. Van’t Groenewout, et al. demonstrated that the injection of diphenhydramine into rats attenuated acute dystonic reactions induced by haloperidol in the rat red nuclei [15]. It is likely that central anticholinergic and/or antihistamine effects of diphenhydramine helped reverse our patient’s extrapyramidal signs [12].

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Conflicts of Interest

The authors declare that there are no conflicts of interest.

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