



Case Report

A case report on the effects of atropine against baclofen in inguinal hernia surgery patient[☆]

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ABSTRACT

Introduction: Intake of baclofen, as an anti-spasm is common in patients with inguinal hernia.*Presentation of case:* This paper reports a case where preoperative intake of baclofen for back pain is associated with the decrease in heart rate and blood pressure.*Discussion and conclusion:* However, atropine can effectively correct this condition, with precise monitoring and care.© 2020 The Author(s). Published by Elsevier Ltd on behalf of Surgical Associates Ltd. This is an open access article under the CC BY-NC-ND license (<http://creativecommons.org/licenses/by-nc-nd/4.0/>).

1. Background

Baclofen is used for the treatment of muscle spasm. Intake of baclofen has been reported in inguinal hernia patients of age 50–59 years to achieve relieve against back pain [1]. Inguinal hernia repair is one of the most common ambulatory surgical procedures used to repair abdominal wall weakness that abnormally allows the abdominal contents to escape from a narrow tube called the inguinal canal in the groin region. Surgery is the only procedure that can be exploited for hernia repair since the body cannot correct this itself. However, not all conditions require immediate surgery [2].

2. Case presentation

A 40-year-old man weighing 80.00 kg was a candidate of inguinal hernia repair which was to be restored to the right. He was transported to our center by a family member and was presented with bulge near pubic bone and groin pain. He did not present any other major medical condition but a 2-year history of lower back pain at L4-L5 for which he was using muscle relaxant. His initial vital signs were as follows; pre-up primary blood pressure: 110/75, PR: 76, RR: 11, T: 37.50. A patient reported ilioinguinal and iliohypogastric dissatisfaction after spinal anesthesia and was therefore

administered 2 mg midazolam local anesthetic of 1.50% lidocaine with 15 ml of epinephrine (225 mg) intravenously, and sonography was performed in the area between trans-and intra-muscle 5 ml of 1.50% lidocaine (300mg) was also injected and cord sonography was performed. 15 minutes following anesthesia, the blocks were surgically removed, with the stability of vital signs (before and after block) and the patient was without any pain. The patient was immediately observed for the previous symptoms and was transferred to the post anesthesia care unit (PACU). Within 25–45 minutes following his admission in PACU, his heartrate declined to 45 and 35, respectively. He also reported dizziness, blurred vision, sweating, nausea, while his blood pressure dropped to 85/60. He was immediately administered with 0.5 mg IV of atropine after which his heart rate was 78 and his blood pressure was maintained at 100/70. However, after the next 10 minutes, blood pressure and heart rate dropped 83/50 and 37, respectively in addition to vertigo and lethargic. However, his condition improved after 0.5 mg of atropine. The procedure was repeated 3 times in total, and the patient was provided with cardiac consultancy. He was transferred to the critical care unit (CCU) and monitored for 24 hours. During this period, the patient was diagnosed with bradycardia and clinical signs of dizziness, nausea, vomiting, blurred vision, and heart rate of 60 beats per min. Owing to betterment in his overall condition, he was discharged. During the patient's hospital stay at the CCU, he pointed out that he had been taking baclofen approximately 60–400 mg for a week before surgery (Table 1). We returned after 2 weeks for follow-up for our surgical unit. The follow-up was

[☆] This study was approved by the Research Ethics Board of Lorestan University of Medical Sciences.

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Table 1

Heart rate and blood pressure changes in patient postoperatively at various intervals, following treatment with atropine.

Time of the measurement	Heart rate and blood pressure
Preoperative	110/75 and 76
45 minutes, postoperative	85/60 and 35
After first dose of atropine (0.5mg IV)	100/70 and 78
10 minutes after atropine	83/50 and 37
After second dose of atropine (0.5mg IV)	110/70 and 77
20 minutes after atropine	80/50 and 60
After third dose of atropine (0.5mg IV)	110/70 and 75
Final parameters at the time of discharge	110/70 and 73

conduct by surgical resident where patient did not report has cardiac and respiratory problems and the surgical wound was healed with no signs of infection.

The work has been reported in line with the SCARE 2018 criteria, Agha, Borrelli [3]. Written informed consent was obtained from the patient for publication of this case report and accompanying images.

3. Discussion and conclusion

Abdominal hernia is characterized as a condition where tissue bulges out from a weak spot of the abdominal wall [4], that is corrected surgically. Inguinal hernia repair is a surgery to repair hernia in groin region [5]. The abdominal wall is reinforced and supported with sutures (stitches), and occasionally with mesh. This repair can be performed via open or laparoscopic surgery. Surgery commonly recommended for all inguinal hernias to circumvent complications such as strangulation, where a loop of intestine becomes firmly trapped in a hernia, cutting off blood supply to the affected part. Severity of the hernia is positively associated with the urgency of the surgery [6].

Although baclofen is commonly used as a muscle relaxant and antispastic, particularly for the pain of spinal or cerebral origin, associated hemodynamic complication such as; bradycardia, especially in those with possible or known dysfunction of the hypothalamus should be strictly monitored [7]. Several other risk factors that can lead to complications in hernia repair include; advanced age, laparoscopic procedure and type of anesthesia (regional) [8].

In this case report, our patient reported that he was taking baclofen for his lower back pain. Several studies have reported that oral baclofen is associated with an increase in blood, pulse and mean arterial pressure and heart rate [9]. Nonetheless, Overdose of baclofen can lead to a decrease in cardiac and respiratory function [10] In parallel with few reported studies, an adult man, after his hernia repair, underwent decrease in heart rate and blood pressure, several times. On the other hand, atropine treatment showed successful outcomes in the restoration of cholinergic effects of baclofen. Ferner [11] reported a case of a pediatric patient who presented cardiac and respiratory depression as a result of overdose (420mg) of baclofen. IV atropine was successfully used to restore her condition.

Surgical candidates under baclofen drugs should be vigilantly monitored for respiratory and cardiac depression.

One of the limitations of the case study was that patients did not undergo any electrocardiographic examination for heart condition, owing to no complaints and familial history. However, he could have been presented with asymptomatic heart problems.

Ethical approval

All procedures performed in this study involving human participants were in accordance with the ethical standards of the

institutional and/or national research committee and with the 1964 Helsinki Declaration and its later amendments or comparable ethical standards.

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Author contribution

Dr. Siavash Beiranvand: conceptualized and designed the study, drafted the initial manuscript, and reviewed and revised the manuscript. Designed the data collection instruments, collected data, carried out the initial analyses, and reviewed and revised the manuscript. Coordinated and supervised data collection, and critically reviewed the manuscript for important intellectual content.

Conflict of interest statement

The authors deny any conflict of interest in any terms or by any means during the study.

Guarantor

Siavash Beiranvand.

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1. Name of the registry:
2. Unique identifying number or registration ID: N/A.
3. Hyperlink to your specific registration (must be publicly accessible and will be checked)

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Not commissioned, externally peer-reviewed.

Consent

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Availability of data and materials

All relevant data and materials are provided with in manuscript.

Contributors' statement page

Dr. Siavash Beiranvand: conceptualized and designed the study, drafted the initial manuscript, and reviewed and revised the manuscript. The data collection instruments, collected data, carried out the initial analyses, and reviewed and revised the manuscript. Coordinated and supervised data collection, and critically reviewed the manuscript for important intellectual content. All authors approved the final manuscript as submitted and agree to be accountable for all aspects of the work.

Appendix A. Supplementary data

Supplementary data to this article can be found online at <https://doi.org/10.1016/j.ijso.2020.12.007>.

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