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Perioperative Anaphylaxis After Succinylcholine Use: A Case Report and Management Insights

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Abstract: ***We report a case of perioperative anaphylaxis in a 18-year-old male patient who underwent general anesthesia for facial laceration repair. After intubation with succinylcholine, the patient experienced cardiac arrest, which was promptly managed with CPR and adrenaline. Pulmonary edema was suspected, and inotropic support, diuretics, and corticosteroids were administered. The patient was transferred to the ICU and showed improvement the following day, allowing for extubation and weaning off inotropic support. This case highlights the rapid onset and severity of perioperative anaphylaxis, which can be fatal even in healthy patients. Diagnosis relies on clinical, biochemical, and skin test evidence to identify the culprit agent and prevent future reactions. Succinylcholine is a known allergen, and this case underscores the importance of vigilance and prompt management in perioperative settings.***

Keywords: Perioperative anaphylaxis, succinylcholine allergy, cardiac arrest, anesthesia complications, emergency management

1. Introduction

Anaphylactic reactions during the perioperative period pose a significant concern for anesthesiologists, due to their potential severity and unpredictability.[1] The overall incidence of perioperative anaphylaxis is estimated at 1 in 6,500 administrations of neuromuscular blocking agents (NMBAs).[2] Despite their rarity, these reactions can occur rapidly, often within minutes of drug administration, and may manifest with diverse clinical symptoms, making timely diagnosis challenging and essential.[3] This case report documents a suspected case of life-threatening anaphylaxis induced by succinylcholine, underscoring the need for heightened awareness, prompt recognition and intervention in the management of such critical events.

2. Case Report

Introduction:
A 18-year-old male was referred to our hospital with a lacerated wound to the face and nose following a workplace injury. He was planned for Debridement & Primary suturing under GA.

Pre-Anesthetic Evaluation:
The patient was a well-built and nourished 18-year-old male with no significant medical history. He had a BMI of 27.75. General physical, systemic and airway examination were unremarkable. Pre-operative investigations & imaging were normal and was classified as ASA 1.

Anesthetic Management:
Patient was preoxygenated with 100% O2 for 3 minutes with Bains Circuit, premedicated with IV Glycopyrolate 0.01mg/Kg, IV Midazolam 0.1mg/Kg, IV Dexamethazone 0.1mg/Kg & IV Morphine 0.1mg/Kg. In anticipation of difficult mask ventilation because of injury over nose and face, patient was induced with IV Propofol 1mg/Kg & relaxed with Inj. Succinylcholine 100mg IV. Intubated with a cuffed oral endotracheal tube size 8mm and connected to ventilator on maintenance O2 + N2O + Isoflurane (MAC 0.6). However, shortly after intubation, the patient developed asystole, and cardiopulmonary resuscitation was initiated according to latest ACLS guidelines. Inj. Adrenaline 1 amp (undiluted) IV stat given. ROSC achieved within 2 minutes.

Resuscitation and Post-Resuscitation Care:
The patient was revived, and post-resuscitation care included mechanical ventilation, adrenaline infusion in view of hypotension, and treatment for pulmonary edema. The patient was stabilized and shifted to the ICU.

ICU Course:
The patient was managed with mechanical ventilation, IV diuretics and IV corticosteroids and inotropic support (IV Dobutamine). Arterial blood gas analysis and thoracic ultrasound were performed to monitor the patient's progress.

Weaning and Extubation
The patient was weaned off ventilator support and extubated. Post-extubation arterial blood gas analysis showed improved oxygenation.

Discharge:
The patient was discharged, with recommendations for further cardio-pulmonary evaluation.

3. Discussion

This case report highlights the importance of vigilance and prompt recognition of anaphylaxis during general anesthesia. The patient's rapid development of asystole and pulmonary edema following succinylcholine administration necessitated immediate cardiopulmonary resuscitation and aggressive management. The successful resuscitation and stabilization of the patient underscore the importance of a well-coordinated anesthesia team and adherence to ACLS guidelines.

The patient's post-resuscitation care, including mechanical ventilation, inotropic support, and treatment for pulmonary edema, was crucial in preventing further complications. The case highlights the importance of close monitoring and timely intervention in the management of anaphylaxis during anesthesia. It also serves as a reminder to consider alternative muscle relaxants and to be prepared for unexpected anaphylactic reactions, even in seemingly low-risk patients.

4. Conclusion

Perioperative anaphylaxis is a severe and rapid clinical condition that can be lethal even in previously healthy

patients. The diagnosis of perioperative anaphylaxis might be missed because the clinical presentation of this infrequent pathology can be of very rapid onset with variable clinical signs. Ideally, the combination of clinical, biochemical, and skin test evidence will identify the culprit agent and will allow the informed practitioner to avoid these agents in future clinical procedures.[3]

References

[1] Ben Ali M et al. A Case Report of Life-Threatening Succinylcholine-Induced Anaphylaxis: Diagnostic Difficulty and Management. ARC Journal of Anesthesiology. 2020; 5(2): pp. 20-21. ISSN 2455-9792
[2] Dewachter P, Mouton-Faivre C: What investigation after an anaphylactic reaction during anaesthesia? Curr Opin Anaesthesiol 2008; 21:363–8
[3] Pascale Dewachter, Claudie Mouton-Faivre, Charles W. Emala, Bruno Riou; Anaphylaxis and Anesthesia: Controversies and New Insights. Anesthesiology 2009; 111:1141–1150

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