



Correspondence

Bacitracin irrigation leading to anaphylaxis and cardiovascular collapse in the ambulatory surgery center setting


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Ambulatory anesthesia

Anaphylaxis

Advanced cardiovascular life support

Perioperative anaphylaxis has an estimated prevalence of 1:3500 to 1:20,000 and a mortality rate of up to 9% [1]. Intravenous antibiotics [2] and neuromuscular blocking agents [3] are most commonly the cause of perioperative anaphylaxis. The most common symptoms of anaphylaxis during anesthesia include severe hemodynamic manifestations (81.6%), cutaneous manifestations (71%), and bronchospasm (26.3%) [2]. We describe a case of intraoperative anaphylaxis due to bacitracin irrigation with significant cardiovascular collapse without cutaneous or pulmonary manifestations. The patient provided informed written consent for this letter.

A 28-year-old female with no significant past medical history presented to an ambulatory surgery center for bilateral breast implant exchange. The patient had an uncomplicated breast augmentation 10 years prior. She denied any known drug allergies or previous problems with anesthesia.

General endotracheal anesthesia was induced with midazolam, fentanyl, propofol, and succinylcholine and maintained with propofol and remifentanyl infusion. Preoperative antibiotic prophylaxis with cefazolin 2 g IV was administered and vital signs remained stable following induction and surgical incision. The in-situ breast implants were removed and both pockets were irrigated with bacitracin solution. Within 1 min of irrigation, the patient's heart rate increased from 65 beats-per-minute to 130 beats-per-minute and the non-invasive blood pressure cuff was unable to obtain a reading. Additionally, the end-tidal carbon dioxide decreased from 33 mmHg to 10 mmHg. A blood pressure was unable to be obtained despite boluses of phenylephrine and ephedrine. Anesthetic infusions were stopped and additional help was called for. No signs of urticaria or bronchospasm were present. The patient was noted to be in pulseless electrical activity (PEA) and advanced cardiac life support (ACLS). Four doses of epinephrine 1000 mg IV were administered and return of spontaneous circulation was obtained after approximately 10 min. An arterial line was placed and the patient was transferred to the inpatient hospital for further workup and monitoring.

The patient was extubated 30 min after arrival in the post-anesthesia care unit. Approximately 2 h following cardiac arrest, the patient's tryptase was found to be elevated to 17.4 µg/L (reference range ≤10.9 µg/L). A CT angiogram to evaluate for pulmonary embolus was negative. Echocardiogram and electrocardiogram was unremarkable. The patient remained stable postoperatively with no sequelae of cardiovascular collapse. She followed up with an allergist and was

found to have a markedly positive bacitracin skin test and a normal baseline tryptase (2.3 µg/L). She returned to an inpatient facility four months later for completion of her procedure in order to have additional support staff and resources in case of emergency. The procedure was uncomplicated and utilized ampicillin for antibiotic prophylaxis.

Although bacitracin-induced anaphylaxis is rare, case reports have detailed cardiovascular collapse, urticaria, and bronchospasm associated with the drug [4,5]. The presented case is unique because of its significant cardiac collapse leading to PEA without cutaneous or pulmonary findings; therefore other possible causes of cardiovascular collapse had to be evaluated postoperatively. Rapid identification of PEA and subsequent ACLS were vital in return of spontaneous circulation and prevention of morbidity and mortality.

This case took place in an ambulatory surgery center attached to an inpatient facility. Within the ambulatory setting, great importance should be placed on having qualified personnel with clearly defined roles for emergencies such as this case. Ambulatory surgery centers are unlikely to have consulting resources such as cardiologists or capabilities for advanced monitoring and diagnostics. Policies and procedures for transferring patients to an acute care setting from an ambulatory surgery center should be in place to expedite care in emergency situations in order to improve patient safety in this setting.

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