

CASE REPORT

Seizure in a patient who received propofol and ketamine for procedural sedation; A case report

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Abstract: Procedural sedation and anesthesia (PSA) is a common practice in the emergency department (ED). We report a case of seizure after ketamine and propofol administration for procedural sedation. Seizure is not a common side effect of ketamine nor propofol. A 60 years old man admitted to the emergency department with complaint of right shoulder pain caused by the blunt trauma. Simple X-Ray revealed anterior dislocation. After administration of 30 mg ketamine and propofol (1:1) intravenously, closed shoulder reduction was performed. After 2 minutes, the patient experienced a generalized tonic-clonic seizure with upward gaze and urinary incontinence. The clonic movements resolved after about 1 minute with supportive care and without anti epilepsy drugs, then the patient entered the post-ictal phase. 45 minutes later, the patient was completely awake and after 6 hours observation, he was sent home with discharge instructions. Seizure is not a common complication of any of the administered drugs. Nevertheless, rare possibilities may also occur, and thus emergency clinicians and others who perform procedural sedation, should be ready for any possible complications to treat them appropriately.

Keywords: PSA; Ketamine; Propofol; seizure

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1. Introduction

Procedural sedation and anesthesia (PSA) is the administration of sedatives or dissociative anesthetics to induce a depressed level of consciousness while maintaining cardiorespiratory function so that a medical procedure can be performed with little or no patient reaction or memory. The ideal agent for PSA in the ED provides anxiolysis, analgesia, and amnesia in a rapid and predictable manner, without side effects, and with a quick recovery phase. [1] Ketamine-propofol combination (ketofol) is being used to provide a safe and effective procedural sedation (PS) in emergency department (ED) and may theoretically have beneficial effects since using lower doses of each drug may result in a reduction of the adverse events of both agents while maintaining optimal conditions for performing procedures. [2] We report a case of generalized tonic-clonic seizure secondary to administration

of ketofol for shoulder dislocation.

2. CASE REPORT

A 60 years old man came to the emergency department with complaint of right shoulder pain caused by the blunt trauma. No history of recent head trauma was noted. Simple X-Ray revealed anterior dislocation. Simultaneous bone fracture was not seen. The past medical and drug history, especially opium or illicit drugs was negative.

Under cardiac monitoring, pulse oximetry and supplemental O2 with face mask, 30 mg ketamine and propofol administered (1:1) intravenously, then closed shoulder reduction performed. After 2 minutes, the patient experienced a generalized tonic clonic seizure with upward gaze and urinary incontinence. The clonic movements resolved after about 1 minute with supportive care and without administration of anti-epilepsy drugs, then the patient entered the post-ictal phase. 45 minutes later, the patient was completely awake and alert and after close observation for 6 hours, he was sent home with discharge instructions. Subsequent brain MRI and EEG was negative for epileptic spikes.

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3. DISCUSSION

Procedural sedation with or without analgesia is frequently used in the emergency department (ED) to facilitate painful and unpleasant procedures. PSA is generally achieved by the intravenous (IV) administration of sedatives (propofol and midazolam) or dissociative agents (ketamine), often in combination with short-acting opioids (fentanyl).[3] Before performing PSA, a medical history and anesthesia-directed physical examination should be performed for all patients. Also some arrangements including monitoring the patient and anticipating and managing possible complications are necessary. Desirably, the ideal agent for PSA in the ED should provide anxiolysis, analgesia and amnesia in a rapid, predictable manner, with minimal side effects, and should have a quick recovery phase. Adverse events during procedural sedation occurred in 11% of patients. All events could be managed by the sedating physician. [3] Common side effects of propofol include pain at the injection site, hypotension, hypertension, nausea, cough, tingling sensation, and itching. Common side effects of ketamine include dream-like feeling, blurred vision, double vision, jerky muscle movements, dizziness, drowsiness, nausea and vomiting.

Thus, it is clear that seizure is not a common complication of any of the mentioned drugs. Nevertheless, rare possibilities may also occur. Therefore, emergency clinicians and others who perform procedural sedation, should be ready for any possible complications to treat them appropriately.

4. Declarations

4.1. Acknowledgement

Not applicable.

4.2. Conflict of interest

All authors declare that they have no conflict of interest.

4.3. Funding and supports

None.

4.4. Author contributions

All authors participated in all stages of the data gathering and development of the paper.

4.5. Data Availability Statement

Not applicable.

4.6. Ethics Statement

Written informed consent was obtained from the patient for publication of this case report and any accompanying images. A copy of the written consent is available for review by the Editor-in-Chief of this journal.

4.7. Using artificial intelligence chatbots statement

Not applicable.

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