Ventricular Arrhythmia during Tracheal Intubation and Extubation under General Anesthesia Possibly Induced by Amisulpride: A Case Report

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We are presenting the first documented case of amisulpride related ventricular arrhythmia during tracheal intubation and extubation under general anesthesia in a 48-year-old female with psychiatric history of chronic schizophrenia who was treated with amisulpride. This case suggests the threshold of perioperative arrhythmia is possibly decreased in patients with long-term antipsychotic medication. So, the potential risk of antipsychotics-induced perioperative arrhythmia should be evaluated, as well as heart rhythm monitoring, prophylactic use of antiarrhythmic drugs, and preoperative adjustment of antipsychotics should be considered.

KEY WORDS: Amisulpride; Ventricular arrhythmia; Intubation, intratracheal.

INTRODUCTION

The occurrence of arrhythmia during anesthesia has been associated with increased costs, prolonged hospital stay, and higher mortality. Various factors initiate and sustain arrhythmia, such as hypoxia, electrolyte disturbances, acid-base imbalance, myocardial ischemia, etc. However, little is known about the arrhythmia induced by antipsychotics during anesthesia. Amisulpride, a substituted benzamide derivative, is an atypical antipsychotic agent, effective in treating the positive and negative symptoms of schizophrenia. Compared with the first-generation antipsychotic agents, amisulpride is better tolerated, with relatively few side effects and minimal behavioural toxicity in therapeutic doses with antipsychotic effect, however, amisulpride related arrhythmias, such as QT interval prolongation, torsades de pointes, and bradycardia have been reported previously. Here, we report a case of ventricular arrhythmia during tracheal intubation and extubation under general anesthesia possibly associated with amisulpride.

CASE

A 48-year-old female (158 cm, 50 kg, body mass index 20.0 kg/m²) was scheduled for esophageal foreign body extraction with flexible endoscopy under general anesthesia. The chief complaint was swallowing a date seed by accident for 24 hours. Computed tomography scan showed high density of the upper esophagus. The patient had been diagnosed with chronic schizophrenia, and amisulpride 200 mg was taken orally twice a day for three years.

On arrival in the operation room, electrocardiogram (ECG) showed sinus rhythm of 86 bpm, blood pressure is 86/50 mmHg, SPO₂ is 96%, and body temperature is 36.1°C. Anesthesia was induced with sufentanil 0.02 µg/kg, etomidate 0.3 mg/kg. Tracheal intubation was facilitated with cisatracurium 0.15 mg/kg and successfully performed using a video larygoscope (Verathon Inc., Bothell, WA, USA). Immediately after tracheal intubation, ventricular premature beats of bigeminy appeared in the ECG and lasted one minute. At that time, heart rate is 91 to 98 bpm, blood pressure is 100/73 mmHg. Lidocaine
undergoing cardiac surgery. It is well known that, anti-sustained ventricular arrhythmia is rare, even in patients and extubation may lead to sympathoadrenal excitement, during general anesthesia. Though tracheal intubation most commonly used method to ensure adequate airway psychotics during anesthesia. Tracheal intubation is the of ventricular arrhythmia possibly induced by anti-

risk of sudden cardiac death. In addition, amisulpride selectively acts on D2/D3 dopamine receptors, and D2-receptor ligand has been shown to potentiate N-methyl-D-aspartate-induced intracellular increases in calcium concentration. Furthermore, intracellular calcium overload trigger arrhythmia.

Though the ventricular arrhythmia in this case didn’t cause serious adverse consequences and was reversed by lidocaine, the risk factors and undesirable outcomes of antipsychotics-induced perioperative arrhythmia remain unknown. So we strongly suggest that ECG monitoring and suitable depth of anesthesia should be performed, antiarrhythmic drug (e.g., lidocaine) should be prophylactically used or prepared, other risk factors associated with arrhythmias should be avoided. Meanwhile, preoperative adjustment of antipsychotics should be considered for patients with long-term antipsychotic medication.

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