Emergence Agitation or Excited Delirium?

Derlenme Ajitasyonu ya da Deliryum mu?

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ABSTRACT

During emergence from general anesthesia some patients are inconsolable, restless, and/or agitated. This complication may arise by variety of physiological and pharmacological factors during awakening from anesthesia. Excited delirium is a state of extreme mental and physiological excitement characterized by extreme agitation. We report a 15-year-old male patient with cannabis abuse, who was in emergence agitation or excited delirium after gastro-endoscopic procedure with propofol and ketamine sedation. In this case midazolam was not adequate and haloperidol was administered in order to diminish severe agitation. Emergence agitation may be related with cannabis abuse, and haloperidol may be the correct choice for treatment.

Key Words: Emergence agitation, delirium, haloperidol, cannabis

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ÖZET

Genel anesteziden çıkış sırasında bazı hastalar, iletişim kurulamaz, huzursuz ve ajite olabilirler. Bu komplikasyon, anesteziden uyanma sırasında çeşitli fizyolojik ve farmakolojik faktörlerden kaynaklanabilir. Derlenme döneminde gelişen deliryum şiddetli ajitasyonla karakterize aşırı bir zihinsel ve fizyolojik uyarılma halidir. Bu yazıda; gastro-endoskopik işlem için propofol ve ketaminsedasyonu sonrası ortaya çıkan derlenme ajitasyonu ya da şiddetli deliryum gelişen esrar bağımlısı 15 yaşındaki erkek hastayı sunuyoruz. Sunulan olguda midazolam yeterli olmadı ve şiddetli ajitasyonu azaltmak için haloperidol uygulandı. Bu olguda ortaya çıkan ajitasyon, esrar bağımlılığı ile ilişkili olabilir ve haloperidol, tedavi için doğru seçim olabilir.

Anahtar Sözcükler: Derlenme ajitasyonu, deliryum, haloperidol, eroin

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INTRODUCTION

Emergence agitation (EA) is a phenomenon in which patients are inconsolable, restless, and/or agitated during recovery from general anesthesia(1). EA is a state that may arise by variety of physiological and pharmacological factors during awakening from anesthesia. However excited delirium (ED) is a state of extreme mental and physiological excitement characterized by extreme agitation(2,3). We report a 15-year-old boy in EA or ED after gastro-endoscopic procedure with propofol and low dose ketamine sedation.

CASE REPORT

A 15-year-old, 77 kg male patient with ASA physical status I and with negative medical, alcohol usage and smoking history administered for diagnostic gastro-endoscopy under deep sedation. Patient was premedicated with 1 mg intravenous (IV) midazolam, sedation was induced with IV 1,5 $mg.kg^{-1}$ propofol and 5 mg ketamine and maintained with intermittent doses of propofol. The hemodynamic parameters were stable throughout the 20 minutes procedure. Patient was transferred to the post-anesthetic recovery room while sleeping, but suddenly woke up. He fell down from the stretcher and began to thump and kick the walls and pulled out his IV catheter.

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He was using inappropriate language, was uncooperative and uncontrollable. A total of 3 mg midazolam was given intravenously but the sedation lasted only 1-2 minutes and agitation occurred again. He repeatedly asked for his father and loudly declared that he did not want to be approached. His father also could not calm him. Security staff helped for immobilization and avoided any harm as in a psychiatric emergency state. When 5 mg haloperidol was applied intramuscularly (IM), a decline of the agitation and aggression was obtained within 15 minutes, and it was followed by 1hour of sleep. He was calm and oriented when he reawakened. After the patient was observed closely for 4 hours, he informed us that he didn't remember the post-sedation period. He was re-examined and declared that he had cannabis abuse for several months and apologized for his behavior.

DISCUSSION

Incidence of EA is related to many factors like age, anesthetic or surgical technique and is reported in a 10%-80%range. Arterial hypoxemia, hypercapnia, hypothermia hypoglycemia, electrolyte imbalance, sepsis, embolism, sensory deprivation, and sensory overload are potential physiological causes of delirium or agitation after anesthesia. EA has also been described with inhalation anesthetics such as atropine, scopolamine, metoclopromide, droperidol(4).

Emergence agitation usually occurs within the first 30 minutes of anesthesia recovery, is self-limiting (5-15 minutes) and often resolves spontaneously. However, agitation and regressive behavior lasting up to 2 days were also described. On occasion, sedative or analgesic drugs are used in post-anesthesia care units to treat EA. Thus, recovery time may be prolonged and adverse events may occur in these patients. Agitated recovery from anesthesia may cause injury to the patient; furthermore extra nursing care, supplemental sedative or neuroleptic medications are often necessary(2-5). In our patient EA occurred and recovery time was prolonged. Security staff assistance was needed in collaboration with health workers.

Ketamine administration may result in extreme restlessness and agitation. Combination of benzodiazepines with ketamine lessens these unwanted effects. The doses of ketamine, which applied in this case, were as low as 5 mg and it was combined with midazolam. EA after propofol anesthesia has been less completely described. An effective and well-tolerated anesthetic agent that allows smooth induction and rapid recovery makes it ideal for procedural sedation of children. However, approximately 3.7% of children experienced EA after propofol total intravenous anesthesia (TIVA)(2,4). In our case we used 1 mg midazolam and 160 mg propofol that continued as bolus doses of 0.3 $mg.kg^{-1}$ to total dose of 300 mg for sedation. We are in the opinion that the anesthetic regimen we used may nothave caused this severe agitation.

Treatment of ED generally involves treatment of the signs and symptoms. The primary goal is to rule out possible physiological or pharmacological causes. Supplemental oxygen, fluid and electrolyte replacement, and adequate analgesia may be appropriate once the causes have been determined. Medications used for ED include benzodiazepines for calming if the delirium is severe and antipsychotics, such as haloperidol(2-5). In this case we succeeded to control the agitation with haloperidol.

Acute and chronic cannabis use has many effects, some of them major, even fatal. According to 1999 American National report on substance abuse, cannabis is the most commonly used illicit drug. The rate is estimated to be as high as 39.2% in the 12-17 years age group. Many of the patients requiring anesthesia are occasional or regular users. It should be noted, however, that the interaction between anesthesia and the use of cannabis is still poorly documented. Cannabis can potentiate the hypnotic and sedative effects of substances that depress the central nervous system such as alcohol, barbiturates, opiates, benzodiazepines, and phenothiazines(4).

Emergence agitation may be seen in the post sedation period, and it may be related to cannabis abuse, and use of haloperidol may be useful for treatment.

Conflict of interest

No conflict of interest was declared by the authors.

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