CASO CLÍNICO/CASE REPORT

Anesthetic Management of a Patient with Sleep Paralysis

Controlo Anestésico de um Doente com Paralisia do Sono

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Abstract

Sleep paralysis is surprising common, with 7.6% of general population experience at least once episode during their life. There are inconsistent results in the literature about the nature, physiopathology and outcome of this syndrome, which it is usually associated with narcolepsy. Sleep paralysis occurs when a person wakes up during rapid eye movement (REM) stage of sleep. Difficulty to control breathing, hallucinations and inability to execute voluntary activity can be very disruptive. This is usually accompanied by vivid and waking dreams, which makes of this syndrome a very unpleasant syndrome.

Data available for patients undergoing surgical procedures are also scarce. The response to anesthetic medications and possible interactions in sleep paralysis patients is unclear in the perioperative period. This case report pretends to detail the anesthetic management of a patient with the diagnosis of sleep paralysis.

Resumo

A paralisia do sono é uma doença comum, dado que 7,6% da população experiencia pelo menos um episódio na sua vida. Esta doença está usualmente associada a narcolepsia, mas há escassas publicações na literatura sobre a sua origem, fisiopatologia e prognóstico. A paralisia do sono caracteriza-se por despertares durante o estado de sono REM – *rapid eye movement*. Durante os episódios, o doente manifesta dificuldades respiratórias, alucinações e paralisia motora, acompanhados por sonhos vividos, o que torna esta síndrome numa experiência desagradável.

Na literatura há poucos casos clínicos publicados sobre doentes com paralisia do sono submetidos a procedimentos cirúrgicos. A resposta destes doentes aos fármacos anestésicos e as possíveis interações medicamentosas no período peri operatório são desconhecidas. O presente caso clínico pretende detalhar o manuseio anestésico de uma doente com paralisia do sono.

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Introduction

Sleep paralysis (SP) occurs in 7.6% of general population, being more frequent in teenagers and young adults.[1] Commonly, it is associated with psychiatric or other sleep disorders, such narcolepsy syndrome. SP occurs when a person wakes up during rapid eye movement (REM) stage of sleep. Difficulty to control breathing, hallucinations and inability to execute voluntary activity can be very disruptive. There are several risk factors associated to SP: hypertension, narcolepsy, obstructive sleep apnea (OSA), alcohol disease and post-traumatic stress disorder.[1]

This syndrome is usually associated with narcolepsy. When it occurs as isolated episodes it is called isolated sleep paralysis. Diagnostic of recurrent isolated sleep paralysis (RISP) require at least two significant fear episodes in the past 6 months.

It is theorized that SP may represent a dysfunction in the reticular activating system. Others have considered it is a dissociation between the physical and mental components of sleep, where the physical aspects of sleep can exist briefly without the presence of mental component. This syndrome is not associated with intracranial lesions, epilepsy, or drug abuse.[2] Diagnosis is based on clinical interviews or questionnaires.[1]

Good sleeping habits often improve clinical outcome, but sometimes pharmacologic treatment is necessary. Treatment options are based upon studies of narcolepsy, small case studies and logical deductions. The first question is how relevant are these episodes disturbing the patients that justify treatment? Many pharmacological agents have been used, often in the context of narcolepsy. The most used agents are tricycling antidepressants and selective serotonin reuptake inhibitors due to their ability to suppression of REM sleep.

Clinical implications of SP in the anesthetic management are not clear, with only one case[2] reported in the literature. We present a case of a patient with SP submitted to abdominal hysterectomy under general anesthesia.

Case Report

We present a case of a 39-year-old woman with SP and mild OSA (Apnoea Hipoapnoea Index-AHI index 5) scheduled for abdominal hysterectomy. SP was diagnosed 5 years ago due to recurrent morning episodes of "awake dreams" confirmed by her husband. She was submitted to neurological evaluation and medicated with oxcarbazepine, due to initial differential diagnosis with frontal epilepsy. Although improvement in total sleep time with that drug,[3] patient started to complain about drowsiness. So, due to the absence of new episodes, treatment was suspended a few months ago without clinical impact.

Standard ASA monitoring and preoxygenation until EtO2 > 90% was started in the operating room. Induction was performed with fentanyl (3 mcg/kg) and propofol (2 mg/kg). After loss of consciousness, neuromuscular blocking monitoring was initiated with train of 4 (TOF) and rocuronium (0.6 mg/kg) was administered. After complete neuromuscular block, the patient was intubated. Mechanical ventilation was initiated in a volume controlled mode, with a tidal volume of 500 mL, respiratory rate of 12 ventilations/min and positive end expiratory pressure of 7 cmH2O. Anesthesia was maintained with O2 and desflurane. Analgesia was performed with paracetamol (1000 mg), ketorolac (30 mg), morphine (4 mg) and ropivacaine incisional infiltration. Prophylaxis of nausea and vomiting was made with ondansetron. At the end of the procedure, there was T0 in TOF stimulation and sugammadex (4 mg/kg) was administered to achieve reversal of neuromuscular block. After 60 seconds, patient recovered from deep neuromuscular block and was able to open her eyes and lift her head. She was successfully extubated in the operating room and transferred to the post anesthesia care unit (PACU). There were no registered complications and intensive care unit (ICU) admission was not necessary.

Discussion

The anesthetic management of SP patients can be challenging, since it can be a cause for delayed recovery from anesthesia. Most of the cases are attributed to residual effects of anesthetic and analgesic medications. However, this phenomenon can be secondary to other unusually causes like serotonin syndrome, postoperative delirium, central anticholinergic syndrome, psychiatric disorders and surgical complications.[4]

Regional or combined anesthesia seem to have clinical advantages, since these techniques are generally associated with faster awake, better pain control and less need for systemic opioids. In this case, we decided to perform a general anesthesia because of the site and

the extent of surgical incision. Multimodal systemic analgesia was sufficient to promote an adequate pain relief, although an epidural or TAP block could have been considered.

Quantitative measurement of the anesthesia depth and the neuromuscular function help clinicians to guide drug administration and recovery. We think that these clinical tools associated with the use of sugammadex were important factors to avoid delayed emergence from anesthesia and residual neuromuscular block.

ICU admission should be always anticipated in these patients, especially when they have concurrent medical factors or are submitted to major surgeries. In our case, the patient was successfully extubated in the operating room and had no complications in the PACU.

This patient had another concomitant sleep disorder – obstructive sleep apnea. Patients with this syndrome are susceptible to the central respiratory depressant effects of benzodiazepines, neuroleptics, and opioids[5] and post-operative respiratory complications. However, this patient had mild disease without the indication for treatment with CPAP. We considered that the measurements we took for the anesthetic management of sleep paralysis would be the same as for OSA.

Conclusion

SP is a surprisingly common medical condition and can be an important cause of delayed recovery from anesthesia. There is not clinical evidence of the best anesthesia in these patients. However, depth of anesthesia monitoring, opioid sparing anesthesia and analgesia seem to be the best option.[6] We think our case report adds valuable information, since there is only one case described in the literature. However, further case reports in describing anesthesia management in SP patients are necessary to improve clinical outcome. ■

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