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Spinal myoclonus following spinal anesthesia in a cystoscopy case

Sistoskopi olgusunda uygulanan spinal anestezi sonrası gelişen spinal miyoklonus

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Abstract

Spinal myoclonus developed after regional anesthesia is quite rare. They are sudden onset, involuntary, short focal or segmental contractions in a single muscle or a muscle group. Spinal myoclonus is a neuromuscular dysfunction developed after spinal cord pathologies (tumor, infection,etc.) Almost all reported cases were related to intrathecal bupivacaine or an epidural catheter. We aimed to present the spinal myoclonus we observed in our case caused by the administration of bupivacaine for spinal anesthesia.

Keywords: Spinal myoclonus, regional anesthesia, local anesthetic.

Öz

Rejiyonal anestezi sonrası gelişen spinal myoklonus oldukça nadir görülmektedir. Tek bir kas veya kas gruplarında ani, istemsiz, kısa süreli fokal veya segmental görülen kasılmalardır. Spinal kord patolojileri (tümör, enfeksiyon, vb.) sonucu gelişen nöromuskuler disfonksiyondur. Ayrıca intratekal bupivakain veya epidural kateter uygulama sonrası benzer olgular bildirilmiştir. Spinal anestezide uyguladığımız bupivakaine bağlı gelişen spinal myoklonus gözlediğimiz olgumuzu sunmayı amaçladık.

Anahtar Sözcükler*: Spinal miyoklonus, rejiyonal anestezi, lokal anestezik.*

Introduction

Spinal myoclonus is a rare complication of spinal or epidural anesthesia. It is frequently encountered with the trauma, tumor, infection, or vasculopathy of spinal cord (1). In addition, intrathecal administered local anesthetic agents, opioids, radiocontrast agents and catheters are rare causes of spinal myoclonus (2). We aimed to evaluate the spinal myoclonus following the administration of hyperbaric bupivacaine to the subarachnoid space in a patient undergoing cystoscopy for hematuria.

Case Report

Our patient was 73-year-old. The preoperative anesthesia examination was normal. He was monitored. In the sitting position, 12.5 mg hyperbaric bupivacaine was administered to the L4-L5 intrathecal space with a 25G Quincke tipped spinal needle when the CSF flow was observed. When the sensory block was at T8 level, the lithotomy position was given to the patient and the operation was started. There weren't any problems during the operation for about 40 minutes. After surgery, the patient was transferred to a recovery room. 120 minutes after the application of spinal anesthesia, myoclonic contractions were observed in the pelvis and both lower extremities that recurred every 3-5 minute, persisting for 30-40 seconds. The patient's mental status was intact and muscle strength was normal. The patient was transferred to the intensive care unit from the recovery room. In the intensive care unit, 2 mg iv midazolam was applied. 15 minutes later 2 mg iv midazolam was administered again. Myoclonic contractions were reduced in strength and decreased in frequency. The myoclonic movement disappeared completely 90 minutes after its onset. In the intensive care unit, Na, K, Ca, Mg, B12 levels were found within the normal range. The MR images of the patient were consulted to the neurologist and evaluated as normal. He was observed in the intensive care unit for one day. Myoclonic contractions were not observed again. The case was discharged.

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Written informed consent was obtained from the patient for publishing the individual medical records.

Discussion

Spinal myoclonus observed following regional anesthesia is considered a rare complication. Pathophysiology is not clear, the inhibition loss in suprasegmental descending pathways and local posterior horn interneurons, hyperactivity of anterior horn neurons, and abnormal stimulation of axons in this region may be the cause of myoclonus (3-5). Spinal or epidural anesthesia may lead to myoclonus due to neural injuries (6,7). For myoclonus formation following local anesthetic, it has been reported that inhibitor effects are caused by increased irritability in alpha motor neurons or by direct neurotoxic properties (8). Electrolyte imbalance and effect of B12 deficiency are not clear. In our case, myoclonus was terminated after cessation of the drug. In many cases different treatment options were considered. Drugs such as clonazepam, sodium valproate, piracetam, fluoxetine and primidon have been used (9). In many cases, midazolam and clonazepam were the preferred drugs (2). We administered midazolam and we observed that it was effective.

In conclusion, it should be kept in mind that spinal myoclonus, which is a rare complication of regional anesthesia, can be seen after spinal anesthesia. An anesthesiology and reanimation specialist should be careful for unpredictable postoperative complications

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