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CASE REPORT

Persistent hiccups as a rare complication after transforaminal epidural steroid injection: A Case Report

Transforaminal epidural steroid enjeksiyonu sonrası nadir bir komplikasyon olarak inatçı hıçkırık: Bir olgu sunumu

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Summary

A male patient presented to the clinic with persistent hiccups and the complaint of subacute low back pain. Subsequently, he was administered a transforaminal epidural betamethasone injection (TFESI) plus lidocaine and developed persistent hiccups thereafter, which lasted for 6 days and subsided spontaneously. He presented with similar complaints again 5 months later and was administered TFESI, this time along with betamethasone and saline. Yet, he once again developed persistent hiccups, which this time lasted for 7 days and subsided spontaneously. This case report, featuring a patient who was administered TFESI due to subacute low back pain and subsequently developed persistent hiccups as a rare complication, aims to contribute to the literature in the relevant area of specialization.

Keywords: Betamethasone; complication; epidural injection; persistent hiccups.

Özet

Bu olgu sunumunda, inatçı hıçkırık şikayeti olan hasta, subakut bel ağrısı şikayeti ile bu çalışmanın yapıldığı kliniğe başvurmuştur. Hastaya transforaminal epidural betametazon artı lidokain enjeksiyonu uygulanmış ve ardından 6 gün süren ve kendiliğinden geçen inatçı hıçkırıklar gelişmiştir. Beş ay sonra benzer şikayetlerle tekrar başvuran hastaya bu kez betametazon ve salin bileşeni ile birlikte tekrar transforaminal epidural steroid enjeksiyonu (TFESI) uygulanmıştır. Enjeksiyon sonrası, 7 gün süren ve kendiliğinden geçen inatçı hıçkırıklar gelişmiştir. Buna göre, subakut bel ağrısı nedeniyle transforaminal epidural betametazon enjeksiyonu uygulanan ve sonrasında nadir bir komplikasyon olarak inatçı hıçkırık gelişen bu olgu sunumu ile literatüre katkıda bulunmak amaçlanmıştır.

Anahtar sözcükler: Betametazon; epidural enjeksiyon; hıçkırık; kalıcı; komplikasyon.

Introduction

Hiccups are involuntary, intermittent, and spasmodic contractions of the diaphragm and intercostal muscles. In general, hiccups subside within 48 hours. However, hiccups may occasionally last more than 48 hours, up to 1 month, and in that case, are called "persistent" hiccups.[1] Persistent hiccups may be an indication of a serious underlying disease, including central nervous system diseases, gastrointestinal diseases, and thoracic lymphadenopathies. Vagus and diaphragmatic nerve irritation have been reported to be among the common causes of resistant hiccups.[2]

In the case presented herein, the patient developed persistent hiccups following the administration of a transforaminal epidural betamethasone injection (TFESI) due to subacute low back pain. Thus, this case report, which features a case who developed persistent hiccups as a rare complication of the TFESI injection, aims to contribute to the relevant literature.

Case Report

A 50-year-old male patient presented to the algology clinic with the complaint of low back pain radiating to the left leg, persisting for 2 months. Magnetic

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resonance imaging (MRI) revealed a protruding disc between the L5 and S1 vertebrae. TFESI was planned for the patient, as his complaints did not regress with medical treatment. Vascular access was established, and ECG (electrocardiogram) and SpO_2 (oxygen saturation) monitoring were performed. The patient was positioned prone on the operating table. Guided by fluoroscopy, a 16-gauge transforaminal blunt epidural needle was inserted into the L5-S1 transforaminal epidural area. A 5 cc mixture of local anesthetic and steroid (1 ml betamethasone and 4 ml 2% lidocaine) was administered to the patient. Two hours after the completion of the procedure, the patient's Visual Analog Scale (VAS) pain score decreased from 8 to 0, and he was discharged without any complications.

However, the patient returned to the outpatient clinic with the complaint of hiccups that developed 10 hours after the completion of the procedure and persisted for 3 days. He was subsequently referred to the neurology and chest diseases departments, where physical examinations, as well as thorax and cranial MRIs, were performed. The results showed nothing unusual or any pathology that could explain the hiccups. His hiccups lasted for 6 days and subsided spontaneously. Five months later, he again presented with a similar complaint of hiccups. He was then scheduled for a repeat L5 epidural steroid injection. The L5-S1 transforaminal epidural space was accessed under fluoroscopy. Contrary to the first procedure, local anesthetic was removed, and thus a smaller volume of the mixture, that is, 1 ml betamethasone plus 2 ml saline, was administered to the patient. However, 15 hours after the completion of the procedure, the patient once again developed persistent hiccups, which lasted for 7 days and subsided spontaneously.

Discussion

Many factors may cause persistent pathological hiccups, including a wide range of drugs, such as anesthetic agents, chemotherapeutics, steroids, benzodiazepines, antibiotics, anti-parkinsonian drugs, and psychiatric medications.[3] Hiccups, albeit very rarely, may also develop following treatment with TFESI.[4] Steroids are known to have an effect on the brain stem and neurotransmitters. It has been suggested that corticosteroids may cause hiccups by lowering the synaptic transmission threshold in the brain and binding to receptors in the efferent branch of the hiccup reflex arc.[5] It is also possible that hiccups develop following epidural injection due to the volume effect. That is to say, the volume of the solution injected into the epidural space may alter the volume and flow of the cerebrospinal fluid (CSF) and the pressure balance thereof, leading to hiccups in response to these acute changes in the CSF balance. The dural sac may become compressed as a result of these injections.[6]

In a case report by Beyaz,[7] it was reported that the patient developed persistent hiccups following an epidural steroid injection consisting of triamcinolone and bupivacaine, while in a case report by McAllister R.K., it was reported that the patient developed hiccups following the administration of epidural local anesthetic and steroids.[1] In the case presented herein, the patient was administered TFESI using an injection mixture of steroid (betamethasone) and local anesthetic (lidocaine) during his first presentation with persistent hiccups. During his second presentation with persistent hiccups, TFESI was administered using a smaller volume of physiological saline solution (2 ml) without the local anesthetic to rule out any effect of the anesthetic on the development of hiccups. However, persistent hiccups developed again after the second administration of TFESI. This result was interpreted as an indication that betamethasone may play a role in the development of hiccups.

In a study by Anijar et al.,[8] a total of 3 ml of solution, consisting of 2 ml of 4 mg/ml dexamethasone and 1 ml of physiological saline solution, was administered to a patient with chronic cervical pain, and the patient developed persistent hiccups after the procedure, which lasted for 8 days and subsided only after the administration of baclofen treatment. Additionally, in a case report by Slipman et al.,[9] a thoracic epidural steroid mixture consisting of betamethasone and 1% lidocaine was injected into a patient on two different occasions, and the patient developed persistent hiccups 15 and 18 hours after the first and second injections, respectively. Slipman et al.[9] attributed the hiccups to the steroid agent in the injection mixture.

Epidural analgesia is frequently used in algological applications, and although rare, persistent hiccups may develop in relation to steroids. The actual in-

cidence of hiccups after epidural injection (with or without steroids) is yet to be clarified. Therefore, patients should be informed beforehand about the possibility of developing persistent hiccups after the procedure. The authors of this study believe that the number of epidural steroid injection-related persistent hiccups reported in the literature would be higher if patients were informed in advance about the risk of persistent hiccups.

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