

# Rare complication: Persistent hiccups

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## Abstract

Cervical epidural steroid injections have been commonly used in the treatment of cervical radicular pain. When appropriate radiographic, pharmacologic techniques are used these procedures are safe. The literature consists of only few cases consisting of hiccups after epidural steroid injections. Here we present a rare case of persistent hiccups after a cervical epidural steroid injection of a 70 years old male patient with chronic pain due to disc bulges in C5- C7.

## Introduction

Hiccups are common conditions due to the unknown causes and usually need no treatment. Hiccups caused by anesthesia are usually of the chronic type and don't become persistent. Anesthesia, along with central nervous system and metabolic problems can cause long-term hiccups. Hiccups can be short-term or can last for hours. They go away on their own or via one of the home remedies people like to try, like holding your breath. However, hiccups that last more than 48 hours are called persistent hiccups, and those that last longer than a month are said to be intractable [1,2].

Corticosteroids are the drug groups referenced most frequently in the literature as being associated with hiccups. It has been proposed that corticosteroids lower the threshold for synaptic transmission in the midbrain and directly stimulate the hiccup reflex arc [2].

## Case Presentation

A 70 year old female patient presented to the anesthesia department for treatment of chronic cervical pain continuing five years. She had no relief with analgesics including NSAID, tramadol or any responses to physiotherapy. Surgery was found to have high risks due to the comorbid illnesses. Her medical history consisted of COPD for five years and hypertension for ten years. She was not allergic to any drugs on physical examination she was found to have neck pain and right upper sided numbness. Her range of motion decreased while extension. Reflexes were normal. A cervical steroid injection was decided and performed at C7-T1 level.

After getting informed consent of the patient, she was taken in prone with the neck in the neutral position. All vital signs, pulse oximetry, heart rate respiratory rate and temperature were within normal limits. The right C7-T1 epidural space was identified using fluoroscopy. A 22 gauge Tuohy was advanced to the epidural space using loss of resistance technique. After 2 hours the patient started to complain of hiccups, which was not associated with other symptoms. The patient was treated with 10 mg haloperidol and 10 mg metoclopramide every 8 hours. There was no improvement in clinical condition. Three days later the hiccups decreased and resolved completely.

## Discussion

Complications from epidural injections can present in different situations. In our patient the epidural block was performed in the

cervical region at the level of C7 T1 and the patient developed hiccups 2 hours after the block.

Local anesthetics used in epidural injections have never been proven to be the exact cause of hiccups. Beyaz and his friends reported persistent hiccups after a single shot posterior lumbar steroid injection. Solution consisting of 80 mg triamcinolone acetate and 20 mg bupivacaine was slowly administered [3]. The patient developed hiccups 15 hours later. These hiccups lasted 3 days and subsided spontaneously.

Slipman et al. reported hiccups after thoracic epidural steroid injection using betamethasone and 1% lidocaine. They attributed the cause of hiccups to the steroid injection [4].

Mc Allister used a mixture of 0.08% bupivacaine and 80 mg triamcinolone in the lumbar region. Hiccups started 1 hour later and persisted for 5-7 days. Kaydu and friends administered 20 ml of drug mixture of celestone 6 mgr (1cc) and bupivacaine 15 mgr (3cc) and 16 ml saline solution carefully for back pain in the lumbar epidural region. At 20<sup>th</sup> h, after the injection hiccups were started and persisted for 3 days [5,6].

The reason of hiccups after epidural steroid injection has not yet been explained. The volume effect of solution given into the epidural space may change the balance of the cerebrospinal fluid volume. Mechanism and incidence of hiccups due to steroids are not known, but steroids effect the neurotransmitters of the brainstem and have neuroexcitatory properties. Bupivacaine alone or in combination with steroids can cause hiccups. Anesthesiologists should be aware of complications for cervical epidural injections as epidural steroid injections are increasing currently. Hiccups should always be on consider.

## Conclusion

We must inform the patients who will have an epidural injection about the side effects. It is a rare but benign complication.

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