Hiccups and Hoarseness after Interventional Cervical Epidural Steroid Injection

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Introduction: Interventional pain procedures used to treat acute and chronic pain are minimally invasive and relatively safe, with minimal complications1. However, we must still be able to recognize adverse reactions, even those which may seem inadvertent and unrelated to the procedure, such as hiccups.

Case Description: Our patient is a 63-year-old male being followed at our pain clinic for the past year with cervical pain and radicular symptoms in his left arm. He underwent a C6-C7 spinal fusion in 2007 after a motor vehicle accident, but continues to have intermittent, position-dependent symptoms. The pain begins in the central aspect of the posterior neck, and radiates bilaterally to his shoulders, down the left arm and into the left 3rd and 4th digits. Cervical epidural steroid injections (CESIs) were initiated in 2010, and he has received a total 8 CESIs between two pain clinics. Significant pain relief was achieved after each of his CESIs (90% relief for approximately 8 weeks), along with successfully weaning off most pain medications. The only remaining pain medication he is taking is gabapentin. No complications or adverse events were ever reported until two days following his most recent CESI where the patient developed severe hiccups and hoarseness. During this most recent therapy, he received a total of 3 cc of 0.5% lidocaine with 12 mg of betamethasone in his CESI with adequate contrast spread seen under fluoroscopy. The hiccups were described as constant and painful, occasionally waking him up from sleep. No associated symptoms were reported however pain relief from this CESI was reduced in duration compared to prior CESIs. Non-pharmacological therapies such as breath holding and drinking water did not provide relief. The hiccups gradually began to subside without intervention, lasting a total of 10 days. On most recent follow up, he reported no residual hiccups or voice hoarseness, however his neck pain had unfortunately returned.

Discussion:

CESIs have shown to be effective in managing chronic cervical and upper extremity pain2. While many case reports demonstrating hiccups after thoracic and lumbar epidurals have been described, only a few mention hiccups after a cervical epidural, let alone hoarseness3-4. These cases mainly involved CESIs lacking local anesthetics. Interestingly enough, epidural injections containing local anesthetics have been used as a treatment for intractable hiccups5. A hiccups is an involuntary action involving a reflex arc. The hiccups reflex consists of an afferent and efferent limb. The afferent limb includes the phrenic nerve, vagal nerve, and the sympathetic chain from T6-T12, while the primary efferent limb consists of the phrenic nerve6. Stimulation by the injectate between the C3 and C5 cervical segments may have been the cause of our patient’s symptoms, as this area is the proposed linking location between the afferent and efferent limbs of the hiccups reflex6. While
usually benign, it is important to recognize and caution our patients regarding this adverse reaction when performing interventional epidural procedures.

References


