



ELSEVIER

The Spine Journal 5 (2005) 558–563

THE
SPINE
JOURNAL

Case Study

Quadripareisis following cervical epidural steroid injections: case report and review of the literature

Bikash Bose, MD, FACS, FICS, FAHA*

*Department of Neurosurgery, Christiana Care Health System, C79 Omega Drive, Newark, DE 19713, USA;
and Department of Neurosurgery, Jefferson Medical College, 909 Walnut St., Philadelphia, PA 19107, USA*

Received 24 June 2004; accepted 31 March 2005

Abstract

BACKGROUND CONTEXT: Cervical epidural steroid injections are frequently used in the conservative management of neck pain, cervical radiculitis, and cervical radiculopathy. Between 64–76% of patients who receive injections report subjective pain improvement. Injections are usually well-tolerated with only mild, transient side effects, although a few case reports of patients with adverse effects do appear in the literature. Some clinicians have expressed concerns about epidural injections above the C7-T1 level, and in the use of methylprednisolone epidurally; as yet, neither is a consensus viewpoint.

PURPOSE: This case report describes severe adverse effects (quadriplegia and respiratory arrest) associated with an epidural injection into the C6–C7 space. Although the patient's symptoms improved somewhat with supportive care, quadripareisis appears irreversible. No reports of quadripareisis after cervical epidural injection were found in the literature, although other adverse effects have been reported.

STUDY DESIGN/SETTING: The patient was injected by a fellowship-trained pain management specialist in an outpatient surgicenter using C-arm fluoroscopic guidance. Immediately he experienced respiratory arrest with quadriplegia. He was intubated and transferred to the hospital, then transferred again to Christiana Health Care Services.

METHODS: The patient was hospitalized, treated with steroid protocol within 8 hours, and followed clinically for 6 months.

RESULTS: Magnetic resonance imaging within 6 hours of the injury and 6 months later showed no significant findings aside from lordosis (40° angle) of the cervical spine at the C6–C7 level.

CONCLUSION: Although evidence is not conclusive, this patient may have suffered a vascular event from a cervical epidural injection. © 2005 Elsevier Inc. All rights reserved.

Keywords:

Quadripareisis; Epidural steroid injection; Adverse effect

Introduction

Cervical epidural steroid injections are frequently used in the conservative management of neck pain, cervical radiculitis, and cervical radiculopathy [1–3]. Between 64–76% of patients report subjective pain improvement [3,4]. Although these injections are usually well tolerated, a variety of side effects have been reported. Mild side effects include facial flushing and generalized erythema [5,6], dyspnea, nausea,

vomiting, dizziness, hypotension, and transient increase in neck stiffness [1,2,6,7].

Some patients have had more severe symptoms, such as vasovagal syncope requiring intravenous fluids and epinephrine to treat the symptomatic hypotension and vomiting [8]. A recent report documents progressive respiratory depression and unconsciousness resulting from inadvertent subdural spread of a cervical steroid injection with a local anesthetic [9].

Neuropathic symptoms have also been reported with cervical epidural blocks. In a retrospective study by Catchlove and Braha, epidural catheter insertion produced transient paresthesia in approximately one-third of the 141 blocks [10]. Transient neuropathic pain has been reported with cervical epidural steroid injections [11], as has development of

FDA device/drug status: not applicable.

Nothing of value received from a commercial entity related to this manuscript.

* Corresponding author. C-79 Omega Drive, Omega Professional Center, Newark, DE 19713. Tel.: (302) 738-9145; fax: (302) 738-9148.

E-mail address: ranal@msn.com (B. Bose)

complex regional pain syndrome [12], transient (<24 hour) upper extremity weakness [6], and intrinsic spinal cord damage [13].

In addition, the literature includes reports of inadvertent dural puncture [6,14], paraplegia from intracord injection during general anesthesia [15], and epidural hematomas from epidural steroid injections and blocks [16–21]. A careful search of the literature failed to find any reports of irreversible paresis from cervical epidural steroid injections. The following case report describes a patient who developed quadriplegia after the third injection of methylprednisolone into the C6–C7 epidural space.

Case report

History

A 47-year-old male patient received cervical epidural injection of steroids (without local anesthetic) in the C6–C7 space by a pain management specialist using C-arm fluoroscopic guidance. The cervical epidural injection was performed by the same fellowship-trained pain management specialist at the same outpatient surgicenter that had performed the previous two injections; the previous injection occurred 2 weeks before the injection reported in this case. Standard procedure for the epidural injection was followed. The patient was in the prone position, and a 20-gauge Touhy needle was used to inject Depo-Medrol 80 mg/mL (methylprednisolone acetate injectable suspension) and Isovue 200 1 mL (40.8 grams iopamidol/100 mL) slowly over 10–15 seconds. According to the written information contained in the operative medical record, the injection was performed at the same level as the previous two injections with the same needle path. Although contrast media was instilled, no films were taken. Immediately after the injection, the patient experienced tingling in his hands and legs, and became quadriplegic with respiratory arrest. He was intubated and transferred to the hospital, then transferred again to Christiana Health Care Services. By the time he was seen at Christiana Health Care Services, 4 hours after the injection, some function had returned to his legs. His previous history was significant for degenerative vertebral column disease.

Initial examination

The patient was intubated but awake and alert. His eyes were spontaneously open with a positive focus, and he was following commands with his eyes. Pupils were 3 mm and reactive to light. He was unable to move bilateral upper extremities voluntarily or in response to painful stimuli. Deep tendon reflexes of upper extremities were 0/4. Motor strength of lower extremities was 4/5 on right side and 3/5 on left side. Toes were upgoing, spontaneously; deep tendon reflexes of both lower extremities (patella/ankle) 0/4. The

patient could not sense vibration or touch in upper or lower extremities. His anal sphincter tone was normal.

Investigative studies

The magnetic resonance imaging (MRI) performed at the hospital (Figs. 1 and 2) 6 hours after the injection showed that the patient's cervical medullary junction and cervical spinal cord had normal morphology and signal characteristics. However, changes in Figure 1 are suggestive of signal changes in the ventral subarachnoid space. The patient had an exaggerated lordosis of the cervical spine with 40° angle at the C6-C7 level. Disc osteophyte complexes at C5-C6 and C6-C7 abutted the ventral thecal sac. No neuroforaminal compromise was present at these levels. The MRI also showed desiccation of multiple cervical intervertebral discs and mild narrowing at C5-C6 and C6-C7 but no evidence of paravertebral soft-tissue swelling. An MRI taken 6 months later (Fig. 3) had similar findings. Both MRIs post-injury were nearly identical to MRI taken before injections.

Clinical course

The principal diagnosis was quadriplegia, secondary to cervical epidural injection. Because of the nature of the injury, the standard methylprednisolone protocol [22] was used within 8 hours of the injury. The patient's symptoms did improve somewhat over time. During the course of his hospitalization (69 days), the patient developed complications of pneumonia, sigmoid perforation, sepsis, pulmonary embolism, intra-abdominal abscess, and atrial fibrillation. Procedures performed included exploratory laparotomy, Hartmann resection of sigmoid perforation, laparotomy and drainage of abscess as well as percutaneous drainage of pelvic abscess. He was discharged on gabapentin to a rehabilitation facility. After a month in the rehabilitation facility, he was discharged home to a friend's care. At time of discharge he could feed himself independently, perform intermittent self-catheterization, and ambulate 150 feet with a rolling walker. However, he required supervision for climbing stairs, toilet transfers, bathing, and care of his colostomy.

Examination 6 months post-injury

Six months post-injury, the patient was ambulating with a wheeled walker. A physical examination showed motor strength in upper and lower extremities of 4/5, brisk reflexes bilaterally 4/4, positive Queens square test bilaterally, sustained ankle clonus bilaterally, and toes upgoing bilaterally.

Discussion

The current case represents a fairly common practice: epidural injection of steroid drugs as a conservative means to manage cervical pain. The efficacy of the procedure is largely anecdotal [23–25], although some studies show at

Download English Version:

<https://daneshyari.com/en/article/9359670>

Download Persian Version:

<https://daneshyari.com/article/9359670>

[Daneshyari.com](https://daneshyari.com)