

Cervical Cord Contusion and Cerebral Edema Following a Cervical Epidural Steroid Injection: A Case Report

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Introduction

Cervical epidural steroid injection (CESI) has become a common treatment for patients with radicular pain. Cervical radiculopathy is a common condition, affecting 83 in every 100,000 persons each year [1]. This condition typically presents with cervical pain, with or without radicular pain extending to the upper extremity. Initial management for cervical radiculopathy includes nonsteroidal anti-inflammatory drugs (NSAIDs), anticonvulsants, muscle relaxers, and physical therapy [2]. CESIs are reserved for patients who do not respond to conservative management and have been proven to be an effective intervention to achieve analgesic relief [3]. The overall rate of complications with CESI has been estimated to be around 5 in 1000 injections, with minor complications including vasovagal symptoms, new paresthesia, and skin rashes [4]. However, there have been cases of severe complications with CESIs, including strokes, hematomas, and vertebral artery dissections [5]. While these severe complications are rare, it is important to be aware of these potential adverse events when considering the risks and benefits of performing CESIs. Thus, we present a rare case of cervical contusion following a CESI in a patient with spastic neck movement.

Discussion

This case report adds to the literature that severe complications, such as cervical contusions and cerebral edema, are potential risks when performing CESIs. While the exact mechanism remains unknown, this case highlights the importance of careful patient selection and education before performing injections in the cervical region. While CESIs are a commonly used approach for the management of cervical pain, and complications are rare, these interventions are not without risks.

Diagnostic Imaging



Figure 1: MRI findings with intramedullary signal abnormality to the left of C5-C7, favoring cord contusion with punctate intrinsic hemorrhage as well as left paracentral extrusion at C5-C6.

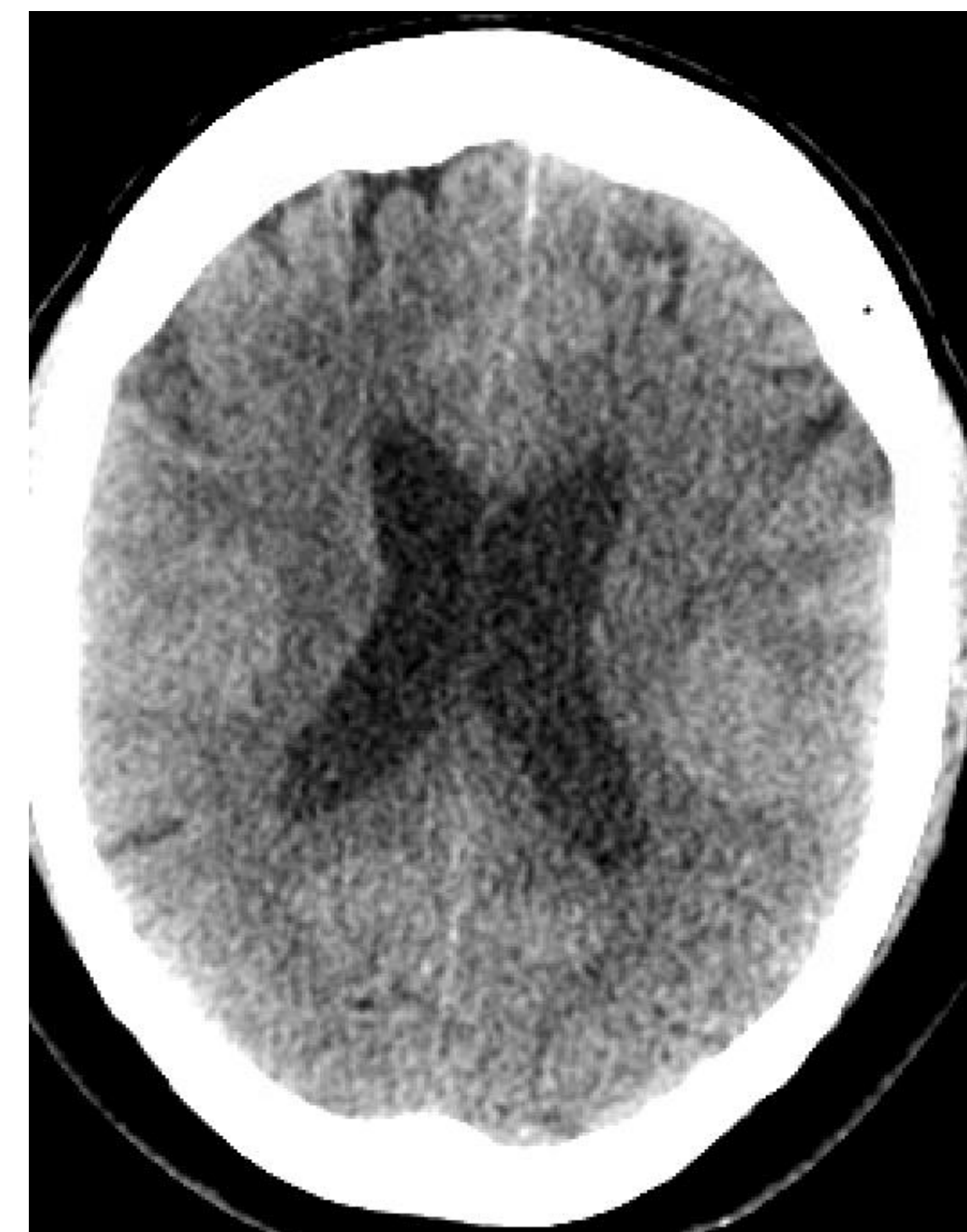


Figure 2-3: Global parenchymal edema and cerebellar tonsillar herniation.

Case Presentation

This case involves a 71-year-old male with chronic neck pain extending to the left arm. MRI of the cervical spine revealed cervical spondylosis with C5-C6 and C6-C7 disk height loss and central disk protrusion. The patient was referred to pain management for C5-C6 epidural steroid injections. The C6-C7 interlaminar space was identified fluoroscopically in anteroposterior (AP) fluoroscopic projection. The injection sites were anesthetized with 1.0% lidocaine, and the needle was advanced to the epidural space. Loss of resistance was encountered, omnipaque was injected, and needle tip placement was confirmed in lateral and oblique views. Prior to injection of therapeutic substance, the patient made a spastic neck extension movement. The needle was removed, and the patient was transported to the emergency department (ED) due to left arm pain and weakness. Computed tomography (CT) of the head and cervical spine revealed cerebral edema and C5-C7 cord contusion with punctate intra-axial hemorrhage. Repeat MRI brain revealed resolution of cerebral edema, and the patient was transferred to inpatient rehabilitation due to continued left hemiparesis. On admission to inpatient rehab, the patient had pain related to left upper extremity spasticity. Baclofen was initiated and titrated to achieve improvement in spasticity and pain control before discharge.

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