

Spinal Cord infarction after Cervical Transforaminal Epidural Steroid Injection : A Case report

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Introduction

Cervical transforaminal epidural steroid injection (TFESI) is commonly performed to provide symptomatic relief of pain in radiculopathy. But there are some risks of cord infarction exist. Intra-arterial injection of particulate steroid suspension or direct needle injury can lead to spinal artery embolism or thrombosis. Also there is a possibility of vascular spasm. To our knowledge, this is the first reported case of spinal cord infarction that occurred after TFESI with non-particulate steroid in Korea.

Case report

A 47-year-old female patient with 6-month history of right upper arm pain visited local pain clinic. She was diagnosed as cervical radiculopathy (C7) by electrodiagnostic study. The patient underwent C7 TFESI. Injected materials were dexamethasone and mepivacaine. Right after the intervention, she felt weakness and decreased sensation in whole extremities and body and mild respiratory difficulty. Cervical spine magnetic resonance image (MRI) was checked and it showed no signal change in spinal cord (Fig. 1). After 10 hours from the onset of the symptom, the weakness of lower extremities and respiratory difficulty disappeared. But the patient continued to complain of weakness in upper extremities and decreased sensation on both arms and hands. On physical examination, she had decreased sensation from C4 to T2 dermatome in light touch and pin-prick test. Proprioception and vibration were intact. The motor grades of upper extremities were grade 1. And whole muscles in lower extremities were normal. She could contract anus voluntarily with intact power. Thus, her condition met the criteria for spinal cord injury ASIA D. Cervical and thoracic spine MRI was checked again for further evaluation after 5 days of symptom onset. High signal intensity was noted from C2 to T1 level in T2-weighted image (Fig. 2). Diffusion-weighted image and apparent diffusion coefficient image showed long extension of spinal cord infarction from C2 to T1 level (Fig. 2). When the patient was referred to rehabilitation unit, activity of daily living was impossible with upper extremities. She could stand and walk on even surface under supervision. But she couldn't change the position from lying to sitting by herself, and moderate assist was needed. Bladder and bowel function was normal. She was treated with ROM exercise, therapeutic electrical stimulation, occupational therapy for daily activities, matt exercises for body balance. And she kept taking aspirin and atorvastatin for the prevention of re-infarction. After six months, her condition improved. The motor grades of both elbow flexor, wrist extensor and elbow extensor improved to Grade 3. But both finger flexors, finger abductors were still grade 1. She needed moderate assistance

for the activities such as washing, toileting, bathing and clothing due to poor strength of distal parts of upper extremities.

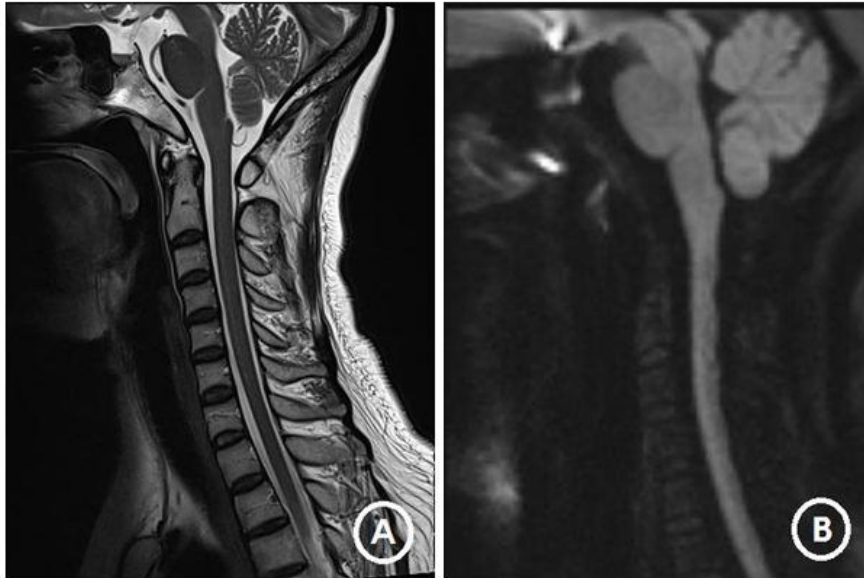


Fig. 1. Cervical MRI was taken about an hour after the symptom onset. (A) T2-weighted image and (B) Diffusion-weighted image showed no signal change throughout the cervical spinal cord.

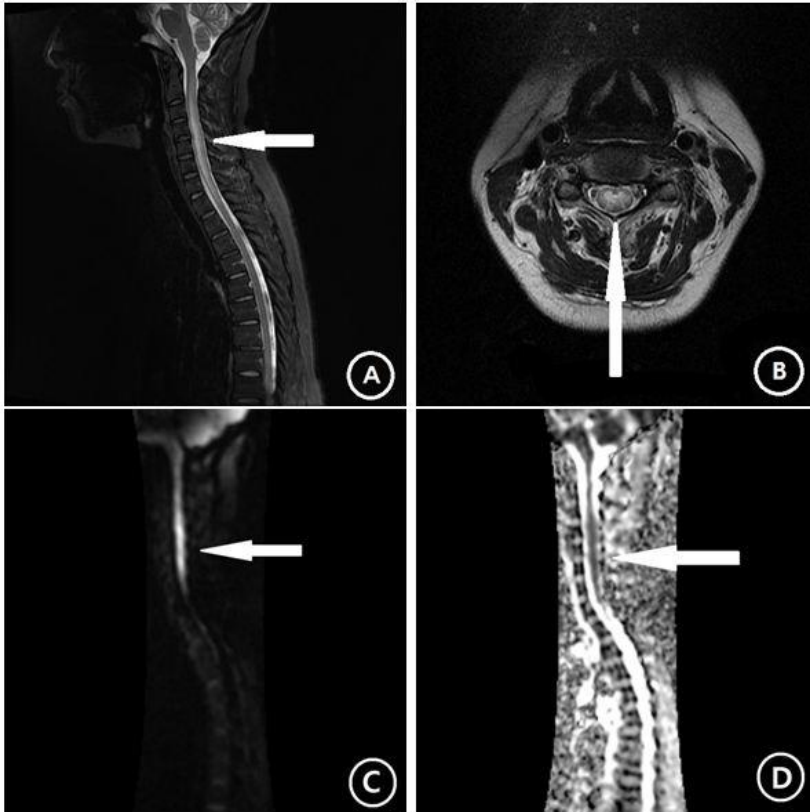


Fig. 2. Cervical MRI was taken 5 days after the symptom onset. There are spinal cord lesions in cervical and upper thoracic level (Arrows). (A) In sagittal view, T2-weighted image showed high signal intensity from C2 to T1 level. (B) In axial view, T2-weighted image showed high signal intensity in bilateral areas of spinal cord on C4 level. (C) Diffusion-weighted image and (D) apparent diffusion coefficient image showed long extension of spinal cord infarction from C2 to T1 level.