

Dermatomal Skin Rash After Lumbar Epidural Steroid Injection

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Objectives: The objective of this case is to report an occurrence of a skin rash in a dermatomal distribution subsequent to a lumbar transforaminal epidural steroid injection.

Methods: In this clinical report, a 54-year old woman performed a left L5 transforaminal epidural steroid injection to manage left thigh and foot pain and tingling. She developed a rash in left L5 dermatomal distribution following injection.

Results and Discussion: This is the first described case of a focal dermatomal rash occurring following lumbar transforaminal epidural steroid injection and we wish to remind pain practitioner's of the possibility of anaphylactic events.

Key Words: epidural, steroid, complication, skin rash

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Lumbar transforaminal epidural steroid injection (LTESI) is a procedure often used in the treatment of radicular pain.¹ When nerve roots exiting the spinal column are compromised, low back pain with radiation into the lower extremities may occur, also known as lumbar radicular pain.² Nerve root compression can occur for many reasons, including herniation of intervertebral disk, spondylosis, or spinal stenosis. By decreasing inflammation around the affected nerve, transforaminal steroid injections (TFESI) can be an effective treatment for lumbar radicular pain.³

Systemic allergic reaction have been reported,^{4–11} including contrast, local anesthetic, or steroid, however, there does not appear to a report of focal dermatomal reaction after transforaminal epidural steroid injection. We report a case of dermatomal skin rash development after transforaminal epidural steroid injection.

CASE REPORT

A 54-year-old woman weighing 62 kg presented to the pain clinic with lumbar radicular pain. She had undergone a left L4-to-L5 laminectomy before in 2009. After laminectomy, her pain was relieved. However, she complained of tingling in the left L5 dermatome, despite surgery. Her pain was 9 to 10/10 and was aggravated by prolonged standing, and walking. She had no numbness or weakness. Physical examination showed normal reflex, strength, and sensation and no sign of dural tension. A postoperative magnetic resonance imaging scan showed decom-

pression at L4 or L5 (Figs. 1A, B). Electromyography showed chronic left L5 radiculopathy.

Pharmacologic treatment with nonsteroidal anti-inflammatory drugs, gabapentin and oxycodone, and physical therapy did not improve her tingling sensation. Blood chemical analyses showed a white blood cell count of 10.7, a neutrophil count of 73, a lymphocyte count of 18.7, and an eosinophil count of 2.

Initially, she was given a fluoroscopically guided left L5 TFESI with 0.5 mL of contrast medium (iohexol), 1 mL of lidocaine (1%) mixed with 1 mL of normal saline (Fig. 2). She had complete relief from symptoms, for the duration of local anesthetic, confirming the diagnosis of L5 radicular pain. Two weeks later, she was given a TFESI with a 40-mg contrast medium (iohexol) triamcinolone (Tamceton, Hanall, Daejeon, Korea) and 1 mL of lidocaine (1%). The triamcinolone contained both triamcinolone acetonide and carboxymethylcellulose sodium. The injection was tolerated well by the patient without any complication.

One hour after the injection, the patient noted a dermatomal skin rash on her left buttock (Figs. 3A, B). Vital signs and blood chemical analyses showed normal limits (white blood cell count of 8.1, neutrophil count of 67.5, lymphocyte count of 25, and eosinophil count of 2.1). Our differential diagnosis included herpes zoster. The rash was erythematous and evolved into an appearance of a group; however, blisters did not appear in the skin rash. The patient was diagnosed with allergic reaction or pseudoallergic reaction. The patient was treated with intramuscular chlorpheniramine maleate 1 ampule (2 mL of 5 mg) immediately after development of the rash. There was full resolution of the presenting skin rash over the next 12 hours.

Two weeks after the first injection, the patient returned to the pain clinic requesting another TFESI. The patient commented on the marked, but incomplete, relief from pain after the first TFESI. Owing to the patient's previous reaction, the patient was referred to an allergist and skin testing was done with intracutaneous injection of 0.1 mL of triamcinolone preparation (25 mg/mL) in the forearm. A control solution of 0.1 mL of preservative-free normal saline was similarly placed in the same extremity. Having no adverse reaction during a 1-hour period of observation, a second TFESI was administered using the previously mentioned method. Approximately 1 hour later, the patient again complained of a skin rash at the same site (left buttock) and nature like the previous injection. The patient was once again given chlorpheniramine maleate (2 mL of 5 mg) intramuscularly and she was referred to a dermatologist for further evaluation. The diagnosis was allergic dermatitis. Her rash disappeared 12 hours after injection, and the visual analog scale score decreased to 2.

DISCUSSION

The patient showed a left L5 erythematous dermatomal skin rash after LTESI. The skin rash was erythematous and grouped. However, she did not complain of pain over the area of rash, or other sensations such as itching, paresthesia, and dysesthesias. On physical examination, tactile sensitivity and allodynia were not reported.

Allergic reaction occur after epidural injection with local anesthetic or steroid.^{4,5,12} However, there is little

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FIGURE 1. A preoperative axial magnetic resonance imaging scan showed a subarticular portion stenosis in the left L4-5 intervertebral levels (A), and a postoperative scan showed well decompression (B).

literature on the subject. Although corticosteroids are often used to treat allergic reactions, they can also cause allergic-type reaction. There are many reports of anaphylactoid or anaphylaxis to corticosteroids.^{6,7,13,14} Karsh and Yang⁷ reported an anaphylactic reaction occurring after an intra-articular injection of triamcinolone in a 75-year-old man who had positive prick skin tests to triamcinolone. The mechanisms of steroid-induced adverse events vary from patient to patient: some being immunoglobulin E mediated⁷ whereas others are pseudoallergic in nature.⁴ Severity of reaction can vary from a rash to anaphylaxis or death. Both immediate and delayed reactions can occur.¹³ Most

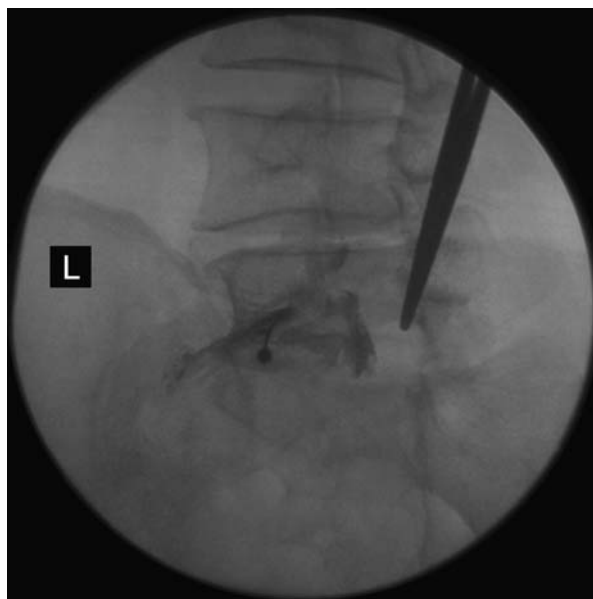


FIGURE 2. Fluoroscopic anteroposterior image of left L5 transforaminal epidural injection, using subpedicular placement.

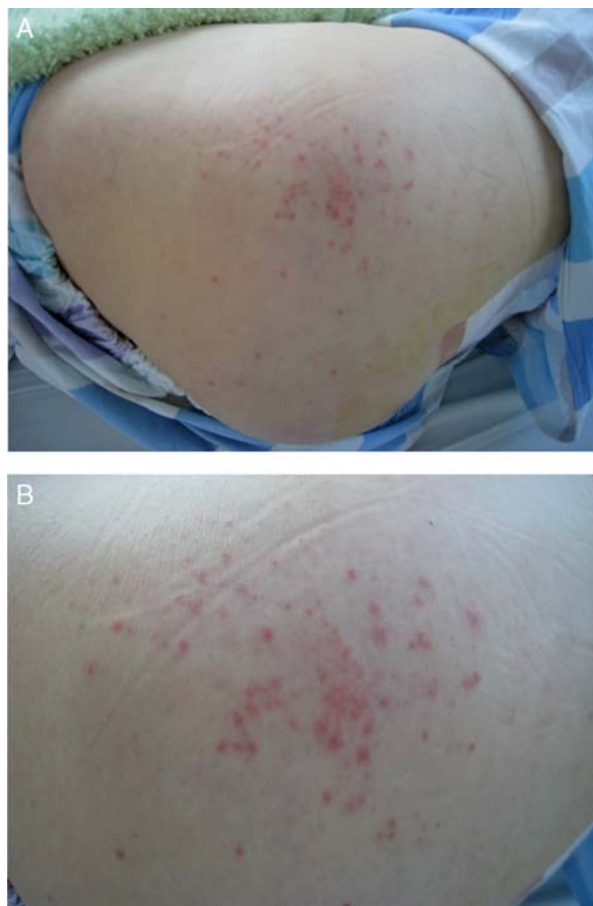


FIGURE 3. The erythematous dermatomal rash in the left buttock (A), and peroneal region (B).

implicated corticosteroids are methylprednisolone and hydrocortisone.¹⁵ A reaction to triamcinolone is uncommon.^{6–8}

In 1 earlier report, a systemic allergic reaction occurred 1 week after the epidural steroid injection.⁴ Our case is different from earlier reports as systemic reactions did not occur in our patient. The skin rash only occurred after left L5 dermatome, and anaphylactic or anaphylactoid signs or symptoms including urticaria, wheezing, laryngeal, pharyngeal, and glottis edema; bronchospasm, pulmonary edema, diarrhea, hypotension, or dysrhythmias did not appear. A generalized maculopapular eruption 24 hours after oral triamcinolone administration has been reported,¹⁶ as has a localized pruritic papular eruption 8 hours after intradermal administration of triamcinolone,¹⁷ but this can be delayed for as long as 2.5 hours.¹⁸

Carboxymethylcellulose is a carbohydrate that widely used as an additive. There are several reports on anaphylactic reaction because of carboxymethylcellulose in injectable corticosteroids^{19,20} or iodinated contrast media.²¹

We have not determined the etiology using a skin test. We could neither explain the causative agent nor the mechanism of the dermatomal skin rash. There are many causative agents, including barium sulfate, carboxymethylcellulose sodium, sodium metaphosphate, sodium benzoate, sodium dehydroacetate, ethyl parahydroxybenzoate, propyl parahydroxybenzoate, glacial acetic acid, saccharin sodium, and flavorings, but these tests were not performed. In conclusion, this is the first described case of a focal dermatomal rash occurring after LETSI and we wish to remind pain practitioners the possibility of anaphylactic events.

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