

Brief Commentary

PARTICULATE EPIDURAL STEROID MAY NOT BE DETECTABLE ON MAGNETIC RESONANCE IMAGING

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Lumbar epidural steroid injections (LESI) have become a staple in the interventional pain physician's armamentarium. For patients with radicular symptomatology, LESIs provide substantial pain relief with a favorable safety profile. Adverse effects, although rare, can occur as with any procedure. One of the most dreaded complications is the development of an epidural hematoma, which should be readily seen on Magnetic Resonance Imaging (MRI). It has been previously thought

that particulate steroid injections should also be seen on MRI potentially obscuring a physician's clinical judgment. We present two cases where patients underwent an uncomplicated LESI and subsequently went for a lumbar MRI that displayed no injectate in the epidural space.

Key words: Epidural steroid injection, magnetic resonance imaging, particulate injection, hematoma

Lumbar epidural steroid injections (LESI) are safe and effective for the treatment of lumbar radicular pain (1). Complication rates from LESI are extremely low (2). In one study, 16,638 patients who underwent LESI were analyzed and found to have zero major adverse effects (3). Mass occupying lesions in the

epidural space may result in neurologic deficit (4). It is thought that particulate steroid, deposited in the epidural space, may be visualized on magnetic resonance imaging (MRI) and subsequently make the diagnosis of underlying pathology challenging (5,6).

Figure 1A demonstrates the procedural fluoroscopic imaging of an 80-year-old patient, with no risk factors for increased bleeding, who underwent an uncomplicated right L4/5 interlaminar LESI for low back pain and lumbar radiculopathy. The injectate used included 80 mg of methylprednisolone with local anesthetic for a total volume of 3 mL. Figure 2A demonstrates the procedural fluoroscopic imaging of a 79-year-old patient who underwent an uncomplicated caudal epidural injection for low back pain and lumbar radiculopathy, using a Coude needle and Brevi-Kath epidural catheter (Epimed, Dallas, TX). The injectate used included 2 mL of Depo-Medrol 40 mg/mL mixed with 2 mL of local anesthetic and sterile normal saline solution, which was deposited at the L4/5 interspace level. In both cases, the patients underwent a previously scheduled MRI later that day after the LESI was performed. This was previously arranged due to an unrelated neurological deficit. Figures 1B and 2B demonstrate the respective MRIs acquired that

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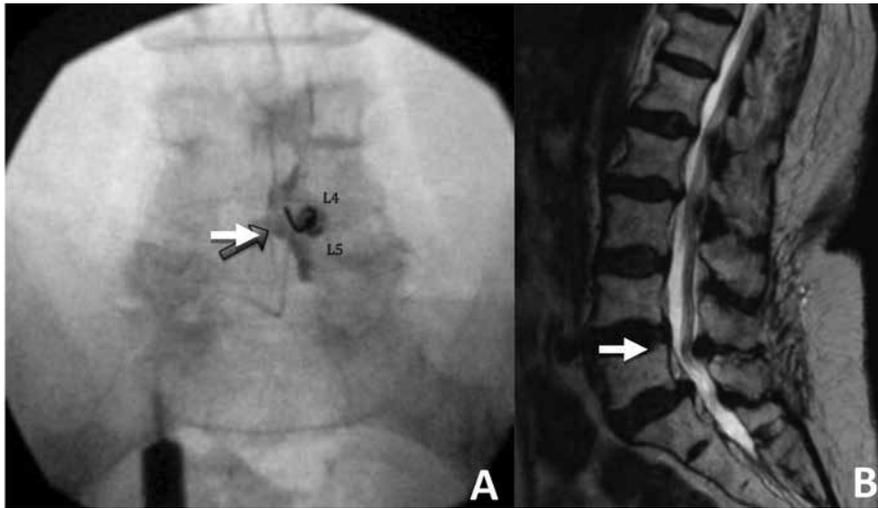


Fig. 1. (A) Intraoperative fluoroscopic imaging depicting epidural contrast medium spread (arrow) at the L4/5 level. (B) T2-weighted MRI imaging of the lumbar spine in the sagittal plane after interlaminar epidural injection demonstrating no evidence of an epidural collection.

demonstrated no evidence of epidural collection.

Our findings suggest that particulate steroid in the epidural space may not be detected on MRI. Further studies are needed to determine the sensitivity and specificity of MRI for the detection of particulate steroids in the epidural space.

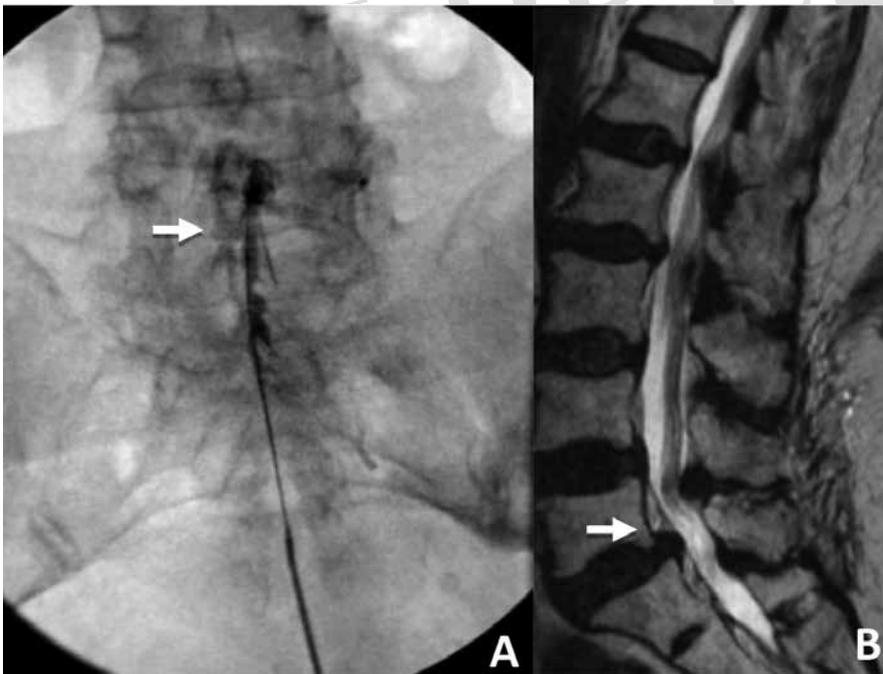


Fig. 2. (A) Intraoperative imaging depicting epidural contrast medium spread in the lumbar spine after caudal injection. (B) T2-weighted MRI imaging of the lumbar spine in the sagittal plane after caudal injection demonstrating no evidence of an epidural collection.

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