

◇ Letters to the Editor

Transforaminal Epidural Corticosteroid Injection: Rational Evidence-Based Practice

To the Editor:

We read with interest about the devastating complication of paralysis after transforaminal epidural injection in the case report by Huntoon and Martin.¹ The benefit of performing transforaminal lumbar epidural steroid injection in selected patients with contained disc herniations has been described.⁴ In the editorial by Rathmell and Benzon,³ efficacy of this technique was claimed, but the actual article they referred to, by Karppinen et al.,² was a randomized controlled trial with a negative outcome. However, subanalysis by Karppinen et al.² illustrated the benefits of transforaminal lumbar epidural steroid injection in contained versus extruded herniated discs. Previous reports that have accounted for paraparesis after lumbar transforaminal epidural steroid injection have involved patients who have undergone surgical procedures before epidural injection.⁵ A prominent conjecture is that distortion of anatomy occurs after spinal surgery. Patients with chronic intractable neuropathic pain secondary to failed-back-surgery syndrome are not ideal candidates for transforaminal approach to the epidural space with corticosteroids. Interestingly, Kurunlahti et al.⁶ have evaluated lumbar blood flow in patients with sciatica at 1 and 3 years and have illustrated an association between stenosis of lumbar arteries and patient estimated physical ability. Newly formed stenoses were associated with a history of low back pain in the preceding year.⁶ Thus, vascular anomalies appear to occur even in nonoperated patients with low back pain.

Baker et al.⁷ described intra-arterial injection of contrast into a cervical radicular artery before attempting to perform a C6-C7 left-side transforaminal injection of corticosteroids. The operator in this case successfully identified intra-arterial injection of contrast, and the procedure was abandoned with the patient suffering no ill effects.⁷ The operator utilized digital subtraction real-time fluoroscopic imaging to reveal that a radicular artery supplying the cord directly had been penetrated. The authors in this case could not conclude whether the needle was in the artery or the artery had only been punctured by the needle, and contrast from the surrounding tissues was forced through an artery via an open puncture.⁷ This case further reiterates that negative aspiration is not very sensitive and will not reveal whether the needle has been placed in an artery.⁸ The benefit of (digital subtraction) real-time fluoroscopic imaging cannot be underestimated in patients after injection of contrast.

Physicians who perform lumbar transforaminal injections should be aware that serious complications can occur with this procedure. The incidence of serious complications has not been quantified, because complications have only been

recognized in the past few years. One must obtain the prevalence of these complications, and quantify the exact complication rate, as compared with neurovascular complications of operative interventions on the spine. Only at this juncture will we be in a position to advise patients and allow them to make an informed choice based on the knowledge of the risks versus benefits of undergoing transforaminal injection of steroids. In the meantime, we do not want to deny patients the benefits of epidural corticosteroids delivered in the most efficacious manner for the management of lumbar radicular pain.² Physicians must be cognizant of the risks in performing such procedures and, accordingly, must inform patients of the possibility of severe neurovascular complications, even though such complications, fortunately, are rare.

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