

Letters to the Editor

Adding Particulate or Non-Particulate Steroids to the Local Anesthetics When Performing Parasagittal Interlaminar Epidural Injections

To the Editor

We read with great interest a recent study by Ghai et al (1) wherein they followed 56 out of 69 randomized patients for 12 months following parasagittal interlaminar (PIL) injection with local anesthetics (LA) alone or LA with steroid (LS). We agree with author's choice of technique to achieve adequate and consistent ventral epidural spread of injectate. Parasagittal interlaminar epidural steroid injections are underrepresented in the literature and frequently are not differentiated from midline interlaminar epidural steroid injections, by authors performing analyses of efficacy.

We were successful at presenting the advantages of PIL-ESI with regards to ventral spread of contrast (2), clear superiority to midline interlaminar (MIL-ESI) (3), and non-inferiority to transforaminal epidural steroid injections (TF-ESI)(2). In 2008, we used an independent blinded radiologist not affiliated with primary study institution to confirm scoring of ventral epidural spread as observed on the lateral projection fluoroscopic images (2). We also recognize the author's input in favor of utilizing a parasagittal technique in interventional low

back pain management (4,5) in light of great controversy associated with epidural steroid injections and utilization of corticosteroids for interventional management of chronic lumbar radiculopathy.

However, Ghai et al (1), when comparing results of their study with previous studies done by Manchikanti (6-11) (Table 1), failed to properly address a major difference between these studies. Instead of commenting on differences in study patients' clinical and ethnic characteristics, they should have focused their discussion on differences between insoluble (particulate) methylprednisolone and soluble (non-particulate) betamethasone steroids. Manchikanti et al showed that lidocaine alone provides clinically significant pain relief and functional improvement regardless of whether the drug is administered as a caudal, interlaminar, or transforaminal lumbar injection (12,13). After reviewing all relevant studies by Manchikanti et al (Table 1), it is evident that addition of steroids might be superior in some patients with disc herniation as it was shown in this present study and in the most recent review (1). However, in all studies they strictly utilized betamethasone.

Table 1. Study characteristics and outcomes of randomized interlaminar epidural injections using local anesthetic and local anesthetic with steroid.

Journal; Epidural Approach; Indication	Total # patients; Volume solution; Type of solutions	Groups of treatment	Time of follow-up for pain relief and functional assessment				
			0 mo	3 mo	6 mo	12 mo	24 mo
Pain Physician 2010; 13:343-355[6] Lumbar Interlaminar Lumbar Disc Herniations	Total n=70 patients; 6mL 0.5% lidocaine (LA) or 5mL 0.5% lidocaine + 1ml betamethasone (LS)	Group I (n=35): LA	8.3±1.0 29.8±4.6	3.9±1.2 15.4±5.2	4.3±1.3 16.2±5.4	3.9±1.3 15.2±5.5	
		Group II (n=35): LS	7.7±0.9 28.9±5.4	3.5±1.1 13.8±4.6	3.4±1.0 13.4±4.5	3.3±1.2 12.8±4.4	
Pain Practice 2013; 13:547-558 [7]/ Pain Phy- sician 2014; 17:E61-74[8] Lumbar Interlaminar Disc Herniation / Radiculitis	Total n=120 patients; 6mL 0.5% lidocaine (LA) or 5mL 0.5% lidocaine + 1ml betamethasone (LS)	Group I (n=60): LA	8.2±0.8 30.3±4.7	3.9±1.6 15.8±6.3	4.1±1.6 16.1±6.6	4.0±1.6 15.9±6.9	4.1±1.7 16.1±6.8
		Group II (n=60): LS	8.0±1.0 29.6±5.2	3.5±1.0 14.0±4.2	3.5±1.0 13.5±4.2	3.4±1.2 13.0±4.2	3.7±1.4 13.5±4.8

Advantages of this study would be the investigation of the epidural ventral spread that was regrettably only mentioned in one brief paragraph without explaining how this analysis was performed. PIL-ESI is less technically challenging and carries a smaller risk of intravascular steroid injection than a TF-ESI. This would be crucial for the study since the authors used large volumes of injectate (8 mL), which was much higher than in previous Manchikanti studies and which was double the amount of the standard epidural injection volume. A much larger volume would dilute and distribute corticosteroid to above and below of the target site of nociception. There is a possibility that higher volume of injectate can have a better “wash-out” of inflammatory mediators but it would be difficult to claim this conclusion without an appropriately designed randomized prospective study.

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