To the Editor:

The study by Southern et al, is an excellent contribution to the Pain Physician for several reasons. As opposed to the majority of previous studies, it focuses on the outcomes of caudal epidural steroid injections (ESI) for axial low back pain (LBP) only, excluding patients with radiating pain to the lower extremity.

As most of the practicing physicians acknowledge, it is very difficult to make an accurate diagnosis of LBP. The back area is very poorly represented in the somatosensory cortex of the human brain, and the patient's history and physical exam often fail to pinpoint the exact etiology of pain. However, certain pain radiation patterns commonly match the underlying pathology. Isolated axial LBP is usually seen with facet joint disease, discogenic LBP, sacroiliac joint disease and myofascial pain. Pain radiating to the foot is more commonly associated with lumbar radiculopathy and piriformis syndrome. With so many variables present in pain presentation and in our diagnostic and therapeutic procedures, it seems to be prudent to narrowly focus on the single symptomatology (or, if known pathology) with a single treatment modality when outcome studies are performed.

An excellent previous study by Lutz et al. showed that by narrowing the inclusion criteria (lumbar radiculopathy) and method (transforaminal approach to the ESI), valuable information can be gathered with favorable outcomes (75.4% long term success rate)(1). A subsequent prospective randomized controlled study by Vad et al. used the same methodology and replicated the Lutz et al. findings with even better outcomes (2).

To date, there are no reports evaluating outcomes of ESI for axial pain only. Some previous studies may have included the subjects with axial back pain in their data analysis, but failing to separate them from subjects with radiating pain to the leg. The potential use of ESI for the treatment of axial LBP can be very appealing. Steroids placed in the epidural space may easily spread to the potential pain generators (posterior disc annulus, posterior longitudinal ligament, facet joints) and therefore inhibit its inflammation and nociceptor discharge. The ESI can be used as a first line of therapy for axial LBP if conservative treatments have failed (physical therapy, NSAID's). The patients (even a small percentage) who benefit from ESI's may avoid the complexity of other diagnostic/therapeutic procedures such as diagnostic medial branch blocks, radiofrequency lesioning, discography and Interdiscal Annuloplasty (IDET).

However, the article by Southern et al. failed to show that outcomes with caudal ESI for axial LBP are better than the expected placebo response (although the patient satisfaction with the procedures was much higher than the improvement in pain). Although these results are not encouraging, they do not exclude the potential use of ESI as an initial treatment for axial LBP. The article by Southern at al. did not rule out that some of the study subjects may have a component of facet joint or sacroliliac joint pain. If these subjects were excluded better outcomes may have been achieved. On the other hand, although anatomically less likely, it is also possible that patients with other types of axial LBP may respond well to ESI. There are no studies on ESI for facet joint pain published so far.

An excellent point in this article is that the authors used only one technical approach to the epidural space. As many recent studies showed, it seems that technical aspects of ESI's may affect the outcomes. There is a growing acceptance of the routine use of fluoroscopy for ESI among the majority of practitioners. However, the recent national survey showed that there is still no national consensus on the technical aspects of ESI (3). It seems that there is no "best" way to perform the ESI, rather that a certain technical approach may better suit a certain pathology.

It is not clear that the caudal approach is the best choice for targeting the axial LBP. Although some studies support the use of the caudal approach (4) for various kinds of low back pain, others found it inferior to the translaminar (interlaminar) approach (5). Critiques of the caudal approach often state that because of higher volumes of solution used, it diminishes the amount of steroids that reaches the site of pathology. The potential scar tissue formed by inflammatory mediators may further diminish the spread of steroids to the targeted pathology, if administered at a distant site. The article by Southern et al. assumes that the caudal approach provides an excellent ventral epidural spread where the pain generator (annulus fibrosus, posterior longitudinal ligament) may be located. To date, there are no published studies looking at the ventral epidural solution spread with caudal ESI. The previously determined ventral spread for the translaminar approach was 24% for thoracic ESI (6), with a similar percentage found in cervical levels (7). When examining these facts, one may raise the question if the potential outcomes of ESI for the treatment of axial LBP may improve with a translaminar or bilateral transforaminal approach. The potentially more accurate placement of medication may also allow for lower volumes and a more accurate placement of steroids to be used. Even a smaller dose of steroids can potentially be used with the same effect, allowing for more often repeated ESI without the fear of systemic effects of steroids. Further prospective, randomized double-blinded studies may be needed to answer these questions.

The need for more studies does not diminish the value of the article by Southern et al. On the contrary, this study shows the importance of narrowing the inclusion criteria when outcome studies are conducted. In future studies, by minimizing the variables, we may be better able to determine what is the proper treatment option for certain forms of LBP .

References

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