

Optimal Angle of Contralateral Oblique View in Cervical Interlaminar Epidural Injection: Safety or Precision?

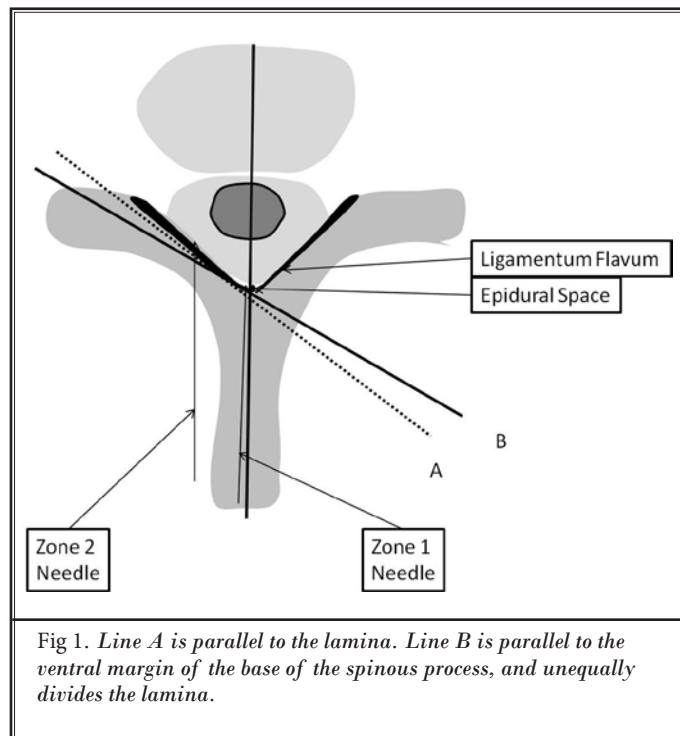
To the Editor:

In their article Park et al (1) further analyze the angle to be used for the contralateral oblique (CLO) view. They measure the angle between the mid-sagittal plane and 2 different regions of the dorsal spinal canal: the dorsal spinal canal at the base of the spinous process and the dorsal spinal canal at the base of the lamina. These 2 regions are classified as Zone 1 and Zone 2 respectively (Fig 1) (1). The optimal angle proposed for Zone 1 needles is 10° degrees (60°) than the angle for Zone 2 needles.

We have previously shown in a prospective study that when using the measured angle approach, the loss of resistance occurs at the ventral interlaminar line (VILL) in the majority of patients. The mean measured angle was 53° and we had proposed that an angle of 50° would be a good surrogate. It has been shown that with increasing obliquity the needle tip undergoes posterior translocation (2,3). Thus, using an angle higher than 50° is likely to place an increasing number of needles on the VILL. The real question is: is increasing obliquity safe?

At what point does the CLO view become a lateral view? As the needle marches laterally, there is a continuum of angles with 90° for mid-line needles and ending at around 50° for needles in Zones 2 and 3 (Fig 2). This variability in angles is a source of ambiguity. What then is the best angle to use? Increasing obliquity makes it possible that the needle tip accesses the epidural space even before the VILL (Fig 3). In this scenario, the consequences of advancing the needle farther, as would be considered appropriate, could be catastrophic. Additionally, at this point, this view is no longer a laminar view, but a hybrid of lateral and laminar views. The laminar appearance will need to be tested prospectively.

A contralateral oblique view enhances the safety of epidural access by crisp visualization of



the needle tip as well as providing a landmark at or just beyond which the loss of resistance can be expected. To maintain this safety a standardized approach is needed. Part and parcel of this standardized approach is using a safe obliquity at which the needle will never access the epidural space before encountering the VILL. The measured laminar angle approach guarantees this. A hybrid approach creates ambiguity in terms of the appropriate angle to be used based upon needle location in the anteroposterior (AP) view, and thus diminishes the safety by undermining a standard angle for all positions of the needle tip in the AP view. Additionally, such an obliquity is outside the limits of traditional fluoroscopes. The lateral view makes the most sense with midline needles but often this cannot be used because of several other shortcomings.

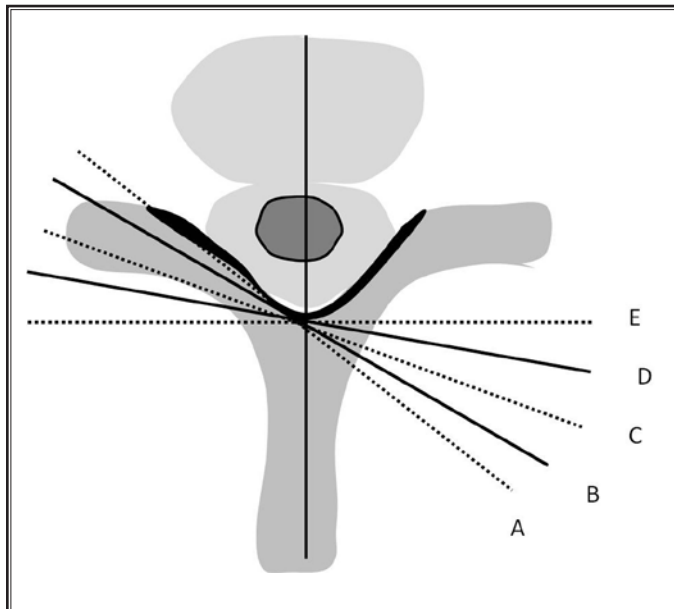


Fig 2. Continuum of angles of the ventral bony margin starting from 90 degrees in the midline to 80, 70, 60, 53 moving laterally represented by lines A, B, C, D and E respectively.

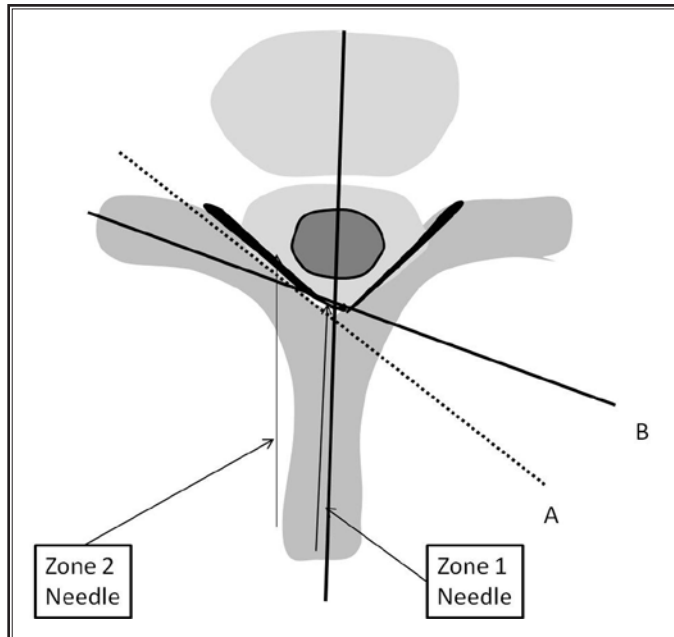


Fig 3. Line A parallel to lamina, line B representing danger of over obliquity.

As the authors state, this is not a prospective clinical study, rather retrospective angle measurements on the MRI. A clinical study would be needed to test this hybrid approach against what has already been shown in an experimental design and tested in many clinical practices. A desire for greater precision should not compromise safety.

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3. Gill J, Aner M, Simopoulos T, Gill JS, Aner M, Nagda JV, Keel JC, Simopoulos TT. Contralateral oblique view is superior to lateral view for interlaminar cervical and cervicothoracic epidural access. *Pain Med* 2015; 16:68-80.