The occasional epidural steroid injection

See related articles on pages 119, 127 and 145

Robert Minty, MD
Len Kelly, MD
Division of Clinical Sciences, Northern Ontario School of Medicine, Sioux Lookout, Ont.

Correspondence to:
Len Kelly;
lkelly@mcmaster.ca

This article has been peer reviewed.

This description of an epidural steroid injection accompanies a related research article in this issue.[1]

Epidural steroid injection for back pain is a procedure that a general practitioner–anesthetist, experienced in epidural anesthesia administration, may want to consider for treating back pain in appropriately selected patients. The procedure differs from a standard epidural (typically given in healthy, young pregnant women) in that the patient population typically has moderate to severe lumbar osteoarthritis, making the procedure technically more difficult.

Patients with lumbar spinal stenosis (in which neurogenic claudication is relieved by forward flexion) and patients with lumbar disc herniation (which includes reproducible sciatica) could be considered candidates. The present supporting evidence for this procedure is weak, but it is sometimes suggested by orthopedic specialists when conservative or surgical options are limited.

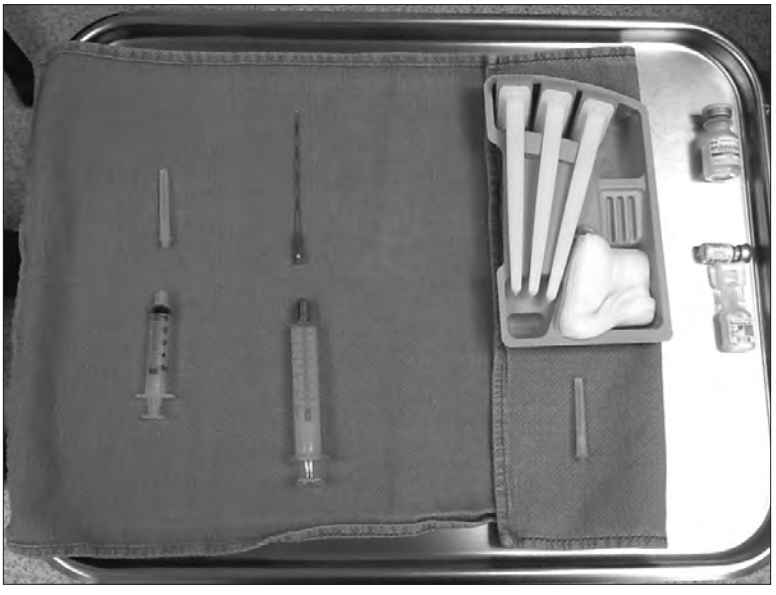


Fig. 1. The equipment is a standard epidural tray set-up (containing 17-gauge Tuohy loss-of-resistance needle, sterile preparation and lidocaine in a 25-gauge 1.5-inch needle), with no need for the catheter component or securing adhesives.

PATIENT SELECTION

It might be wise to initially avoid selecting patients who have had back surgery, as the procedure is most challenging in these patients, and indwelling hardware always increases the risk of infection.

We evaluate the patient for interspinous ligament and quadratus lumborum trigger points, which can be treated effectively with tissue injections of lidocaine and do not need epidural steroids.[2]

THE PROCEDURE

As in any other epidural injection, the patient must be instructed to notify the physician if any paresthesia is experienced during needle advancement. If this occurs, the physician must realign the needle and change angles. No injection or advancement should be done until the needle is repositioned and any paresthesia is resolved. See Figures 1–6 for step-by-step instructions on performing the procedure.

AFTERCARE

Be cautious with mobilizing the patient afterward as some people are prone to

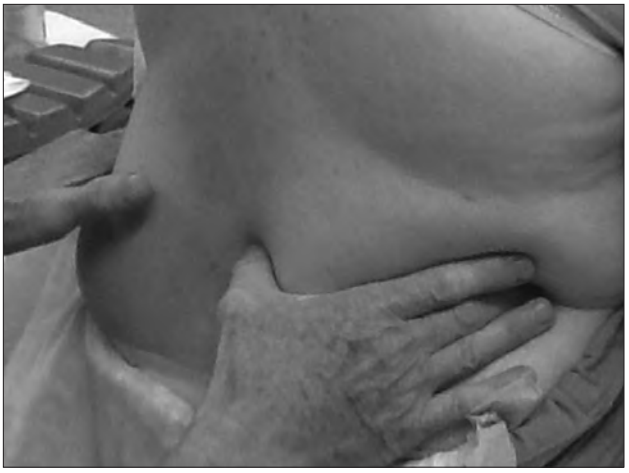


Fig. 2. We have the patient seated with lumbar spine in flexion. Using the iliac crest as a marker, we generally consider this to be L4-5 level.

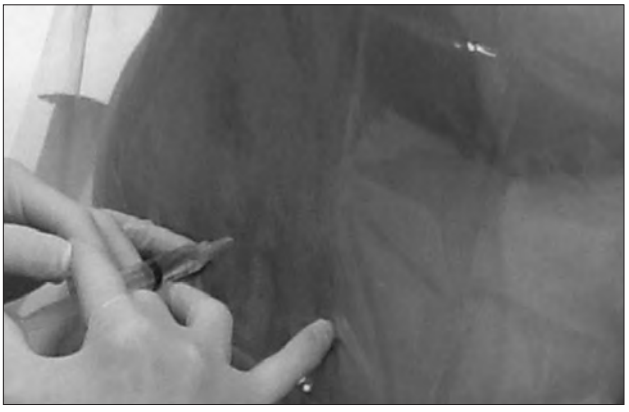


Fig. 3. We infiltrate the skin and subcutaneous tissue with lidocaine to the depth, by feel, of the interspinous ligament. The transiliac-crest level may actually identify the L3-4 level more often (77% of cases)[3] than the L4-5 level, even though the line radiographically correlates well with the L4-5 level.[2] Palpation and radiographic assessment may therefore differ in what levels are being identified, and identification of levels is affected by interobserver variability.[4] We identify the space where most symptoms arise clinically or radiographically. If a fusion or graft exists at that level, we generally go 1 level above and try to avoid surgical scars.

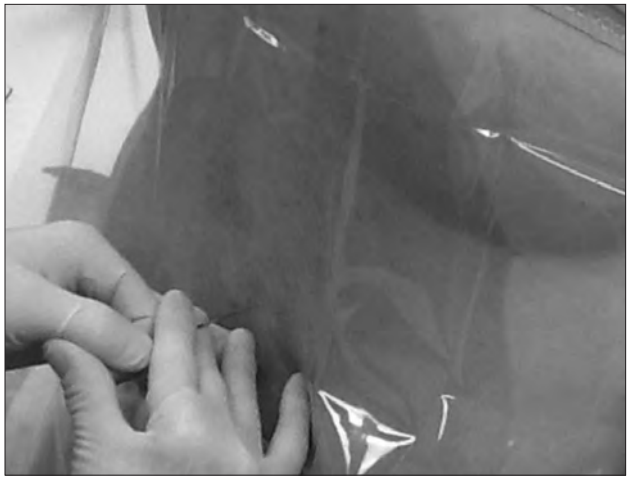
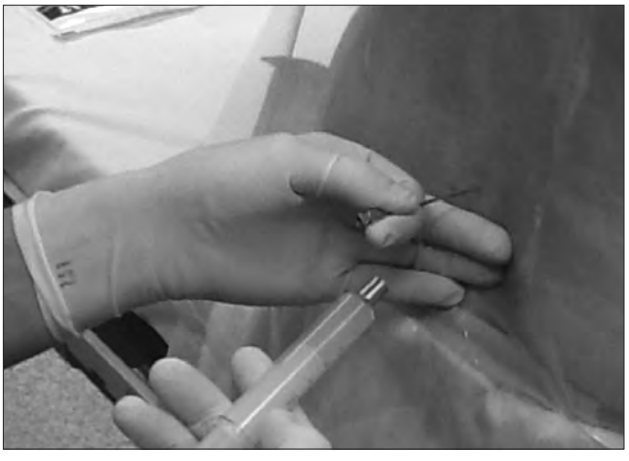


Fig. 4. With the use of the Tuohy needle (with obturator) along the same tract, the epidural space is identified by using loss-of-resistance technique with a glass syringe or specific epidural loss-of-resistance syringe (included in disposable epidural kits). Loss of resistance at a more superficial depth than the actual epidural space may occur in patients with long-standing osteoarthritis (and variable bony architecture). If you feel this is occurring, try injecting 1–2 mL normal saline. If you regain resistance, you are in soft tissue and not yet at the epidural space.

Fig. 5. Continue to safely advance the needle to find the epidural space with loss of resistance.



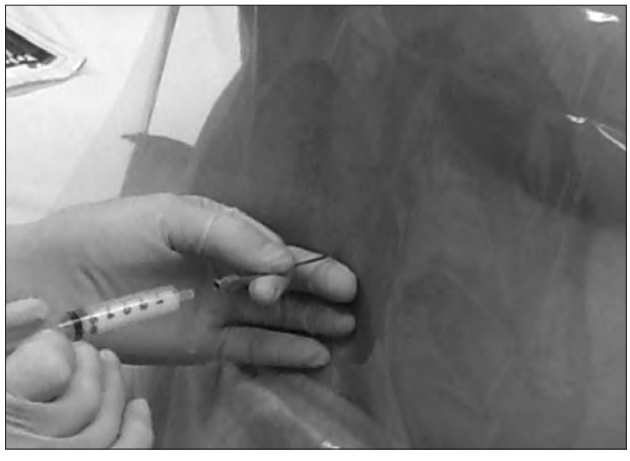


Fig. 6. Once the needle is correctly positioned, inject 80 mg methylprednisolone diluted to a total 5 mL solution with normal saline. Remove needle and apply a bandage.

fainting after procedures involving needles.

If the injection is effective, we typically see benefits within a few days and seldom encounter a "steroid flare." The relief of symptoms may last for months or longer. If the injection is initially effective and pain subsequently recurs, we consider a repeat injection at 3 months. We typically do not repeat injections that failed to relieve symptoms.

Competing interests: None declared.

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