Title: CERVICAL EPIDURAL STEROID INJECTION: A REPORT AND DESCRIPTION OF A NEW APPROACH

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Introduction. Two recent series report that cervical epidural steroid injections (CESI) are a safe and effective means for the treatment of cervical radiculopathies and neck pain syndromes.[1,2] The purpose of this study is to demonstrate that anesthesiologists trained only in lumbar epidural techniques may safely perform cervical epidural steroid injections and obtain good results. Also the use of the prone position for cervical epidural injection has not previously been described.

Methods. During a one year period, 171 CESI were performed on 130 patients who were then studied by a standard protocol. The injections were made by members of a private group of anesthesiologists and supervised residents. No person had previously performed a cervical epidural injection but were trained in the lumbar epidural technique. CESI were performed for the following indications: arthritis, spondylosis, acute cervical strain (<2months), bulging cervical disc syndrome, radiculopathy of nonspecific origin, and post-laminectomy syndrome.

The patients were placed in the prone position using a chest pillow to aid neck flexion. The C7 interspace was chosen, and a midline approach was used. A 17 gauge Tuohy needle employing the loss of resistance technique was used for all blocks. Ten to fifteen ml of lidocaine (0.5%) was mixed with either triamcinolone or methylprednisolone (80-160 mg). The solution was injected into the epidural space until the patient complained of pressure or tightness in the neck. This usually occurred after infusing 8-12 ml. An additional 2-6 ml was then injected over the next few minutes. Patients were contacted by phone at three days and again at six months. Pain relief was rated on a verbal analog scale: Excellent- >90% relief at 6 months; Good- >50% relief for six weeks; and poor- <50% relief. Forty-eight patients receiving 52 CESI have six month follow-up data available.

Results. Three complications occurred: one inadvertent dural puncture without sequelae, one episode transient bilateral arm weakness, and one episode of transient nausea and vomiting. Two side effects were frequently reported. Stiff neck or posterior headache of up to two days duration occurred following 15% of CESI. Secondly, a mild flushing and subjective fever lasting 24 hours occurred after 11% of CESI. Forty-eight patients have long term follow-up data available, and 73% of patients report good or better pain relief by our criteria.

Discussion. The ever present fear while performing cervical epidural injections is that spinal cord injury could occur with accidental dural puncture. In fact, there has never been a reported case of spinal cord damage from attempted cervical epidural injection. This study demonstrates that anesthesiologists trained in the lumbar epidural technique may safely and efficaciously perform CESI. The prone position for cervical epidural injection has never previously been described. The authors believe this to be a better choice than the sitting or lateral position for several reasons. First, patients are more easily and assuredly immobilized, especially while sedated. There is no swaying or forward/backward flinching. This facilitates a better "feel" with the advancing needle. Though a sitting patient would more likely jerk forward in response to pain, one could potentially rebound backwards on the needle. In contrast, a prone patient on a chest pillow with the neck flexed downward and arms overhanging the stretcher can only extend his neck. This would close the interspace impeding further advancement of the needle, and at the T1 interspace, the spinal cord would not appreciably move backward. Secondly, in the described position the cervical epidural space is lower than the injection site which should facilitate the cephalad spread of solution. Although gravity has minimal affect on injectate spread in the lumbar region, this may not be true in the cervical area with a sitting patient. The highly negative pressures of the epidural space may exaggerate the gravitational effect and "suck" the solution into the thoracic epidural space. Access to the patient was not found to be significantly impaired while standing to the side of the stretcher. This study demonstrates that the prone position is a safe and effective alternative to the sitting position for cervical epidural injection, and it may offer several advantages.

References.

1. Shulman M: Treatment of Neck Pain with Cervical Epidural Steroid Injection. Reg Anesth 11:92, 1986
2. Rowlingson JC, Kirschen LP: Epidural Analgesic Techniques in the Management of Cervical Pain. Anesth Analg 65:938, 1986