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### Proper Needle Size for Performing Cervical Epidural Injections

*To the Editor:*—The case report by Jackson and Rauck<sup>1</sup> describing possible air embolism complicating a therapeutic cervical epidural steroid injection in a sitting patient deserves comment.

Anesthesiologists must clearly differentiate the needles and techniques required for single-shot epidural injections from those used with continuous catheter epidural injections. For therapy in our Pain Clinic, unless a catheter is used in an attempt at breaking up epidural scarring, we cannot justify using a needle larger than 0.7 mm (22-G). With a loaded syringe attached, this needle is inserted through an introducer to identify and enter the epidural space. In the case described, the authors used a spade-tipped, 16-G Tuohy needle. With that needle, the tissue area vulnerable to injury is almost six times as large as with our technique (2.26 vs. 0.385 mm<sup>2</sup>). Thus, sequelae such as backache, headache from inadvertent dural puncture, and injuries to nerves, arteries, veins and other tissues will be more frequent and severe.

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*In Reply:*—We agree with Dr. Goffen that larger needles generally are more likely to cause greater injury to delicate structures such as arteries and nerves. However, for the following reasons we believe that 16-G Tuohy needles are appropriate for cervical epidural placement. Using the "hanging-drop technique" to identify the epidural space requires reliable transmission of the negative pressure through the needle to the hub. Increasing resistance through a needle's progressively smaller internal diameter will result in a loss of the sensitivity seen when the drop is drawn into the needle hub. It is our experience that using 18-G Tuohy needles results in less sensitivity than with 16-G needles, and thus it is our conclusion that using 22-G needles are even less useful.

Although it is certainly possible to identify the epidural space through the loss of resistance technique by using 22-G needles, this can be a source of complications. Also, to the best of our knowledge, a 22-G Tuohy needle is not available.

Certainly, an anesthetic procedure can result in acute complications. However, cervical epidural anesthesia is well documented in terms of

Our personal experience with thousands of epidural injections of all types during the past 45 yr indicates that therapeutic epidural steroid injections properly performed and instrumented to match the requirements should be relatively benign procedures. *Primum non nocere!*

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overall safety,<sup>1</sup> and we still believe that the technique of this procedure is easiest in the sitting position with at least a 16-18-G Tuohy needle.

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