

recapping used needles by hand.² If the clinical procedure necessitates recapping, alternative techniques are available to prevent two-handed recapping.³

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Are Today's Epidurals the 12% Solution?

To the Editor:—Do labor epidurals given to nulliparous women contribute to an increased likelihood of cesarean delivery, reported as 25% in the obstetric literature?¹ A randomized, controlled trial has demonstrated that some kind of "epidural" increased the incidence of cesarean delivery, as triggered by fetal distress, "arrest of

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cervical dilatation in the active phase of labor," "arrest of descent," or dystocia.¹

The anesthesia methods used for these patients treated between 1990 and 1992¹ are not those currently in use, and for that reason, the general conclusion of that study¹ is inapplicable to contemporary

Cesarean section vs epidurals

1989-94 Rates, by month

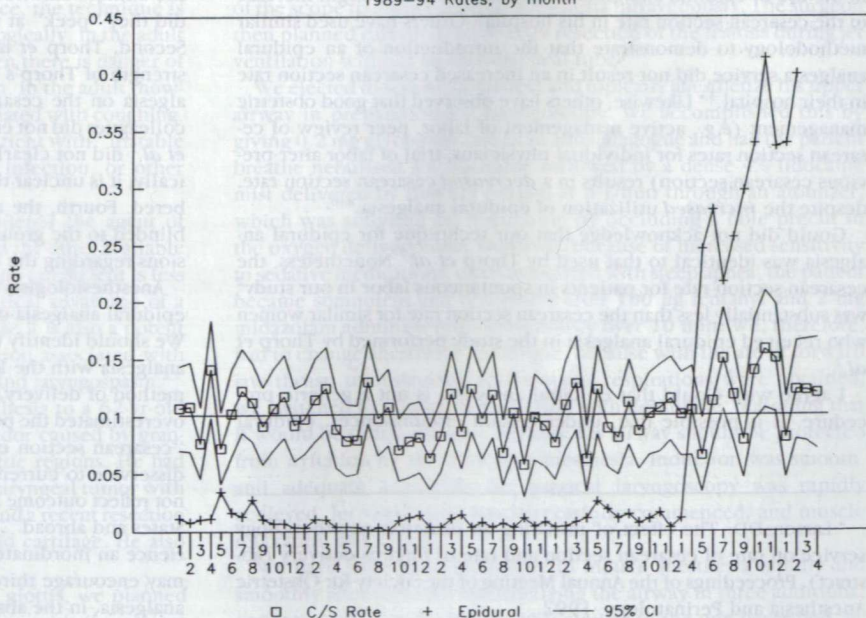


Fig. 1. Stable 10% cesarean section rate for 4 yr at St. Louis Regional Medical Center (squares) surrounded by 95% confidence intervals. Introduction of early labor epidural analgesia is associated with an average cesarean section rate of 12%. Use of labor epidurals (+) increased to about 45%.

practice. Decreasing the dose of bupivacaine from a 0.25% bolus/0.125% maintenance (as in the method of Thorp *et al.*¹) to a 0.1125% bolus/0.03–0.06% maintenance combined with opioid, Naulty *et al.* found a significant reduction of cesarean section rate to 10%.² Recently, two reports from Chestnut *et al.* described cesarean section rates of 18% and 19% for nulliparous women receiving oxytocin and epidural analgesia early and late in labor³ and 10% and 8% for nulliparous women in spontaneous labor given epidural analgesia early and late in labor.⁴ Similar to the local anesthetic regimen used by Thorp *et al.*, Chestnut *et al.* injected 0.25% bupivacaine followed by bupivacaine infusion of 0.125% and no opioid.^{3,4}

The overall incidence of cesarean section at our hospital, where 3,000 deliveries per year occur, had been 10%, with epidural treatment limited to some patients with hypertensive disorders of pregnancy. Since 1993, the introduction of routinely available epidural analgesia into general use for labor, as "early" as possible for each patient, the historical overall cesarean section rate at our hospital has increased to 12%, a *preliminary* change of statistical significance by chi-square analysis (fig. 1). This is less than any other major obstetrics center in Missouri; this is clinically acceptable. Our loading and maintenance doses of bupivacaine are 0.125% combined with epidural opioid, often butorphanol or fentanyl.

That Thorp *et al.*'s 45 nulliparous patients receiving intravenous meperidine and promethazine had but one cesarean section (2.2%) is impressive.¹ A specific comparison of the "best" dilute amide plus opioid labor epidural remains unavailable. Nevertheless, we are not

ready to refrain from offering epidural analgesia to nulliparous women in labor, with and without oxytocin augmentation.

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In Reply:—I appreciate Gould's interest in our two studies.^{1,2} Using the "catastrophe theory," Gould observed that a substantial increase in the use of epidural analgesia was associated with a slight increase in the cesarean section rate in his hospital. Others have used similar methodology to demonstrate that the introduction of an epidural analgesia service did not result in an increased cesarean section rate in their hospital.^{3–6} Likewise, others have observed that good obstetric management (e.g., active management of labor, peer review of cesarean section rates for individual physicians, trial of labor after previous cesarean section) results in a *decreased* cesarean section rate, despite the *increased* utilization of epidural analgesia.^{4–6}

Gould did not acknowledge that our technique for epidural analgesia was identical to that used by Thorp *et al.*⁷ Nonetheless, the cesarean section rate for patients in spontaneous labor in our study² was substantially less than the cesarean section rate for similar women who received epidural analgesia in the study performed by Thorp *et al.*⁷

I agree with Gould that epidural analgesia is not a generic procedure. It is possible that, under certain circumstances, epidural

analgesia may increase the risk for cesarean section in selected patients. The study by Thorp *et al.*⁷ was limited by several factors. First, the authors enrolled a small number of patients. How many times did they "peek" at their data during the performance of the study? Second, Thorp *et al.*⁷ included indigent patients only. Given the strength of Thorp's convictions regarding the effect of epidural analgesia on the cesarean section rate, it is curious that he and his colleagues did not enroll private patients in their study. Third, Thorp *et al.*⁷ did not clearly identify the method of randomization. Specifically, it is unclear that the sealed envelopes were sequentially numbered. Fourth, the authors of the study—who obviously were not blinded to the group assignment—assumed responsibility for decisions regarding the method of delivery.

Anesthesiologists should carefully evaluate the potential effects of epidural analgesia on the progress of labor and method of delivery. We should identify those techniques that provide the most effective analgesia with the least adverse effect on the progress of labor and method of delivery. Unfortunately, Thorp *et al.*⁷ have substantially overestimated the potential contribution of epidural analgesia to the "cesarean section epidemic."⁸ As a result, they have performed a disservice to current and future pregnant women. Their results do not reflect outcome at a variety of other medical centers in the United States and abroad. Thorp *et al.*⁷ have caused some women to experience an inordinate fear of epidural analgesia. Further, their study may encourage third-party payers to deny reimbursement for labor analgesia, in the absence of a so-called "medical indication."

* Larson DD: The effect of initiating an obstetric anesthesiology service on rate of cesarean section and rate of forceps delivery (abstract). Proceedings of the Annual Meeting of the Society for Obstetric Anesthesia and Perinatology, 1992.