Editorial

Epidural Anesthesia

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Pain during childbirth is universal and its history is timeless. (Genesis 3:16 To the woman He said, "I will greatly multiply your pain in childbirth, in pain you will bring forth children; . . .") The desire to reduce pain during labor and delivery is nearly as universal and has been a part of medical obstetrical practice for over 150 years.¹ In recent years, epidural anesthesia has become commonplace in many delivery suites, particularly in larger obstetrical services. In 1997, use of epidural ranged from 21% in hospitals with <500 births/year to 50% in hospitals with >1500 births/year.² A quick survey of the labor board in our institution suggests that the use of epidural exceeds 75%. A randomized controlled trial is not needed to assess the benefit of epidural; ask any group of women who have had a labor and delivery experience about the differences and the majority response is immediately clear.

But the issue of evaluating unintended effects of this technique is more complex. All practitioners who recommend or perform epidural anesthesia for relief of pain in labor are familiar with the common complications of the technique, including hypotension, high block, possible prolonged labor, possible increased instrumental delivery and/or cesarean delivery. Most believe that these problems can be controlled, or at least reduced, by judicious application of epidural. A more subtle problem is the occurrence of maternal fever specifically as a result of epidural anesthesia. Many factors influence the risk of fever in labor, including status of membranes, length of labor, concomitant obstetrical problems. Many women who initially decline epidural request one when labor becomes prolonged. It is not surprising that fever is more commonly attributed to the labor than to the anesthetic technique.

Gertie Marx pioneered many of the techniques used in anesthetic management of gravidas today. With Dolores Loew, she studied the effect of epidural anesthesia on maternal temperature, but did not find an effect, perhaps because of a small number of subjects.³ Since Fusi et al.⁴ reported an association of maternal

fever with use of epidural analgesia in 1989, most studies of maternal fever in labor conclude that epidural anesthesia is an independently associated factor. The data are strong enough to conclude that something about epidural anesthesia specifically causes maternal intrapartum fever, but the specific mechanism remains unknown. It is not clear whether this has an untoward effect on the mother or fetus; however, intrapartum fever is commonly a cause for neonatal sepsis evaluation and several studies note an increase in the number of neonatal sepsis evaluations among infants of women who received epidural anesthesia, although the actual incidence of sepsis is not changed.

The study by Goetzl et al.⁵ in the *Journal* presents a rational approach to averting fever related to epidural. Acetaminophen, the drug most commonly prescribed to treat fever, could reasonably be considered as prophylaxis to prevent fever after epidural administration. They conducted a well-designed, randomized placebo controlled, double-blinded trial of acetaminophen administration to nulliparas receiving epidural anesthesia. Management of labor never lends itself to optimal structure and control, but the authors identified and recorded major factors of labor that might bear on the incidence or etiology of fever during labor.

The interesting finding that the incidence of fever is not affected by acetaminophen administration emphasizes that more study is needed to determine the mechanism by which epidural anesthesia causes fever. The authors also studied interleukin-6 levels and found differences in patients receiving epidural; these findings are reported elsewhere and I encourage interested readers to examine that report.⁶ The authors appropriately discuss the limitations of this study, including the possibility of a trial of a higher dose of acetaminophen. Clearly, additional trials to confirm these findings would be reasonable, but these data provide useful information for the clinician who is concerned with this problem.

Epidural anesthesia is, in my opinion, our most effective intervention for relief of pain in labor. Progressive changes in anesthetic practice by our colleagues who have devoted themselves full-time to providing obstetrical anesthesia have improved the safety profile of this technique. But we must not become complacent. The current focus on patient safety mandates that we continue to critically evaluate all potential effects of our

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interventions and that we recognize that derivative outcomes, such as newborn fever workups, are a part of the risk profile that we must consider when we utilize this technique. Dr. Goetzl's study is another step in the process of refining our approach to the legitimate question of providing a safe and comfortable childbirth experience for both mother and baby.

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