



Epidural Analgesia: Is It increasing C-Section Rates?

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Suzanne's case

- At her second prenatal visit (18 weeks gestation) Suzanne tells you that she has a very low threshold for pain and that all her friends have had epidurals and loved them
- She quotes a *Globe and Mail* story about a study, reported in the *New England Journal of Medicine*, demonstrating that early epidurals do not increase the cesarean section rate¹
- She also tells you that though she is a feminist, she does not see any reason that she needs to be in pain to prove it
- She asks you to guarantee that she will have an epidural as soon as she goes into labour
- Suzanne's request is not unreasonable. Who would want pain if it could be avoided? Moreover, epidural analgesia (EA) is clearly the most effective form of pain relief²
- Unfortunately for Suzanne, EA is associated with a variety of unwanted side-effects

The side-effects that Suzanne may experience from undergoing a caesarean or C-section (CS) include:

- longer labors,
- increased incidence of maternal fever (with associated increase in maternal/newborn antibiotic use),³
- increased rates of operative vaginal delivery and
- perineal trauma,⁴⁻⁵ which include an increase in third- and fourth-degree tears.²

The current Cochrane meta-analysis, comparing epidural analgesia (EA) with narcotics, does not show an increase in the CS rate in association with EA.⁵ This is surprising because, in everyday practice, as well as in quality improvement exercises at the Department of Family Practice and Pediatrics, University of British Columbia, in Vancouver, epidural use certainly does seem to increase the CS rate, especially when it is used before the active phase of labour.⁶⁻⁷ In fact, it appeared that the increasing use of EA was transforming birth: 40% to 60% of Canadian women giving birth receive EA, placing it high on the list of major obstetrical interventions.

The Cochrane meta-analysis

Taking a closer look at the individual studies that make up the Cochrane meta-analysis,⁴ I found

that EA increased the first stage of labour by 4.3 hours and the second stage of labour by 1.4 hours. Malpositions were found in 15% of cases in the epidural arms, but in only 7% of cases in the narcotic arms. Oxytocin increased by 52% among women in the epidural arms and 7% of in the narcotic arms. In fact, all the studies in the Cochrane meta-analysis showing no increase in the CS rate had randomized their patients before 4 cm to 5 cm dilation—or, the active phase of labour.

The problem became clear when I performed a sensitivity analysis, retaining only those studies that randomized patients before the active phase of labour. When this was done, the odds ratio for the remaining studies was 2.59 (95% confidence intervals, 1.29 to 5.23), indicating that if women receive an epidural before dilating 4 cm to 5 cm, there is more than twice the likelihood of receiving CS.⁹

The study that Suzanne referred to is an

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example of the misuse or misinterpretation of randomized controlled trials of EA.¹⁰ The author, the editorialist and the press reported that women should not worry that an early epidural will lead to an increased likelihood of CS—except, this trial was not about early epidural use! It was about two methods of helping women with the pain of early labour. In the so-called epidural arm, at first request for analgesia, women received intrathecal fentanyl; in the narcotic arm, hydromorphone. At that point, women in both arms already had a 75% utilization rate of oxytocin augmentation—so high as to be non-generalizable to usual settings. On second request for pain relief, two-thirds

of the women in both arms were ≥ 4 cm dilated or in the active phase of labour. At this advanced state, the intrathecal (epidural) arm received low dose epidural, while the narcotic arm received hydromorphone. This study, like others randomizing late, has shown only that when women's latent-phase pain is managed with intrathecal narcotic or other pharmacological or non-pharmacological means, EA in the active phase of labour does not increase the CS rate.

Collateral damage

Inadvertently, the Cochrane meta-analysis has had the consequence of increasing epidural use and as a result:

- more continuous electronic fetal monitoring, keeping women in bed (usually with intravenous EA)
- more instrumentation,
- perineal trauma,
- an increase in the CS rate and
- likely, feelings of failure that the desired method of birth was not achieved.

Also, it will have led, due to the greater number of CS procedures, to an increase of:


- problems in placentation in the next pregnancy (placenta previa, accrete, percreta, abruption),
- infertility and
- ectopics.

This contributes to the technicalization of childbirth, leading to the suggestion that, since childbirth is already so “unnatural,” that CS on request is not such an unreasonable idea,¹¹ a surgical solution for a non-surgical problem.¹²

Concluding thoughts (and what about Suzanne?)

Meta-analysis can be helpful and time-saving, but we need to ask ourselves if the meta-analysis makes *clinical* sense. Unfortunately, we need to read the individual studies that make up the meta-analysis—especially if they have the propensity to actually change practice—to determine if study conditions represent our clinical reality.

If Suzanne's physician goes over the

evidence, she can be reassured that she will be helped to get to 4 cm to 5 cm dilation by a variety of pain relief modalities. Nevertheless, some women and some labours will require early epidural use. And those women should receive what they need. However, routine early use of EA will increase the CS rate, as well as a cascade of other interventions. Suzanne deserves nothing less than truly informed decision-making. 

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