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EDITORIAL

Elective cesarean delivery: when is it justified?

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There has been much recent debate regarding the optimal mode of delivery. In a clinical commentary in the *New England Journal of Medicine*, the risks and benefits of elective primary cesarean delivery to both the mother and neonate were discussed.[1] While a small number of neonates may benefit from elective cesarean delivery, the woman undergoing cesarean incurs increased surgical risk. In addition, there are increased risks to both the mother and neonate in subsequent pregnancies. Trials of labor after cesarean and elective repeat cesareans both carry increased risks.[2,3] Further, the risk of intrauterine fetal demise may be higher in women with a prior cesarean delivery.[4]

When we offer a cesarean delivery to women, we do so after weighing the risks and benefits to both the mother and the neonate inherent to the procedure. For example, among women with a breech presenting fetus or primary genital herpes infection, the benefits from a cesarean delivery likely outweigh the risks of attempting a vaginal birth.[5] Conversely, there is not overwhelming evidence to suggest that routine cesarean delivery optimizes the combined neonatal and maternal outcomes among women with no other risk factors.

In the current edition of the Journal of Perinatology, Yang *et al*.[6] in their paper *Neonatal mortality and morbidity in vertex-vertex second twins according to mode of delivery and birth weight* report that neonatal outcomes are improved for the second twin when both neonates undergo cesarean birth as compared to vaginal delivery of the first twin. In a retrospective cohort study of vertex-vertex twins using linked birth certificate data from the United States, the authors found that among second twins <1500 g and >2500 g, the adjusted neonatal mortality was lower among those delivered via cesarean for both neonates. Not surprisingly, among neonates >2500 g, the largest difference in mortality was demonstrated when the second twin delivered via emergent cesarean following vaginal birth of the first twin. However, a small, but statistically significant difference in mortality also existed for those second twins delivered vaginally when compared to the setting of both twins delivered via cesarean.

The most important question to ask in light of these findings 'should all twins be delivered via cesarean?' Our response should be, 'we don't know, yet.' Certainly, these data are intriguing, but such a decision should be based on rigorous study design and the import of the findings. The data for this study is from a national birth certificate database, thus the study's findings should be suggestive, not definitive. In the post-WHI era of women's health research, the drastic recommendation of routine cesarean delivery deserves the gold standard of research study design, the prospective, randomized trial. Only from such a trial can we truly determine whether mode of delivery is causally linked to neonatal outcomes.

Even in the setting of a rigorously designed study, the question still remains how much improvement in neonatal outcomes need to be demonstrated in order to justify the maternal risks from a cesarean delivery? To this question, there is no definitive answer, but certainly we do not routinely recommend a cesarean delivery in singleton gestations even though it would reduce the small risks of untoward events of labor and delivery such as placental abruption, cord prolapse, and shoulder dystocia. In spite of this, it appears that such elective cesarean deliveries are on the rise in the United States. In response to this trend, I believe those obstetricians who choose to practice evidence-based medicine should continue to avoid elective cesarean deliveries until further evidence regarding the trade-offs between the neonate and mother comes to light. We should demand prospective trials to assess the outcomes from a procedure that is performed more than a million times per year in the United States. Only with such evidence shall we be able to determine what the true tradeoffs are and be able to counsel women regarding their options of mode of delivery.

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References

1 Minkoff H, Chervenak FA. Elective primary cesarean delivery. *N Engl J Med* 2003; **348**: 946–950.

2 McMahon MJ, Luther ER, Bowes WA, Olshan AF. Comparison of a trial of labor with an elective second cesarean section. *N Engl J Med* 1996; **335**: 689–695.

3 Landon MB, Hauth JC, Leveno KJ, Spong CY, Leindecker S, Varner MW *et al.* Maternal and perinatal outcomes associated with a trial of labor after prior cesarean delivery. *N Engl J Med* 2004; **351**: 2581–2589.

4 Smith GC, Pell JP, Dobbie R. Caesarean section and risk of unexplained stillbirth in subsequent pregnancy. *Lancet* 2003; **362**: 1779–1784.

5 Hannah ME, Hannah WJ, Hewson SA, Hodnett ED, Saigal S, Willan AR. Planned caesarean section versus planned vaginal birth for breech presentation at term: a randomised multicentre trial. *Lancet* 2003; **356**: 1375–1383.

6 Yang Q, Wen SW, Chen Y, Krewski D, Fung KFK, Waker M. Neonatal mortality and morbidity in vertex-vertex second twins according to mode of delivery and birth weight. *J Peri* 2005.