

EDITORIAL

Forceps delivery: potential benefits and a call for continued training

Journal of Perinatology (2007) 27, 327–328; doi:10.1038/sj.jp.7211735

Obstetricians, charged with providing optimal care for women and their babies, are at a crossroads. The cesarean delivery rate continues to increase in the United States, with 30.2% of all births in 2005 via cesarean.¹ In addition, the primary cesarean rate, 20.6% of all deliveries in 2004, continues to climb, continuing the trend of annual 5% increases.² More than 20% of cesarean deliveries for dystocia are performed during the second stage of labor.³ Operative vaginal deliveries comprise approximately 9 to 12% of all deliveries, with decreasing frequency in recent reports.^{4–6} Importantly, operative vaginal delivery, using a single instrument, affords no increased risk of major neonatal injury compared with cesarean. For instance, in a study of nearly 600 000 births in California, intracranial hemorrhage was not increased in neonates delivered by forceps or vacuum compared with those delivered by cesarean.⁶

Operative vaginal delivery, however, is not without risk of maternal morbidity. Risk of third or fourth degree perineal laceration is increased with operative vaginal delivery.⁷ Less clear are the risks of urinary and fecal incontinence in those undergoing operative vaginal delivery compared with cesarean during the second stage of labor. Although vaginal delivery appears to increase the risk of incontinence in the short-term postpartum period, it is not clear whether the increased risk persists throughout a woman's lifetime.^{8–11} Thus, increased risk of maternal soft tissue injury and an unclear risk of incontinence must be weighed against the known risks of cesarean. Compared with vaginal birth, cesarean has been linked to longer hospitalization, increased risks of thromboembolism and infection, and higher rates of postpartum maternal death.¹² In addition, women with a primary cesarean who plan on future children are more than 90% likely to deliver via repeat cesarean with its concomitant risks.² Further, in these subsequent pregnancies, there are increased risks of placenta previa and unexplained intrauterine fetal death (IUFD).^{13,14} Thus, without neonatal benefit and the potential for increased morbidity from repeat cesarean delivery, operative vaginal delivery may confer the least maternal and neonatal risk.

The choice of instrument for operative vaginal delivery is determined by several factors, including concern for maternal and neonatal morbidity, chance of success and operator expertise.

Vacuum-assisted deliveries are associated with increased rates of neonatal cephalohematoma and retinal hemorrhage.⁷ Further, it has been noted that the rate of shoulder dystocia is higher with vacuum-assisted deliveries.^{15,16} In addition, the chance of a failed operative delivery using vacuum is almost two times greater than with forceps.⁷ Despite all of these considerations, it may be the last one, operator expertise, which ultimately determines the instrument of choice for many clinicians. Likely owing to this last factor, the proportion of operative vaginal deliveries which are forceps has fallen over the past decade.^{4–6}

In this issue of the *Journal of Perinatology*, Dr Powell *et al.*¹⁷ report that only about half of graduating fourth year residents responding to a survey felt competent in forceps-assisted deliveries. Interestingly, the vast majority of respondents wished to be further trained to perform forceps deliveries. However, whereas more than 80% of respondents stated that most of their attending physicians would teach the use of the vacuum, only one-third of respondents reported that most of their attending physicians would teach the use of forceps. We assert that these statistics are unacceptable and will not guarantee a generation of skilled practitioners with the tools necessary to deliver optimal obstetrical care, which is in our patients' best interest. We would equate the inadequacy of such training to surgical residents not being trained in laparoscopy or radiologic residents not being trained to read an MRI. In both cases there are other technologies or options of care available but, depending on the clinical scenario, one particular technique may prove optimal. For residency programs where only a minority of attending physicians are capable to teach the use of forceps, we recommend the use of sophisticated simulators for residents to become comfortable with the basics of forceps application and traction. We have a duty to women to train obstetricians skilled in the art of operative vaginal delivery to help staunch the increasing trend toward cesarean delivery for all but the most straightforward vaginal deliveries.

BL Shaffer and AB Caughey
*Department of Obstetrics, Gynecology and Reproductive
Sciences, University of California, San Francisco, CA, USA*
E-mail: abcmd@berkeley.edu

References

- 1 Hamilton BE, Martin JA, Ventura SJ. Births: preliminary data for 2005. *National Vital Statistics Reports*, Vol. 55. Hyattsville, MD: National Center for Health Statistics, 2006.
- 2 Martin JA, Hamilton BE, Sutton PD, Ventura SJ, Menacker F, Kirmeyer S. Births: final Data for 2004. *National Vital Statistics Reports*, Vol. 55, No. 1. Hyattsville, MD: National Center for Health Statistics, 2006.
- 3 Gifford DS, Morton SC, Fiske M, Keesey J, Keeler E, Kahn KL. Lack of progress in labor as a reason for cesarean. *Obstet Gynecol* 2000; **95**: 589–595.
- 4 Kozak LJ, Dawson JD. US trends in obstetric procedures 1990–2000. *Birth* 2002; **29**: 157–161.
- 5 MacDorman MF, Atkinson JO. Infant mortality statistics from the 1997 period linked birth/infant death data set. *Natl Vital Stat Rep* 1999; **47**: 1–23.
- 6 Towner D, Castro MA, Eby-Wilkens E, Gilbert WM. Effect of mode of delivery in nulliparous women on neonatal intracranial injury. *N Eng J Med* 1999; **23**: 1709–1714.
- 7 Johanson RB, Menon V. Vacuum extraction versus forceps for assisted vaginal delivery. *Cochrane Database Syst Rev* 1999; **2**: 1–25.
- 8 Hannah ME, Hannah WJ, Hodnett ED, Chalmers B, Kung R, Willan A, *et al*. Outcomes at 3 months after planned cesarean vs. planned vaginal delivery for breech presentation at term: the international randomized Term Breech Trial. *JAMA* 2004; **287**: 1822–1831.
- 9 Hannah ME, Whyte H, Hannah WJ, Hewson S, Amankwah K, Cheng M *et al*. Maternal outcomes at 2 years after planned cesarean section versus planned vaginal birth for breech presentation at term: the international randomized Term Breech Trial. *Am J Obstet Gynecol* 2004; **191**: 917–927.
- 10 Schraffordt Koops SE, Versvest HAM, Oostvogel HJM. Anorectal symptoms after various modes of vaginal delivery. *Int Urogynecol J* 2003; **14**: 244–249.
- 11 Varma MG, Brown JS, Creasman JM, Thom DH, Van Den Eden SK, Beattie MS *et al*. Fecal incontinence in Females older than aged 40years: who is at risk? *Dis Colon Rectum* 2006; **49**: 841–851.
- 12 Deneux-Tharaux C, Carmona E, Bouvier-Colle MH, Breart G. Postpartum maternal mortality and cesarean delivery. *Obstet Gynecol* 2006; **108**: 541–548.
- 13 Getahun D, Oyelese Y, Salihu HM, Ananth CV. Previous cesarean delivery and risks of placenta previa and placental abruption. *Obstet Gynecol* 2006; **107**: 771–778.
- 14 Smith GCS, Pell JP, Dobbie R. Cesarean section and risk of unexplained stillbirth in subsequent pregnancy. *Lancet* 2003; **362**: 1779–1784.
- 15 Caughey AB, Sanberg PL, Zlatnik MG, Thiet MP, Parer JT, Laros RK. Forceps compared with Vacuum: rates of neonatal and maternal morbidity. *Obstet Gynecol* 2005; **106**: 908–912.
- 16 Demissie K, Rhoads GG, Smulian JC, Balasubramanian BA, Gandhi K, Joseph KS *et al*. Operative vaginal delivery and neonatal and infant adverse outcomes: population based retrospective analysis. *BMJ* 2004; **329**: 1–6.
- 17 Powell J, Gilo N, Foote M, Gil K, Lavin J. Vacuum and forceps training in residency: experience and self reported competency. *J Perinatol* 2007, in press.