



Elective Cesarean Surgery Versus Planned Vaginal Birth: What Are the Consequences?

“If fifty million people say a foolish thing, it is still a foolish thing.” – Anatole France

Over the past few years, far from expressing alarm over the soaring cesarean rate, a growing number of U.S. obstetricians have begun claiming that the potential harms of planned cesarean surgery and planned vaginal birth are so balanced that it should be left up to women to choose between the two. Let us examine whether the claim is, in fact, true. Using research data on the incidence of complications, *let us follow two hypothetical populations, each consisting of 100,000 healthy, low-risk first-time mothers, through three pregnancies, comparing outcomes based on whether they have elective cesarean surgery for the first delivery or plan vaginal birth.* Keep in mind that the rates of a number of serious and life-threatening complications for mothers and babies continue to rise with accumulating cesarean surgeries (Makoha 2004; Seidman 1994; Silver 2004). This is a vital concern for women planning large families.

Assumptions are as follows:

- All women are healthy and are carrying healthy, full-term babies at the point at which they either have their planned surgery or begin labor.
- All women having elective cesarean surgery for the first delivery, whether planned or unplanned, will continue having planned cesarean surgeries for the subsequent two deliveries.
- In the planned vaginal birth group, 10,000 women will have an unplanned cesarean. The actual rate among low-risk, first-time mothers in the U.S. was 23.6% —1 in 4—in 2003 (Menacker 2005), but studies show that a cesarean rate of 10% or less is achievable in this population with care supportive of normal birth (Johnson 2005; Rooks 1989).
- All women having vaginal birth at the first birth will go on having vaginal births for the subsequent two births. The rate of first cesareans in women with prior vaginal births should be a minor perturbation.

With elective cesarean surgery (see separate document entitled “Data Tables and Supporting Information”):

- 57 more women will die
- 999 more women will have a hysterectomy
- 135 more women will have a uterine rupture and 7 babies will die
- 63 more women will have a cesarean-scar ectopic pregnancy
- 45,900 more women will have dense adhesions (adhesions make subsequent pelvic or abdominal surgery more difficult, increase the likelihood of injuring organs or blood vessels during surgery, and can cause chronic pain and bowel obstruction)
- 13,500 more women will experience wound (abdominal vs. perineal) pain for 6 months or more

- 378 more babies will die in the womb (antepartum fetal demise) without explanation after 34 weeks of pregnancy
- 7,830 more babies will be born preterm (before 37 weeks completed gestation)
- 1,620 more babies will be born weighing in the lowest 5% for their gestational age
- 4,244 more babies will have respiratory problems serious enough to require admission to intensive care

- 3,240 fewer women will have anal sphincter trauma (This assumes an anal sphincter injury rate of 1%, a rate achievable with optimal care [Albers 2005].) BUT
- 630 more women will have bladder injury
- 10,260 fewer women will have moderate to severe urinary incontinence BUT
- 0 fewer women will have later-life urinary incontinence (MCA 2004)

According to a recent systematic review of the research comparing the harms of cesarean delivery versus vaginal birth, women having planned cesarean surgery are also more likely to experience infection, deep venous clots (these can break loose causing pulmonary embolism or stroke), worse physical and emotional health, longer recovery, readmission to the hospital, and other problems (MCA 2004). Babies are at excess risk of being cut during surgery, developing asthma, and being born with a congenital malformation or central nervous system injury if the mother has had a prior cesarean or cesareans (MCA 2004).

In fact, looking at just the excess reproductive risks: infertility, ectopic pregnancy, stillbirth, preterm birth, small for gestational age, malformation, central nervous system injury, it becomes clear that the scarred uterus and the presence of surgical adhesions make a much less hospitable environment for nurturing future babies.

When reviewing these numbers, keep in mind that for almost all outcomes, results may represent a “best case” scenario for elective cesarean for the following reasons:

- Most of the harms of cesarean section are intrinsic to having surgery. Some advantage may be gained by having a planned cesarean over an unplanned cesarean; nonetheless, residual risks remain compared with vaginal birth. Moreover, regardless of whether the surgery was planned, the woman is left with a uterine scar and possibly surgical adhesions. By contrast, many elements of conventional vaginal-birth management can be modified. They offer no benefits when used routinely or frequently and minimizing their use will reduce the likelihood of cesarean section; the incidence of complications such as hemorrhage, preterm birth, fetal distress or birth injury; and the risk of pelvic floor injury or weakness (references supplied on request). These include:
 - inducing labor,
 - setting arbitrary time limits for making progress
 - failing to provide continuous labor support by a trained or experienced woman (doula)
 - continuous electronic fetal monitoring,
 - epidural analgesia,
 - directed pushing,
 - pushing and giving birth while lying on the back,
 - fundal pressure (pressing on the mother’s belly to help expel the baby),
 - episiotomy,
 - vaginal instrumental delivery.
- Vaginal birth comparison groups included all women, not just low-risk women. Most adverse outcomes will occur in high-risk women.
- The source for cesarean deaths reported deaths directly related to surgery; the source for deaths associated with vaginal birth reported on all vaginal deliveries resulting in live births. As mentioned in the previous bullet, inclusion of high-risk women in the vaginal birth group will exaggerate the risks. In addition, neither source captures maternal deaths from cesarean related complications that occur early in subsequent pregnancies (e.g., ectopic pregnancy), may not result in a live birth (e.g., placental abruption, placenta accreta, placenta previa, scar rupture) or occur months or years after the cesarean (e.g., bowel obstruction caused by surgical adhesions).
- In some cases, incidence rates used in calculations underestimate the true risks of elective cesarean or overestimate the true risks of vaginal birth. (See notes in separate document entitled “Data Tables and Supporting Information.”)

Precepts of autonomy demand that women have the right to give their consent or refusal to any obstetric procedure, but there is a difference between making a choice and making an informed choice. It is unconscionable in any discussion of the comparative harms of elective cesarean versus planned vaginal birth to mislead women into thinking that cesarean surgery will not expose them and their babies to potentially severe consequences. It is equally unconscionable to give women the misimpression that the potential harms of cesarean surgery are counterbalanced by its protection of the pelvic floor. Beyond the first few months, there is at most a 4% excess chance of developing bothersome urinary incontinence with vaginal birth. Misrepresenting this fact is more troubling when one considers that the risk of incontinence can be minimized by better management of vaginal birth, that incontinence can be improved or relieved by no-risk strategies such as losing weight or pelvic floor exercises, and that differences disappear with aging. Indeed, ethics aside, it makes no logical sense to recommend prophylactic surgery for a condition for which only a small percentage of women may later want or require reparative surgery.

There are those who will dispute these numbers in an attempt to make elective cesarean section look more benign. But no amount of spin will eliminate the fact that some excess number of mothers and babies will die or be seriously harmed as a result of avoidable surgery. Even one excess death or instance of severe complications is too many in such a case. If the goal is to achieve optimal maternal-child outcomes, the best way to achieve it is by improving care during vaginal birth, not substituting major abdominal surgery.

Reference List

Albers, L. L., Sedler, K. D., Bedrick, E. J., Teaf, D., & Peralta, P. (2005). Midwifery care measures in the second stage of labor and reduction of genital tract trauma at birth: A randomized trial. *J Midwifery Womens Health, 50*(5), 365-372.

Declercq, E., Sakala, C., Corry, M. P., Applebaum, S., & Risher, P. (2002) *Listening to Mothers: Report of the first national U.S. Survey of women's childbearing experiences*. New York, NY: Maternity Center Association.

Forna, F., Miles, A. M., & Jamieson, D. J. (2004). Emergency peripartum hysterectomy: A comparison of cesarean and postpartum hysterectomy. *Am J Obstet Gynecol, 190*(5), 1440-1444.

Groutz, A., Rimon, E., Peled, S., Gold, R., Pauzner, D., Lessing, J. B., et al. (2004). Cesarean section: Does it really prevent the development of postpartum stress urinary incontinence? A prospective study of 363 women one year after their first delivery. *Neurourol Urodyn, 23*(1), 2-6.

Guisse JM, McDonagh M, Hashima JN, et al. Vaginal birth after cesarean (VBAC) Report/Technology Assessment No. 71. Rockville, MD: Agency for Healthcare Research and Quality March 2003. Report No.: AHRQ Publication No. 03-E018.

Harper, M. A., Byington, R. P., Espeland, M. A., Naughton, M., Meyer, R., & Lane, K. (2003). Pregnancy-related death and health care services. *Obstet Gynecol, 102*(2), 273-278.

Johnson, K. C., & Daviss, B. A. (2005). Outcomes of planned home births with certified professional midwives: Large prospective study in North America. *BMJ, 330*(7505), 1416.

Jurkovic, D., Hillaby, K., Woelfer, B., Lawrence, A., Salim, R., & Elson, C. J. (2003). First-trimester diagnosis and management of pregnancies implanted into the lower uterine segment cesarean section scar. *Ultrasound Obstet Gynecol, 21*(3), 220-227.

Levine, E. M., Ghai, V., Barton, J. J., & Strom, C. M. (2001). Mode of delivery and risk of respiratory diseases in newborns. *Obstet Gynecol, 97*(3), 439-442.

Lydon-Rochelle, M., Holt, V. L., Easterling, T. R., & Martin, D. P. (2001). Risk of uterine rupture during labor among women with a prior cesarean delivery. *N Engl J Med, 345*(1), 3-8.

Lyell, D. J., Caughey, A. B., Hu, E., & Daniels, K. (2005). Peritoneal closure at primary cesarean delivery and adhesions. *Obstet Gynecol, 106*(2), 275-280.

Makoha, F. W., Felimban, H. M., Fathuddien, M. A., Roomi, F., & Ghabra, T. (2004). Multiple cesarean section morbidity. *Int J Gynaecol Obstet, 87*(3), 227-232.

Maternity Center Association. What every pregnant woman needs to know about cesarean section. (2004) New York: Maternity Center Association; July 2004. *Note:* Methods and sources for the preceding consumer booklet are available from the Maternity Center Association. Access evidence tables at <http://www.maternitywise.org/cesareanbooklet/>. Current URLs for each document are: <http://www.maternitywise.org/pdfs/cesareanbooklet.pdf>; http://www.maternitywise.org/pdfs/methods_sources.pdf; <http://www.maternitywise.org/pdfs/tablesA-C.pdf>; <http://www.maternitywise.org/pdfs/tablesD-F.pdf>.

Menacker, F. (2005). Trends in cesarean rates for first births and repeat cesarean rates for low-risk women: United states, 1990-2003. *Natl Vital Stat Rep*, 54(4), 1-8.

Phipps, M. G., Watabe, B., Clemons, J. L., Weitzen, S., & Myers, D. L. (2005). Risk factors for bladder injury during cesarean delivery. *Obstet Gynecol*, 105(1), 156-160.

Rageth, J. C., Juzi, C., & Grossenbacher, H. (1999). Delivery after previous cesarean: A risk evaluation. Swiss working group of obstetric and gynecologic institutions. *Obstet Gynecol*, 93(3), 332-337.

Rooks, J. P., Weatherby, N. L., Ernst, E. K., Stapleton, S., Rosen, D., & Rosenfield, A. (1989). Outcomes of care in birth centers. The National Birth Center Study. *N Engl J Med*, 321(26), 1804-1811.

Schuitmaker, N., van Roosmalen, J., Dekker, G., van Dongen, P., van Geijn, H., & Gravenhorst, J. B. (1997). Maternal mortality after cesarean section in the Netherlands. *Acta Obstet Gynecol Scand*, 76(4), 332-334.

Seidman, D. S., Paz, I., Nadu, A., Dollberg, S., Stevenson, D. K., Gale, R., et al. (1994). Are multiple cesarean sections safe? *Eur J Obstet Gynecol Reprod Biol*, 57(1), 7-12.

Silver, R. (2004). The MFMU cesarean section registry: Maternal morbidity associated with multiple repeat cesarean delivery. *Am J Obstet Gynecol*, 191(6 supp 1), S17.

Smith, G. C., Pell, J. P., & Dobbie, R. (2003). Cesarean section and risk of unexplained stillbirth in subsequent pregnancy. *Lancet*, 362(9398), 1779-1784.