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CLINICAL OPINION

Myth of the ideal cesarean section rate: Commentary and historic perspective

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Attempts to define, or enforce, an "ideal" cesarean section rate are futile, and should be abandoned. The cesarean rate is a consequence of individual value-laden clinical decisions, and is not amenable to the methods of evidence-based medicine. The influence of academic authority figures on the cesarean rate in the US is placed in historic context. Like other population health indices, the cesarean section rate is an indirect result of American public policy during the last century. Without major changes in the way health and maternity care are delivered in the US, the rate will continue to increase without improving population outcomes.

Since the earliest days of the modern cesarean section—the 1880s—there has raged within the profession a debate about the appropriate indications for this operation.[1,2] For several decades after the availability of antibiotics and blood banking, the cesarean section rate in the US remained in the 4% to 6% range. Between 1968 and 1978, the rate tripled to 15.2%, and discussion of cesarean section moved permanently into the public domain. A 1981 report commissioned by the National Institutes of Health (NIH) expressed concern about the rising rate, and its recommendations for reducing cesareans included qualified support for VBAC.[3] By the 1990s, individual hospital cesarean section and VBAC rates were being published, and interpreted by consumer groups as indicators of obstetric care quality. In 1991, the Healthy People 2000 initiative advocated a 15% cesarean rate as a US health promotion objective by the year 2000.[4]

Despite expert and lay opinion that many cesareans are unnecessary, the rate continues to increase in the US—exceeding 27% in 2004—and shows no sign of abating.[5,6] Indeed, there is growing discussion and acceptance of patient-choice cesarean section as a legitimate birth option.[7,8] A recent editorial opined that "It's time to target a new cesarean delivery rate."[9]

It is the premise of this essay that attempts to define, or enforce, an "ideal" cesarean section rate are futile, and should be abandoned. It will be argued that the cesarean rate is a consequence of individual value-laden clinical decisions, and that it is not amenable to the methods of evidence-based medicine. The influence of academic authority figures on the cesarean rate in the US will be placed in historic context. Like other population health indices, the cesarean section rate is an indirect result of American public policy during the last century. Without

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The cesarean section rate—Historic perspective

Until Sänger standardized a technique for the "classical" operation in the early 1880s, cesarean section was a procedure of last resort in cases of absolute cephalopelvic disproportion—with maternal mortality rates exceeding 80%. The application of surgery to midwifery attracted bold and ambitious personalities, and early reports reflected the views of enthusiasts. Thus, Noble (Philadelphia) could write in 1893 "…the cesarean section done by the expert before or early in labor is scarcely more dangerous than the average of labors as at present conducted in our great cities."[10] Contemporary critics pointed out that the operation was far more dangerous in the hands of the occasional operator—often summoned to perform a cesarean after failed attempts at vaginal delivery.[1]

By the early 1900s, maternal mortality following elective cesarean section had decreased to 3% to 4% in specialty hospitals. Abdominal delivery was now being performed for placenta previa, eclampsia, and often by the earnest wish of the mother to have a living child at any risk. Reynolds (Boston) created a stir in 1906 by advocating elective cesarean "in an exceedingly small class of overcivilized women in whom the natural powers of withstanding pain and muscular fatigue are abnormally deficient."[11]

Despite such rhetoric, the weight of authority in the matter of cesarean section was on the side of conservatism until quite recently. Academic leaders preached, as did Williams, that "the excellence of an obstetrician should be gauged not by the number of cesareans which he performs, but rather by those which he does not do."[12] Forged during the pre-antibiotic, pre-transfusion era, this view naturally reflected a greater concern for maternal over fetal well-being. J. Whitridge Williams—through his position as obstetrician-in-chief at Johns Hopkins (1899-1931), his eponymous textbook, his former residents, and the force of his personality—was the most influential protagonist in this debate. Early in his career, he had championed the wider use of cesarean section as a safer alternative than craniotomy, symphysiotomy, or high forceps in cases of cephalopelvic disproportion. Williams later became a formidable curmudgeon, using every forum to deplore the elective use of episiotomy, forceps, induction, and podalic version.[13] However, he reserved his most scathing comments for those who advocated widening the indications for cesarean section. Discussing an article by Davis (Philadelphia) in 1919, he stated "Anybody who can use his hands and has a few tools can do a cesarean section…I take much more pride in getting my borderline cases through spontaneously than I do opening their abdomens."[13]

By insisting that disproportion was the only legitimate indication for cesarean section, Williams maintained a cesarean rate of 0.9% between 1900 and 1921.[14,15] Knowing that the maternal risk of cesarean increased in proportion to the duration of labor—yet unwilling, as a matter of principle, to forego a trial of labor in borderline cases—he achieved respectable mortality rates only by performing hysterectomy after 31% of his operations. For 30 years, Williams exerted a near monopoly in filling the nation's major chairs of obstetrics and gynecology,[16] and his legacy kept the cesarean rate low for decades after his death in 1931.

Defining an ideal cesarean section rate

Although, as Cosgrove (New Jersey) observed in 1939, "no case should ever be decided with one eye on the statistics of the hospital," academic obstetricians have long offered opinions about the ideal cesarean section rate.[17] During the late 1940s, Plass (Iowa)—who trained under Williams—believed that 4% to 5% was close to the ideal rate of cesarean section.[18] Not surprisingly, this was the incidence that prevailed on his teaching wards, and in those of most large hospitals during that period. It was an open secret, however, that the indications for cesarean were more liberal on the private service—with rates rumored to be as high as 15%.[19] In 1995, 23 experts agreed that the cesarean rate was too high, and proposed guidelines for the appropriate utilization of cesarean section.[5] Most of their recommendations were clinically sound, but none were truly evidence based.

In theory, it should be possible to calculate a rate that would minimize the sum of all maternal and fetal risks. In practice, it is difficult to define and measure any but the obvious physical complications. The traditional iatrocentric view of morbidity has focused on adverse events that prolong hospital stay or require readmission. Relatively little has been published about lesser degrees of morbidity from the mother and child's perspective: their quality of life—physical and psychologic, short-term and long-term—after delivery. Such factors are difficult to quantify, yet as long ago as 1913, DeLee (Chicago) believed that "the psychic influence of labor should be given a prominent place in our deliberations when seeking a mode of delivery."[20]

Even if it were possible to obtain reliable morbidity data, what level of maternal risk contraindicates abdominal delivery for fetal indications? Conversely, is there a degree of fetal risk from vaginal birth that mandates cesarean section? What level of long-term maternal morbidity associated with vaginal birth (eg, genital prolapse) outweighs the surgical risk of cesarean section?