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WOMEN'S HEALTH CARE PHYSICIANS

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Committee on Obstetric Practice

This Committee Opinion was developed by the American College of Obstetricians and Gynecologists' Committee on Obstetric Practice in collaboration with committee members Meredith L. Birsner, MD and T. Flint Porter, MD.

Cesarean Delivery on Maternal Request

ABSTRACT: The incidence of cesarean delivery on maternal request and its contribution to the overall increase in the cesarean delivery rate are not well known, but it is estimated that 2.5% of all births in the United States are cesarean delivery on maternal request. Cesarean delivery on maternal request is not a well-recognized clinical entity. The available information that compared the risks and benefits of cesarean delivery on maternal request and planned vaginal delivery does not provide the basis for a recommendation for either mode of delivery. When a woman desires a cesarean delivery on maternal request, her health care provider should consider her specific risk factors, such as age, body mass index, accuracy of estimated gestational age, reproductive plans, personal values, and cultural context. In the absence of maternal or fetal indications for cesarean delivery, a plan for vaginal delivery is safe and appropriate and should be recommended. After exploring the reasons behind the patient's request and discussing the risks and benefits, if a patient decides to pursue cesarean delivery on maternal request, the following is recommended: in the absence of other indications for early delivery, cesarean delivery on maternal request should not be performed before a gestational age of 39 weeks; and, given the high repeat cesarean delivery rate, patients should be informed that the risks of placenta previa, placenta accreta spectrum, and gravid hysterectomy increase with each subsequent cesarean delivery. This Committee Opinion has been revised to incorporate additional data regarding outcomes and information on counseling, and to link to existing American College of Obstetricians and Gynecologists' resources.

Recommendations

The American College of Obstetricians and Gynecologists makes the following recommendations:

- If a patient's main motivation to elect a cesarean delivery is a fear of pain in childbirth, obstetrician-gynecologists and other obstetric care providers should discuss and offer the patient analgesia for labor, as well as prenatal childbirth education and emotional support in labor.
- In the absence of maternal or fetal indications for cesarean delivery, a plan for vaginal delivery is safe and appropriate and should be recommended.
- After exploring the reasons behind the patient's request and discussing the risks and benefits, if a patient decides to pursue cesarean delivery on maternal request, the following is recommended:
 - In the absence of other indications for early delivery, cesarean delivery on maternal request should not be performed before a gestational age of 39 weeks.
 - Given the high repeat cesarean delivery rate, patients should be informed that the risks of placenta previa, placenta accreta spectrum, and gravid hysterectomy increase with each subsequent cesarean delivery.

Introduction

This Committee Opinion has been revised to incorporate additional data regarding outcomes and information on counseling, and to link to existing American College of Obstetricians and Gynecologists' resources. *Cesarean delivery on maternal request* is defined as a primary cesarean delivery on maternal request in the absence of any maternal or fetal indications. Cesarean delivery rates in the United States are at the highest levels ever, with more than 1.3 million cesarean deliveries (32% of all births) performed in 2015 (1). The incidence of cesarean delivery on maternal request and its contribution to the overall increase in the cesarean delivery rate are not well known, but it is estimated that 2.5% of all births in the United States are cesarean delivery on maternal request (2).

Cesarean delivery on maternal request is not a well-recognized clinical entity. Few studies directly compare the intended mode of delivery (ie, cesarean delivery on maternal request with planned vaginal delivery). There is no randomized clinical trial that has compared cesarean delivery with trial of labor for singleton term gestations with vertex presentation. Most of the current knowledge is based on indirect analyses that compare elective cesarean deliveries without labor (ie, cesarean delivery without a specified indication) instead of cesarean delivery on maternal request, to the combination of vaginal, unplanned cesarean, and emergency cesarean deliveries (instead of planned vaginal deliveries). Similarly, data may report on outcomes of actual modes of delivery, but not on outcomes of cesarean delivery on maternal request versus planned vaginal delivery.

At the National Institutes of Health State-of-the-Science Conference on Cesarean Delivery on Maternal Request in 2006, a panel of experts was charged with reviewing the available literature and expert opinions on the subject (2). A systematic literature review of 1,406 articles was conducted to evaluate the relevance of existing studies on cesarean delivery on maternal request and the quality of the evidence. The panel concluded that the available information that compared the risks and benefits of cesarean delivery on maternal request and planned vaginal delivery does not provide the basis for a recommendation for either mode of delivery. The panel identified the best information available on the short-term and long-term risks and benefits of cesarean delivery on maternal request and planned vaginal delivery (including women who give birth vaginally and those who require cesarean delivery in labor) for the woman and her newborn.

Benefits and Risks of Cesarean Delivery on Maternal Request Compared With Planned Vaginal Delivery

With the exception of three outcome variables with moderate-quality evidence (maternal hemorrhage, maternal length of stay, and neonatal respiratory mor-

bidity), all remaining outcome assessments considered by the 2006 National Institutes of Health Consensus panel were based on weak evidence. This significantly limits the reliability of judgments regarding whether an outcome measure favors either cesarean delivery on maternal request or planned vaginal delivery.

Maternal Outcomes

Two outcome variables had moderate-quality evidence, and both were short-term maternal variables. The frequency of postpartum hemorrhage associated with planned cesarean delivery is less than that reported with the combination of planned vaginal delivery and unplanned cesarean delivery. Compared with vaginal delivery, cesarean delivery (planned or otherwise) requires a longer hospital stay. However, these analyses are affected by comparing planned and unplanned cesarean deliveries to all vaginal deliveries. Numerous factors also may influence length of hospital stay, including obstetric complications, insurance coverage, regional practice patterns, health care provider, patient preference, and neonatal hospital stay.

The remaining maternal outcome variables (infection, anesthetic complications, subsequent placenta previa, breastfeeding, urinary incontinence, surgical and traumatic complications, subsequent uterine rupture, hysterectomy, subsequent fertility, anorectal function, sexual function, pelvic organ prolapse, subsequent stillbirth, and maternal mortality) are based on poor quality evidence, which limits reliability of results.

In a retrospective cohort study of 66,266 patients on mode of delivery in China where 24.7% of women underwent cesarean delivery on maternal request, there were no significant differences between the cesarean delivery on maternal request and planned vaginal delivery groups in the frequencies of maternal intensive care unit admission (0.2% versus 0.2%), severe postpartum hemorrhage (0.5% versus 0.5%), maternal infection (1.3% versus 1.3%), organ injuries (0.4% versus 0.5%), and thromboembolic disorders (0.1% versus 0.1%); there were no maternal deaths in either group (3).

A Canadian retrospective cohort study of primiparous women with singleton pregnancies that compared women in planned cesarean versus planned vaginal delivery groups showed overall rates of severe morbidity for the entire 14-year period were 27.3 and 9.0, respectively, per 1,000 deliveries. The women in the planned cesarean group had increased postpartum risks of cardiac arrest (adjusted odds ratio [OR], 5.1; 95% CI, 4.1–6.3), wound hematoma (OR, 5.1; 95% CI, 4.6–5.5), hysterectomy (OR, 3.2; 95% CI, 2.2–4.8), major puerperal infection (OR, 3.0; 95% CI, 2.7–3.4), anesthetic complications (OR, 2.3; 95% CI, 2.0–2.6), venous thromboembolism (OR, 2.2; 95% CI, 1.5–3.2), and hemorrhage that required hysterectomy (OR, 2.1; 95% CI, 1.2–3.8).

These women also stayed in the hospital longer (adjusted mean difference, 1.47 days; 95% CI, 1.46–1.49 days) than those in the planned vaginal delivery group but had a lower risk of hemorrhage requiring blood transfusion (OR, 0.4; 95% CI, 0.2–0.8). Absolute risk increases in severe maternal morbidity rates were low (eg, for postpartum cardiac arrest, the increase with planned cesarean delivery was 1.6 per 1,000 deliveries, 95% CI, 1.2–2.1). The difference in the rate of in-hospital maternal death between the two groups was nonsignificant ($P=.87$) (4).

These are also factors that may be influenced by parity and planned family size. Uterine scars put women at increased risk of uterine rupture in subsequent pregnancies. Although the risk of peripartum hysterectomy in a woman's first delivery is similar for planned cesarean delivery and planned vaginal delivery, there is a significant increased risk of placenta previa, placenta accreta spectrum, placenta previa with accreta, and the need for gravid hysterectomy after a woman's second cesarean delivery (5) (see also Table 1). Specifically, when placenta previa is present, the risk of placenta accreta spectrum increases dramatically with increased number of cesarean deliveries (6); with previa, the risk of placenta accreta spectrum with one, two, three, and four or more prior cesarean deliveries is 11%, 40%, 61%, and 67% respectively. This emphasizes the need to consider the woman's total number of planned or expected pregnancies if cesarean delivery on maternal request is discussed during her first pregnancy, with the realization that many pregnancies are unplanned and women may underestimate their final parity at the time of their first pregnancy (7). At this time, there is insufficient evidence to recommend cesarean delivery on maternal

request over planned vaginal delivery for maternal outcomes.

Neonatal Outcomes

There are limited studies on cesarean delivery on maternal request and neonatal outcomes; therefore, the literature on cesarean delivery without labor is evaluated in this section. The risk of respiratory morbidity, including transient tachypnea of the newborn, respiratory distress syndrome, and persistent pulmonary hypertension, is higher for elective cesarean delivery compared with vaginal delivery when delivery is earlier than 39–40 weeks of gestation (8, 9). The literature on elective cesarean delivery without labor also shows an increased rate of complications related to prematurity (including respiratory symptoms, other neonatal adaptation problems such as hypothermia and hypoglycemia, and neonatal intensive care unit admissions) for infants delivered by cesarean delivery before 39 weeks of gestation (2). Because of these potential complications, in the absence of other indications for early delivery, cesarean delivery on maternal request should not be performed before a gestational age of 39 weeks.

The 2006 National Institutes of Health Consensus panel concluded that the only neonatal outcome with moderate-quality evidence is respiratory morbidity, which is sensitive to gestational age and the risk is higher for cesarean deliveries than for vaginal deliveries. The remaining neonatal outcome variables (iatrogenic prematurity, neonatal length of hospital stay, fetal mortality; intracranial hemorrhage, neonatal asphyxia, and encephalopathy; birth injury and laceration, and neonatal infection) are based on poor quality evidence, which limits reliability of results. At this time, there is insufficient evidence to recommend cesarean delivery on

Table 1. Risk of Placenta Accreta and Hysterectomy by Number of Cesarean Deliveries Compared With the First Cesarean Delivery

Cesarean Delivery	Placenta Accreta (%)	Odds Ratio (95% CI)	Hysterectomy (%)	Odds Ratio (95% CI)
First*	0.2	—	0.7	—
Second	0.3	1.3 (0.7–2.3)	0.4	0.7 (0.4–0.97)
Third	0.6	2.4 (1.3–4.3)	0.9	1.4 (0.9–2.1)
Fourth	2.1	9.0 (4.8–16.7)	2.4	3.8 (2.4–6.0)
Fifth	2.3	9.8 (3.8–25.5)	3.5	5.6 (2.7–11.6)
Six or more	6.7	29.8 (11.3–78.7)	9.0	15.2 (6.9–33.5)

Abbreviation: CI, confidence interval.

*Primary cesarean delivery.

Silver RM, Landon MB, Rouse DJ, Leveno KJ, Spong CY, Thom EA, et al. Maternal morbidity associated with multiple repeat cesarean deliveries. National Institute of Child Health and Human Development Maternal–Fetal Medicine Units Network. *Obstet Gynecol* 2006;107:1226–32.

maternal request over planned vaginal delivery for neonatal outcomes.

Other Factors and Counseling

Cesarean delivery on maternal request often engenders ethical concerns regarding patient and health care provider autonomy. The American College of Obstetricians and Gynecologists' Committee Opinions on the *Limits of Conscientious Refusal* (10), *Ethical Decision Making in Obstetrics and Gynecology* (11), and the *Refusal of Recommended Treatment During Pregnancy* (12) provide further guidance on these topics (see the For More Information section).

When a woman desires a cesarean delivery on maternal request, her health care provider should consider her specific risk factors, such as age, body mass index, accuracy of estimated gestational age, reproductive plans, personal values, and cultural context. Critical life experiences (eg, trauma, violence, or poor obstetric outcomes) and anxiety about the birth process may prompt her request. Fear of the pain or discomfort associated with labor and vaginal delivery also may prompt the request for cesarean delivery. In this situation, women should be reassured that maternal request for pain relief is, on its own, a sufficient medical indication for analgesia and anesthesia during labor and delivery (13). Therefore, if a patient's main motivation to elect a cesarean delivery is a fear of pain in childbirth, obstetrician-gynecologists and other obstetric care providers should discuss and offer the patient analgesia for labor, as well as prenatal childbirth education and emotional support in labor.

Given the high repeat cesarean delivery rate, patients should be informed that the risks of placenta previa, placenta accreta spectrum, and gravid hysterectomy increase with each subsequent cesarean delivery.

Further research is needed to provide direct evidence to facilitate patient counseling. This includes surveys on cesarean delivery on maternal request; modification of birth certificates; and coding to facilitate tracking, prospective cohort studies, database studies, and studies of modifiable risk factors for cesarean delivery on maternal request versus planned vaginal delivery.

The Council on Patient Safety in Women's Health Care safety bundle on Safe Reduction of Primary Cesarean Births encourages tracking and reporting of cesarean measures (14). The World Health Organization proposes adopting the Robson classification as an internationally applicable cesarean delivery classification system; this classifies all women admitted for delivery into one of 10 groups based on characteristics that are easily identifiable (15, 16). Short-term and long-term maternal and neonatal outcomes as well as cost need further study.

Conclusion

The available data on cesarean delivery on maternal request compared with planned vaginal delivery are minimal and mostly based on indirect comparisons. Most of the studies of proxy outcomes do not adequately adjust for confounding factors and, thus, must be interpreted cautiously. In the absence of maternal or fetal indications for cesarean delivery, a plan for vaginal delivery is safe and appropriate and should be recommended. After exploring the reasons behind the patient's request and discussing the risks and benefits, if a patient decides to pursue cesarean delivery on maternal request, the following is recommended: in the absence of other indications for early delivery, cesarean delivery on maternal request should not be performed before a gestational age of 39 weeks; and, given the high repeat cesarean delivery rate, patients should be informed that the risks of placenta previa, placenta accreta spectrum, and gravid hysterectomy increase with each subsequent cesarean delivery.

For More Information

The American College of Obstetricians and Gynecologists has identified additional resources on topics related to this document that may be helpful for ob-gyns, other health care providers, and patients. You may view these resources at www.acog.org/Womens-Health/Cesarean-Delivery.

These resources are for information only and are not meant to be comprehensive. Referral to these resources does not imply the American College of Obstetricians and Gynecologists' endorsement of the organization, the organization's website, or the content of the resource. The resources may change without notice.

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