

Changing patient needs: issues and ethics of maternal requested caesarean delivery

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Caesarean deliveries are one of the most common surgical procedures performed in the developed world. Although complications are known to occur, the rates of adverse events continue to decline. The longstanding evidence that women who choose vaginal delivery over a scheduled caesarean have a substantially lower risk of death is becoming increasingly tenuous. As a result, primary and repeat caesarean deliveries have reached their highest levels.^{1,2}

Caesarean delivery on maternal request is defined as a primary caesarean delivery performed at the request of the mother in the absence of any medical or obstetric indication.³ The American College of Obstetrics and Gynecology (ACOG) estimates that 2.5% of all births in the United States are caesarean delivery on maternal request.⁴ In a 2000 editorial, the former president of the ACOG wrote that perhaps the time had come when the risks, benefits and costs between vaginal and caesarean births are so balanced that women can choose both how and when to have their babies.⁵

Why do women request an elective caesarean delivery?

The increasing prevalence of elective caesarean sections may be accounted for by the perceived advantages of the procedure for mothers, babies, and healthcare providers. A mother may request a caesarean section with the belief that there is real benefit to herself and her baby, or as result of anxiety over labour, the birthing process and its potential consequences.⁶

A planned caesarean procedure eliminates the chance that a woman will require an emergency caesarean, which is associated with an increased risk of morbidity and mortality.⁷ Lilford *et al* reported a relative risk of 1.7 (95% CI, 0.5-6.0) for death attributable to emergency caesarean section compared to elective procedures. The increased mortality was attributed to a greater incidence of

postoperative sepsis and thromboembolism.⁸ Similar findings by Yokoe *et al* showed that emergency caesarean deliveries were associated with a greater incidence of postpartum infection than elective procedures.⁹ General anaesthesia is also more likely to be used for emergency caesarean versus elective caesarean and is known to increase the risk to the patient.⁷ Given these increased risks of emergency caesarean, a woman may view an elective procedure as a pro-active approach to reduce risk.

Many women desire caesarean births to avoid the potential for perineal trauma associated with normal and assisted vaginal delivery.¹⁰ Importantly, such injuries are known to compromise the integrity of the pelvic floor.¹¹ The incidence of urinary incontinence after a vaginal birth may range from 22% in spontaneous vaginal births to 33% following forceps-assisted delivery.¹² Most observational studies assert that caesarean delivery is protective against a pelvic floor injury, associated pelvic organ prolapse, and urinary incontinence.¹³ Rortveit *et al* suggested that prophylactic caesarean delivery might reduce a woman's risk of moderate to severe urinary incontinence by 5%.¹⁴ A planned caesarean section may also be viewed by the mother as a safer mode of delivery because it may reduce the risk of intrapartum death, hypoxia and birth trauma.⁷ In 2003, an Irish retrospective study involving infants weighing 2,500g or more demonstrated a significantly lower perinatal mortality rate in babies born by caesarean section. However, the study design failed to control for confounding factors such as antepartum, intrapartum and neonatal care.¹⁵ Elective caesarean delivery also eliminates the risk of detrimental intrapartum events such as shoulder dystocia or failure to progress, which may be associated with neonatal intracranial injury.¹³ It may also protect against the risk of meconium aspiration and the possibility of intubation, which is more likely

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to occur after 39 weeks' gestation.¹⁶ Conversely, a planned vaginal delivery has been hypothesised to place neonates at an increased risk of intracranial haemorrhage, asphyxia, encephalopathy and infection.¹⁰ A retrospective study by McFarland *et al* emphasised the protective effect of caesarean section against birth injury, demonstrating a 50% reduction in the rates of fractures and nerve palsies among neonates delivered by caesarean section compared with those that underwent assisted vaginal delivery.¹⁷ Irrespective of the benefits or concerns with elective caesarean deliveries, anxious patients often just wish to gain control over the unpredictable nature of labour and vaginal birth.¹¹ Obstetricians may accommodate these requests, despite a medical opinion to the contrary, since the medical-legal standpoint is that elective caesarean birth is a fairly standard procedure associated with less risk than vaginal delivery.¹¹ A survey of 243 obstetricians in England and Wales revealed that 69% would perform an elective caesarean section on maternal request due to fear of litigation and pressure from their patients.¹⁸ In addition to reducing liability, scheduling these procedures may help to balance staffing levels with clinical volume.¹⁶ Arguably, optimal scheduling may also alleviate the issues of insufficient staff and fatigue in healthcare professionals, which can contribute to maternal and neonatal morbidity.¹⁹

What are the concerns regarding elective caesarean birth becoming a 'standard of care' procedure?

Advances in surgical and anaesthetic techniques, antibiotic therapy and blood product availability have led to the evolution of the benefit-risk calculus associated with caesarean deliveries. Nevertheless, vaginal delivery is still considered the safest mode of delivery in the uncomplicated low-risk patient.³ The relative risk of maternal death after caesarean delivery versus vaginal birth in the United States has been reported as 3.5.²⁰ Schuitemaker *et al* asserts that up to 130 annual maternal deaths in the US might be attributed to the high rate of surgical delivery.²⁰ However, as maternal death has become rare, this inference may be largely based on older data using patients whose care was not provided according to current obstetric standards. As the risks of surgery have decreased over time, the exact degree of maternal mortality that would occur if elective caesarean birth became standard of care is unknown. Cases of maternal mortality secondary to caesarean birth have been attributed mainly to haemorrhage, thromboembolism and infection risks that are associated with all types of major abdominal surgery.²¹ Extensive blood loss is a rare complication but may occur due to laceration of uterine vessels during inadvertent extension of the uterine incision angles.^{22,7} A greater decline in postnatal haemoglobin from occult blood loss and haematoma formation within the broad ligament are also potential complications.

Excessive blood loss, combined with dehydration and post-operative immobility, contribute to the increased risk of thromboembolism.⁷ This risk is further increased by anaemia, infection, postpartum haemorrhage and reactive thrombocytosis, which is a prominent feature in caesarean births compared to vaginal delivery.²³ There have also been rare case reports describing air and amniotic fluid embolism during caesarean section,⁷ which may be related to a prolonged uterine incision-to-delivery interval.²⁴

The most common maternal post-operative complication is infection and this is responsible for significant postnatal morbidity and prolonged hospital stay.²⁵ Despite the routine use of prophylactic antibiotics, infection is thought to occur in up to 10% of women.¹³ However, the incidence of maternal infection may be under-reported. A 2001 retrospective cohort study of women in the United States found that 94% of all postpartum infections occur after hospital discharge.²⁶ Early recovery from a caesarean section takes more time than recovery from an uncomplicated vaginal delivery.¹⁰ A study by Liu *et al* showed that women with planned caesarean delivery required longer hospital stay than women with planned vaginal delivery, with an adjusted mean difference of 1.47 days in hospital (95% CI; 2.7-3.4).²⁷ Restricted mobility may have personal, social and economic consequences as it may interfere with the patient's ability to care for her newborn and older children, and delay the patient's return to work.⁷

Although elective caesarean is increasingly perceived to be associated with decreased mortality and morbidity over time, the fact remains that it is an open abdominal procedure with risks of damage to urinary and gastrointestinal organs. Incidence of bladder or ureteric injury during surgical delivery is estimated at 0.03-0.1%.²⁸ Bladder injury is often immediately recognised and managed, and rarely leads to long-term complications.²⁹ In contrast, injury to the ureter is often not recognised until the post-operative period. The ureter may be inadvertently ligated during lateral extension of the uterine incision or while trying to achieve haemostasis. A damaged ureter must be repaired in conjunction with a urologist, with the outcome depending on the site and nature of injury.^{28,29} The incidence of injury to the bowel during caesarean section is reported as 0.05%.²⁹ Postoperative ileus is more common and is more likely to occur in the presence of adhesions, excess handling of the bowel during surgery, blood remaining in the abdominal cavity, and when caesarean is performed under general anaesthetic.³⁰

With regard to neonatal health, delivery by caesarean section may be associated with compromised respiratory function.³¹ The physiological process of labour and vaginal birth promotes adaptation of the respiratory system to extrauterine life. In particular, physical compression of the chest during labour stimulates epinephrine release in the foetal circulation, which decreases the amount of fluid in the lungs.¹¹ A retrospective analysis comparing the neonatal outcomes of infants born after 35 weeks' gestation via caesarean delivery demonstrated higher frequency of persistent pulmonary hypertension, transient tachypnoea of the newborn and respiratory distress compared with neonates born vaginally.³¹ In addition, transient foetal respiratory acidosis has been linked to maternal hypotension, a common side effect of anaesthesia during surgery.³²

One of the most controversial issues surrounding caesarean without medical indication is the long-term consequences it may have on a woman's reproductive health. A history of previous uterine incision predisposes a woman to placental abnormalities in subsequent pregnancies. For example, it more than doubles the risk of developing placenta praevia,⁸ a condition where the placenta partly or fully occludes the internal cervical os. It also increases the risk of placental abruption, a condition where the placenta prematurely separates from the uterine wall.²⁴ Both these conditions are associated with increased rates of

antepartum haemorrhage. The pathogenesis of placenta praevia involves impaired decidualisation at the uterine scar site, which enables the trophoblast to morbidly invade the myometrium such that it cannot migrate away from the cervix as the uterus grows.²⁴ An abnormally sited placenta is also more likely to invade the uterine scar and develop into placenta accreta, a condition where the placenta becomes morbidly adherent to the uterine wall. In addition to an increased risk of haemorrhage, treatment of a placenta accreta requires a hysterectomy.²⁴ The weakening of the uterine wall and risk of uterine rupture in subsequent pregnancies is another major concern. Studies have shown that the incidence of uterine rupture is greater with attempted vaginal birth after previous caesarean than with elective repeat caesarean.^{33,34} In addition to the proposed risk to future pregnancies, possible associations with fertility decline, miscarriage, stillbirth and an ectopic pregnancy have been proposed. Although reliable data are limited, these complications relate to a hypothesis that the caesarean procedure alters the blood supply of the uterus.³⁵

Ethical issues

The issue of performing caesarean delivery on maternal request is at the centre of an ongoing and controversial bioethical debate. It highlights the struggle to balance patient autonomy with the duty of the physician to uphold the principles of beneficence, non-maleficence and justice. Patients may view their request for delivery by caesarean section as exercising their right to individual choice and self-governance.³⁶ The principle of autonomy can only be satisfied when true informed consent is obtained³⁷ and this involves discussion of the relative risks and benefits of the procedure, including a realistic assessment of the potential complications and outcomes.¹³ However, the evidence provided in the current literature is confounded by variables that influence outcome such that it is impossible to precisely predict the sequelae of caesarean section. Due to this relative lack of reliable data, a physician is neither ethically obligated to initiate a discussion of elective caesarean birth, nor required to perform an intervention in the absence of a medical indication.^{38,39} In fact, the decision to undertake major surgery to circumvent what is a normal physiological event challenges the principles of beneficence and non-maleficence.⁴⁰ By considering a caesarean section to be an invasive procedure in the absence of medical or obstetric indication, non-

maleficence may thereby outweigh a patient's autonomy. Finally, a physician's ethical duty to uphold justice involves ensuring the fair treatment of patients and allocation of health resources. It has been shown that the total cost of caesarean delivery is twice that of a vaginal delivery,⁴¹ due to the costs of using an operating theatre, anaesthesia, increased length of stay in hospital, and treatment of wound infections.⁴¹ The foundation of the ethical relationship between a woman and her physician requires the exchange of accurate information and effective communication.

Patients' requests should be met with non-directive counselling, which incorporates the woman's values and cultural context with sensitivity to her concerns.³⁶ The dialogue should aim to maximise the patient's understanding of the issues and focus on individual needs, including future reproductive plans, medical risk factors, and psychological concerns.³ After a thorough discussion and review, caesarean delivery on maternal request may be agreed upon as a reasonable alternative to planned vaginal delivery. Where a physician cannot support this request based on their ethical standpoint, it may be appropriate to refer the patient to another healthcare provider.³⁸

The increase in maternal request for caesarean delivery may be related to socio-cultural change. In developed countries, women live longer and have fewer children, rendering quality of life issues such as the risk of incontinence more prominent and the risks associated with having multiple subsequent caesarean deliveries less prominent. Despite the frequency of the procedure, the evidence concerning the risk-benefit paradigm of vaginal delivery and caesarean delivery on maternal request is inconclusive. The interpretation of many relevant studies on the subject is often limited by study design and conflicting conclusions. There are no randomised control trials and few prospective long-term studies that evaluate the outcomes of elective caesarean delivery compared with vaginal birth. Robust prospective studies of women undergoing caesarean section under regional anaesthesia, with routine antibiotic therapy and appropriate thromboprophylaxis, are needed to assess the true risks. These studies should particularly focus on the incidence of maternal mortality and placental problems in future pregnancies. Until quality evidence is available, the decision to perform a caesarean delivery on maternal request should be carefully individualised and consistent with ethical principles.

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