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Caesarean Section: A Delivery Option and A Life Saving Method of Delivery Among Pregnant Women

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Abstract:

Caesarean Section (CS) is one of the delivery options in obstetric medicine. The procedure is adjudged worldwide to be a safe method or delivery option where vaginal delivery may not be safe for the mother, (like case of small pelvis, placental praevia, pre-eclampsia, and maternal distress) and or the child, (macrosomia, cephalopelvic disproportion, breech presentation, and foetal distress). CS must be medically prescribed by the obstetrician based on maternal parameters, and foetal conditions, during gestation and delivery. CS rates are higher in developed countries due to factors like, delayed child bearing, policies promoting repeat CS, refusal of vaginal births after CS, wide use of continuous electronic foetal monitoring, use of epidural analgesia, fear of malpractice liability and maternal request. Maternal request of CS is common in developed countries of the world, which has added to the increasing global rates of the procedure (21.1%). On the other hand, in developing countries, the rates are lower (2% in Nigeria) because pregnant women fear of irreparable damage after CS, safety of the CS, religious and social factors, stigmatization attached to CS delivery and value vaginal delivery. The value of CS as a life – saving method of delivery and a delivery option cannot be overemphasized, but it must be prescribed by the obstetrician based on evidence of maternal parameters and foetal conditions.

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Introduction

Caesarean section (CS) is a common procedure in obstetrics and has contributed immensely to improving maternal and foetal outcome. Caesarean section is a surgical procedure which involves incisions made through a mother's abdomen (laparotomy) and uterus (hysterectomy) to deliver one or more babies or to remove a dead foetus (Kintu, et al., 2019). Caesarean section (CS) is a life-saving obstetric surgery, which may be necessitated (sometimes the only feasible option) in high risk pregnancies such as those with multiple/ large fetuses, breech presentations, obstructed labour, as well as in women with transmissible infections such as HIV/AIDS (Weckesser et al., 2019).

Caesarean section (CS) is believed to be a life – saving delivery option for mother and child. Caesarean section, a delivery procedure that was avoided over a little more than a century ago for its alarming mortality rates, is now the mode of delivery for one in three women in the United States (Weckesser et al., 2019) and up to four in five women in some other places in the world (Thobeka, et al., 2018). Caesarean section is a common procedure in obstetric and has contributed immensely to improving maternal and foetal outcome (Somera, et al., 2018). However, there are still some concerns about knowledge, attitude and willingness to accept the procedure among pregnant women especially those in the developing world (Somera, et al, 2018). CS rates continue to increase steadily worldwide, there is also lack of consensus on the appropriate CS rate and the associated additional short – and long – term risks and costs. The above facts evoke a worldwide concern. CS is a surgical operation which involves incisions made through a mother's abdomen and subsequently her uterus to deliver one or more babies or to remove a dead foetus from a life mother (Somera, et al, 2018).

Due to advancement in medicine, the procedure has become safer over the years, with many developed nations of the world having rates well over the World Health Organization (WHO) recommendation of 15%. According to Mumtaz, et al. (2019), CS is one of the most important operations performed in obstetrics and gynaecology, and that its life saving value to both mother and foetus has increased over the decades. Although specific indication for its use have changed, its purpose of preserving life of a mother with obstructed labour and delivering a viable infant from a dying mother have gradually expanded to include the rescue of the foetus from subtle dangers (Mumtaz, et al., 2019).

Concept of Caesarean Section (CS)

Hedwige (2018) defined cesarean section as the delivery of the fetus via surgical incisions made through the abdominal wall (laparotomy) and the uterine wall (hysterotomy) of the pregnant woman after the age of fetal viability. The surgical procedure is carried out in an attempt to save the life of the mother, baby (fetus) or both. The CS that was first recorded was performed in year 1500 by Jacob Nufer (classical), and there had been increased rates worldwide thereafter (Makinde, et al., 2020). Lower segment CS was introduced by Kerr in 1926, which is now very common.

Akogu, et al. (2021) submitted that CS which is medically necessary, saves life especially in the case of obstructed labor whereby ruptured uterus that can lead to hemorrhage and death is prevented. But some pregnant women request for CS when there is no medical indication, rather because they cannot withstand labor pain associated with vaginal delivery (Mukattash, et al., 2020). Cesarean section which may be necessary in some situations may also predispose the woman to some risks just like other surgeries. These include potential for heavy bleeding, or infection, slower recovery, delay in establishing breastfeeding and skin-

skin contact with increased likelihood of complications in subsequent pregnancies (WHO, 2021).

The indications for CS are classified broadly into elective or emergency and relative or absolute. Scheduled and urgent CS were recently included in the classification. The commonest indications for CS are previous CS, breech presentation, labor dystocia, abnormal fetal heart rate or fetal distress. Others are multiple gestation, fetal mal-presentation, and suspected fetal macrosomia, obstructive lesions in the lower genital tract, pelvic abnormalities which prevent descent or engagement of the presenting part during labor, cardiac conditions etc. Compared to the consequences of, for example, an obstructed labour, CS is safe for both the mother and baby and it is the most commonly performed obstetric operation. There are some risks such as accidental damage to the woman's bladder or bowel and an increase in the incidence of breathing difficulties in the baby (Tiruneh, et al., 2021).

However, CS is contraindicated in some circumstances when maternal status may be affected during the surgery such as severe pulmonary disease of the mother and when the fetus has a known congenital anomaly (anencephaly) which may lead to fetal demise. Cesarean section can be elective (planned) or emergency (unplanned) whereby the woman learned about the surgery less than 24hours before the procedure (Puia, 2018).

Pre-operative management of a patient who is to undergo CS includes: fasting time prior the surgery (at least 2hrs from clear fluids), intravenous infusion, placement of urethral catheter, close monitoring of the fetal heart rate, maternal blood pressure, pulse rate and oxygen saturation, prophylactic antibiotics, laboratory and imaging studies etc.

Post-operative management are: close monitoring of vital signs, urinary output, and vaginal loss, palpation of the fundus, intravenous infusion, administration of analgesia, ambulation, health education on discharge concerning exclusive breastfeeding, contraception and follow up appointment. The complications peculiar to CS includes: thromboembolic disease, infection (wound dehiscence, urinary tract infection), uterine atony, surgical injury etc.

Ohaeri, et al. (2019) submitted that CS is attributed to physical, psychological, financial and emotional stress like other major surgery, therefore patient's satisfaction should be taken into consideration. When pregnant women are given evidence-based information and are involved in the decisions concerning mode of delivery with the associated risks, it will yield positive outcome.

Caesarean section was introduced in clinical practice as life-saving procedure for both mother and baby. Its use follows the health care Indication and acceptability of the pregnant women. The acceptability of caesarean section among pregnant women depends on various factors that influence it as it is shown in different studies. Despite the improvement in the safety of cesarean delivery associated with advances in anesthesia, antibiotics, surgical techniques and blood transfusion, women in low-income countries continue to show strong aversion to cesarean section (Udobang, 2020).

Indications for Caesarean Section

Some relative indications for caesarean section include:

1. **Pathological cardiotocography CTG:** When a cardiotocography indicates acute hypoxia or fetal asphyxia during fetal monitoring including a fetal blood sample indicating acidosis the birth should be completed either as instrumental delivery (suction and or forceps delivery) or by caesarean section (Obi, 2019).
2. **Previous caesarean section:** This is one of the most common indications for caesarean section in many countries. Although the transverse lower uterine segment

incision has greatly lowered the risk of uterine rupture in subsequent vaginal birth (Naa Gandau, et al., 2019)

3. **Some disease condition:** Disease condition such as diabetes mellitus (in case of fetal macrosomia) multiple sclerosis, mother with hepatitis and HIV (to reduce the possibility of blood exchange between mother and fetus), some GIT disorder for instance acute appendicitis, after a surgical repair of the diaphragm (Makinde, et al., 2020)
4. **Increased maternal age:** Age itself is not an indication for caesarean section rather It is the occurrence of specific risk in a woman whose age is over 35years has been considered a high risk pregnancy. Prolonged labour due to slowed cervical dilation has been one of the indications for caesarean section in woman 35years (Makinde, et al., 2020).
5. **Caesarean section on demand:** This is primarily pre-labour caesarean delivery on maternal request in the absence of maternal or fetal anomalies or complication.
6. **Failure of induction of labour**: there is a well-known relationship between induced labour and caesarean section (Koo, et al., 2019)
7. **Obesity and Diabetes. Mellitus;** some pre-existing disease in the mother Increase the probability of fistula factors that can necessitate a caesarean section. The first of this is diabetes mellitus or gestational diabetes. If left untreated can result in the birth of children with weight of over 4000g which could be an indication for C-section (Gandua, et al., 2019)
8. **Preterm birth:** preterm delivery is the birth of baby 37 weeks of gestation and these babies have an increased risk of intracranial bleeding. When deciding mode of delivery of preterm neonate, presentation, the gestation age and delivery mode which is the least harmful the baby is considered (Ezeone, et al., 2018)

There are two types of caesarean section incision, the type chosen depends on the presentation of the fetus and the speed with which the procedure will be performed. These types of incision are:

1. **Classical incision:** the incision is made vertically through both the abdominal skin and the uterus. Its disadvantage is that the incision leaves a wide skin scar and also run through the active contractile portion of the uterus making it prone to rupture during labour and at next delivery (Gandua, et al., 2019)
2. **Low segment incision:** A low segment caesarean is the most common type of caesarean incision is commonly called a low segment transverse incision. The incision is made horizontally across the abdomen just over symphysis pubis and also horizontally across the uterus just over cervix. It is less likely to rupture during another delivery because this type of incision is through the non- active portion of the uterus (the part that contract minimally in labour) (Coates, et al., 2019)

In developing countries, women and those who make decisions for them such as husbands, mothers in law and local authority figures are reluctant to accept CS because of the traditional beliefs and sociocultural norms (Berglundh, et al., 2021). Some factors were believed to influence the acceptability of caesarean section among which is cultural beliefs, religious and spiritual reasons, incompetency on the part of health workers, family beliefs among others. Some culture view that the vaginal birth as traditionally accepted what has been in ages past and what every woman should experience. They concluded that any woman who doesn't experience the pain and endure labour pain is not real woman (Begun, et al., 2018). Some

women attribute having a caesarean birth to attack from enemy, such belief that an enemy could attack someone spiritually and impose punishment such an inability to have vaginal birth may affect women's health seeking behaviour when faced with delivery complication. In this case many women and their families would believe that traditional healers or religious priests are better able to deal with it than the hospital. In addition, caesarean section is seen by some women as what should not be portion of a woman who has faith and through the emphasis on one's faith in God there would be a divine intervention. Conversely, caesarean section could cast doubt on one's religious status (Anikwe, et al., 2019).

Some women also voiced that one of the reasons why women refuses caesarean section is the fear of having a caesarean section in subsequent deliveries. Some women further stated that couple who have planned to have around 5-6 children would not be able to have up to that if they should have a caesarean birth. It is a known fact that the cost of having a caesarean birth is greater than the cost of a vaginal birth. A recent report from the center for disease control and prevention in the U.S states that hospital charges for a caesarean birth is nearly twice of those of a vaginal birth. Vaginal birth is viewed economical and some women could be abandoned in the hospital by their husbands if they could not afford a caesarean bill. Whilst many religious denominations appreciate biomedicine and the medical need for CS, some religious leaders do not. So religious leaders may advise women against CS, fueling the aversion and delays by promising that an alternative method based on faith and prayers can achieve vaginal delivery (Alenke, et al., 2020; Anyasor & Adetuga, 2017).

Risks and Complications of Caesarean Section

There are risks associated with caesarean section:

1. **Severe maternal morbidity:** This has increased in many high- resources. A study from the US reports an increase in the occurrence of severe maternal complication from 0.64% in 1998- 1999 to 0.81% in 2004 - 2005. The authors of the study conclude that many of these complications are associated with the increased rate of caesarean section (Akogu, et al., 2021). When severe morbidity related to delivery mode was considered specifically, the incidence were 6.4/1000 for elective caesarean section to 8.5/1000 for emergency caesarean section and vaginal birth 3.5/1000 (Akogu, et al., 2021)
2. **Peripartum Hysterectomy:** This is commoner in caesarean birth than vaginal birth. It destroys the woman's future fertility and a high risk of intraoperative and post-operative complications and may lead to maternal death (Betran, et al., 2016).
3. **Abnormally adherent placenta:** This is when the placenta does not come away as it should, when the fetus is delivered and its risk increased with each caesarean section. It is becoming more common with increased caesarean section rate and some identified it as the most common cause of peripartum Hysterectomy (Hedwige, 2018).
4. **Uterine rupture:** This is a serious long term complication of caesarean section. It occasionally lead to maternal or neonatal mortality. The risk had been noticed to be higher if a woman has had two or more previous caesarean birth, if the caesarean birth lesson than 12months had earlier or if the labour is induced (Kintu, et al., 2019).

Caesarean section rate have increased both low and high income countries. The majority of these proceed smoothly and safely. However, caesarean section is a major open abdominal procedure which may lead to numbers of immediate or delayed complication (Gandua, et al., 2019). The following are complications of caesarean sections:

1. **Trans-surgical complication**
   - **a.** Haemorrahage: is the most common frequent complication of the caesarean section during or after the surgery. It is estimated that around 75% of obstetrics haemorrahage occurs in caesarean section (Lawani, et al., 2019)
   - **b.** Urological injuries: often the casarean section involves careful dissection to reject the bladder so that it can sometimes be injured. The ureter can be damaged by causing obstruction by ligature or and angulation partial or complete section (Lawani, et al., 2019).
   - **c.** Anaesthetic complication: They are very rare but when occur they are accompanied by high morbidity becoming lethal. In regional anaesthesia the most frequent are hypotension caused by sympathetic nerve block aggravated by aorta- cava compression produces the pregnant uterus in supine position.
   - **d.** Headache: this occurs by puncture of the arachnoid hard membranes that cause an escape of cerebrospinal fluid loss of cushioning effect.
   - **e.** Respiratory arrest: There may be total blockage causing a respiratory arrest that force to handle the airway with the difficulties. General anesthesia, chemical pneumonitis by aspiration of gastric content which has unfavourable prognosis.
   - **f.** Fetal lesion: With the scalpel when the uterus impinges this mostly occur when there is an indication to extract the fetus with urgency (Lawani, et al., 2019).
2. **Early post-surgical complication:** The early post-surgical complication includes infection, haemorrahage, endometriosis ileus urinary retention, pain, deep vein thrombosis and thromoembolitic event.
   - **a.** Infection: infection rate related to caesarean section has decreased the prophylactic use of antibiotics. The following are infections cases related to caesarean section.
   - **b.** Endometritis: The risk of Endometritis is significantly higher in C-section than the vaginal delivery and higher in emergency CS than the elective ones. Endometritis has been to decrease drastically after the introduction of prophylactic use of antibiotics as a policy in C-section in surgery policy.
   - **c.** Wound infection: wound infection is a commonest complication of caesarean section (Udobang, 2019)
   - **d.** Thromoembolism event are more frequent in the CS than in the vaginal delivery common to the gestation term of venous stasis hypercoagulability and endothelial Pulmonary Thromoembolism manifest suddenly with tachypnea dyspnea general malaise, severe chest pain and haemoptysis and may progress to shock, pelvic thromoembolism, there is no local pain malaise it's manifestation usually delayed (Udobang, 2019).
   - **e.** Uterus scar dehiscence. This is a rare but when occur fasting, parenteral solution and placement of nasogastric tube is usually enough to solve it.
   - **f.** Fetal complication are rare the most frequent is respiratory distress syndrome in terms of newborn in elective caesarean section
3. **Late Post-surgical complication:** This includes endometriosis of the abdominal wall in the surgical scar, the formation of adhesion and high possibility of low placenta insertion, placenta accreta or uterine rupture in later pregnancies

Lived Experience of Women Who Have Undergone Caesarean Section Birth when they were Pregnant

The decision for birth method is usually that of the pregnant woman and the spouse which is sometimes based on several factors. In developing countries like Nigeria, a number of women believe that CS is a last resort which is used to deliver a pregnant woman of her baby. Many will even say that the mere fact that they were told that they are going to have their babies through CS is like giving a death warrant. This attitude towards CS influences their acceptance of the procedure and resulted in psychological depression in them and their family members which may have adverse effect on the outcome of the procedure.

The importance of counselling during prenatal visits was highlighted in the findings from a cross-sectional study conducted on factors associated with counselling about delivery method and its influence on the likelihood of an elective CS delivery among women with multiple cesareans whereby Maroyi, et al., (2020) reported poor coverage and quality of counselling.

Afaya, et al. (2020), in their exploratory qualitative study, reported that support by Midwives, provision of adequate information or communication about the surgery before the procedure or any minor task is essential for understanding, cooperation of the patient and better outcome. Some of the participants claimed that the Midwives explained every procedure to them preoperatively while others who had an emergency CS done were not satisfied with the provision of information concerning the procedure. A participant was quoted: "the midwives did not explain anything about CS delivery and its complications to her and her family". This insufficient information increased their fear of the outcome of the surgery.

Likewise, Anyasor and Adetuga (2017) in their study on the perception and cultural belief of pregnant women towards CS reported that 56.3% of the women have limited exposure to information that are relevant to CS. This is in support of the study conducted on women during pregnancy and two months postpartum in Mid Sweden on the experience of childbirth between women who preferred and had a CS and women who preferred vaginal birth. The women who preferred and had CS experienced fear of a higher degree unlike those who had vaginal birth experience.

Whereas, Anikwe, et al. (2019) in their exploratory study on maternal experiences of 250 women after CS reported that two hundred and thirty-one (95.1%) of the respondents were well informed about the surgery pre-operatively.

However, the major concern by the women who were not in support of CS were fear of error and death intra operatively, fear of subsequent infertility and post-operative pains, which is a real concern In many cultures, women often give birth in an unfamiliar clinical setting, while many experience fear and anxiety about birth which could be mitigated by emotional and social support (Rosenberg & Trevathan, 2018).

Thobeka, et al. (2018) submitted that CS is a major surgical procedure that entails a lot of muscle stretching, therefore, an extensive pain management is necessary to make the patient comfortable post-operatively. In their one-on-one semi structured interview conducted on eleven (11) women that had CS done in postnatal wards, whereby 3 major themes were generated. One of the themes described diverse experiences of post CS pain by the mothers whereby participants felt loving and caring concern for their babies and labelled the pain as a "worthy gift".

Anikwe, et al (2019) prospective study explored the experiences of 250 women after CS in a tertiary hospital in South-East, Nigeria. The findings revealed that more than 50% of the respondents reported that nursing care was inadequate, less than one-third of the study population were not satisfied with postoperative pain management, majority of them commented on the courteous and respectful attitudes of the healthcare workers and 59.3% of

them described their overall experience as satisfactory. Likewise, Coates et al. (2019) submitted that majority of the women in their study were satisfied with the surgery, but minority were not whereby they felt ignored and disempowered and experienced loss of control.

Conclusion

Caesarean section is one of the major delivery options and a life – saving method among other birth methods among pregnant women. While pregnant women in developed countries request for it, even when it is not required, women in developing countries, especially in Nigeria, decline to have the surgery, even when it is required to save their lives and that of their babies. This highly invaluable procedure is better prescribed by an obstetrician and not usually by maternal request, and advocacy for acceptance of CS as a life-saving method of delivery among pregnant women is the panacea.

Considering the fact that caesarean section is costly in Nigeria, delivery services need to be made freely available, accessible, and affordable or at least, substantially subsidized to address the challenges of inequalities in accessing obstetric care between the rich and the poor in the country. Provision of universal health insurance coverage is also a very important intervention in this respect. According to World Health Organization recommendation on Emergency Obstetric care (EOC), improved availability and access to obstetric care services need to be further pursued in all the six geopolitical zones in Nigeria. This will involve increasing the number of comprehensive EOC facilities and promoting even distribution of same, improving staff strength and enhancing their skills as well as equipping and upgrading the existing obstetric facilities in Nigeria.

It is also important that all pregnant women should be encouraged to register at a government approved antenatal clinic where they will be attended to by trained and qualified professionals, as early as possible, to receive care until delivery. Pregnant women should also avail themselves to various investigations and examinations in preparation their safe deliveries. They should also agree to determine their mode of deliveries with their obstetricians/gynaecologists, according to the outcomes of their antenatal examinations and investigations.

Pregnant women should be empowered to take positive and proactive decisions about their safe deliveries without any negative influence of relatives. Women empowerment will incorporate choice of healthcare facility, choice of delivery options, and autonomy to give informed consent for caesarean section as a delivery option. Advocacy programme for acceptance of CS as a life – saving method of delivery should be a panacea for reduction of maternal mortality among pregnant women.

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