

Indications and Risks of Elective Cesarean Section**AbokreshEisha G.A.and Hamed Mohamed F.****Department of Obstetrics and Gynecology,Zliten Medical Center, Zliten Libya****ABSTRACT**

In fact, the indications for cesarean section has changed in many countries, now including psychosocial factors such as anxiety about the delivery, or even the mother's wish to have a cesarean section in the absence of any medical indication. The rate of cesarean section is considered as a proxy indicator in maternal health to monitor health services progress. The World Health organization (WHO) has recommended 5% to 15% population-based cesarean section rate. Changing risk profiles among increasingly older primiparae are often cited as a reason for the rise in cesarean deliveries. An increase in maternal request cesarean sections also plays a part. However, the rise in cesarean section rates should not be viewed in isolation from changes in society. In recent years a number of risks have also been described for babies delivered by elective cesarean section as the development of bronchial asthma. Existing data are unsatisfactory, however, and a focus of current controversy. Previous studies point to neonatal risk associated with elective cesarean section compared with vaginal delivery, including increased mortality, increased risk of respiratory disease, or diabetes type I. Other studies found no difference in neonatal outcome between elective cesarean and vaginal delivery; although they emphasize that only limited data are available. The present study aimed to review indication and risks associated with surgical procedure of cesarean section.

Keywords: *Elective Cesarean Section; risks; Post-partum Hemorrhage.*

Introduction:

It is a challenge to obtain good-quality evidence on cesarean delivery without any medical indication (1). Higher rates of maternal complications associated with cesarean delivery when compared with vaginal delivery (2).

Surgical procedure of cesarean section may associate with a numerous potential complications for both mother and child(3). Intraoperative risks as infection, organ injuries, or the need for blood transfusion. Many side effects as post-partum: thromboembolic complications(4).

In particular, the complications relating to later pregnancies should be mentioned: uterine rupture, infertility or even placental anomalies such as placenta previa, increta(5). WHO stated on the basis of a study of maternal and fetal complications in some countries, that cesarean sections are associated with an increase in risks for both mother and child compared to vaginal delivery and should therefore be performed only when significant advantages are expected(6).

Indications:

The decision to perform a cesarean section is based primarily on the question of what is best for or may save the lives of the mother and child(7). The indications for cesarean section can therefore be divided into absolute and relative indications. Elective cesarean section, performed solely at the wish of the mother, without any medical indication, is considered a separate indication(8,9).

Absolute indications for cesarean section with discussion of cesarean delivery on maternal request including absolute disproportion when small maternal pelvis or presence of anatomical malformation, making vaginal birth impossible. Chorioamnionitis is an amniotic infection syndrome of placenta requiring immediate delivery to avoid fetal infection(6).

Eclampsia and life-threatening complications of pregnancy, usually leading to cesarean delivery (10). Also, fetal asphyxia or fetal acidosis considering life-threatening situations for the fetus that can lead to fetal hypoxia (11). Prolapse of the umbilical cord between the head of the fetus and the vaginal opening, which can lead to fetal asphyxia (7). Placenta previa and anomalous placental position impeding vaginal delivery (6). Also, anomaly of fetal position that makes vaginal delivery impossible. Uterine rupture requiring immediate delivery by cesarean section (8,12).

Relative indications for cesarean section with discussion of cesarean delivery on maternal request: pathological cardiotocography that may provide indication of acute hypoxia or fetal asphyxia. If fetal acidosis occurs, the birth should be completed either as an instrumental delivery (suction and/or forceps) or by cesarean section (13). Delayed delivery or cessation of labor can result in an adverse outcome for the fetus or newborn(12). It is widely assumed that previous cesarean section makes it impossible to have a vaginal delivery in subsequent pregnancies(14).

Ethically, a cesarean is contraindicated if the pregnant patient refuses. Adequate education and counseling are crucial for informed consent. However, if the pregnant patient does not consent to have surgery performed upon her body, ultimately, it is her right as an autonomous patient (15).

Today, cesarean section is regarded in some medical and legal specialist circles as an alternative to spontaneous delivery. Nevertheless, a cesarean section remains a

surgical operation, and as such it also has side effects). A primary section increases the incidence of uterine rupture, placenta previa or accreta, and even of ectopic pregnancy all complications that can affect subsequent pregnancies (6).

Incidence:

The first cesarean documented occurred in 1020 AD, and since then, the procedure has evolved tremendously (3). Around the world, a rise has been seen in cesarean rates in developed and emerging countries. In 2008, 6.2 million unnecessary cesarean sections were performed worldwide (1). In sub-Saharan regions the cesarean rate is only 3%; in Europe is around 25% of all deliveries while in the USA the rate is estimated at 32.2% (6). In Libyan population, the cesarean rate is about 20% (Table 1). It is now the most common surgery performed in the United States, with over 1 million women delivered by cesarean every year. The cesarean delivery rate rose from 5% in 1970 to 31.9% in 2016 (16). However, due to the potential complications of cesarean delivery, much study has been done looking for ways to reduce the cesarean rate (17).

Table (1) Percentage of live birth in Cesarean rates among some countries

Country	2008	2012	2016
Turkey	41.30	47.80	52.23
Egypt	35.66	45.82	53.71
Poland	19.93	24.61	38.50
Italy	23.70	35.82	39.12
Europa	24.8	28.71	25.65
Libyan	21.76	22.71	20.23
Korea	28.51	34.16	37.15
United Kingdom	24.31	28.37	33.40

In Libyen, Zliten Medical Center mortality rates have now gone down from 3:10 000 to 1:10 000 births. In Libyan, the percentage of deliveries by cesarean more than doubled between 2000 (14%) and 2019 (28%). Number of cesarean sections to total number of deliveries in the period between (2008-2021) were estimated

among Libyan women (**Table 2**). On other hand, another study performed in Libya included a total of 5018 deliveries took place in the study duration, there were 1039 (20.7%) had previous one caesarean section, out of which 319 (30.7%) were the number of underwent repeat caesarean section and 720 (69.3%) were the number of vaginal birth after caesarean section. The indications for emergency repeat caesarean section was (29.3%) malpresentation, (24.45%) FD, (13.47) postdate, (11.59) obstructed lab and abruptio pl (5.95%). Anemia and difficult intubation were observed in repeated caesarean section. The authors concluded that there is a high chance of success in a trial of labor. These findings might help clinicians and women in the decision-making for the mode of delivery when it comes to pregnancy with a previous caesarean section. Women are explained about the option of trial of scar and told about the risk associated with a repeat CS, so many CSs can be avoided(18).

Table (2) Number of cesarean sections to total number of deliveries in the period between (2008-2021) among Libyan women

Date	NO. of CS	Total NO. of Deliveries	%
2008	874	5876	14%
2009	959	4896	19%
2010	997	4965	20%
2011	854	5995	14%
2012	934	6570	14%
2013	822	6633	12 %
2014	1305	6813	19%
2015	1254	6833	18%
2016	1024	6025	16%
2017	1063	5508	19%
2018	972	3518	27%
2019	1132	4024	28%
2020	1263	5432	23%
2021	963	4376	22%

Risks of Elective Cesarean Section

Changes in the risk profile of mothers and fetuses have been cited in recent years as important factors contributing to the rise in cesarean rates, but the data are conflicting. For example, a rise has been observed in the cesarean rate in the USA

despite the fact that maternal risk factors are declining thanks to improved treatment options(19).

The increase in mean maternal age appears to have a substantial role in cesarean rates. For some years now, pregnancy in a woman aged over 35 years has been considered a high-risk pregnancy (20).

In Libyan population, the percentage of women giving birth over the age of 35 is now 7% .As maternal age rises, so does the risk of fetal congenital malformations, hypertension, or even diabetes mellitus . Age is not in itself an indication for cesarean section; rather, it is the occurrence of specific risks in this age group that may lead to an indication for cesarean delivery(21).

Some pre-existing diseases in the mother increase the probability of risk factors that can necessitate a cesarean section (22). The first of these is diabetes mellitus or gestational diabetes .which if untreated can result in the birth of children with a birth weight of over 4000 g. Since the prevalence of obesity is continually rising, and not just in Libyen.the logical result is that the probability is also increasing that women with diabetes are becoming pregnant or that gestational diabetes will develop. In addition, overweight and obesity are associated with other risks such as hypertension (23,14).Since fetal macrosomia is regarded as a relative indication, this factor could be affecting the cesarean rate (6).

Cesarean delivery on maternal request (CDMR) an elective cesarean in the absence of any medical or obstetric contraindication for attempting vaginal delivery is the most frequently cited reason for the increasing incidence of cesarean sections(22,25).

Another much-discussed reason for the observed increase in cesarean deliveries is the rise in assisted reproductive interventions, which increasingly are leading to multifetal pregnancies (24). However, in Libyen the percentage of multiple pregnancies after fertility treatment has declined over the past 10 years. Reproductive interventions in themselves lead to an increased cesarean rate .but maternal anxiety about a healthy outcome for her child may also play an important part (21).

Complications of delivery by cesarean section:

Most of the studies have evaluated the presence of severe puerperal complications, such as severe hemorrhage and blood transfusion, hospitalization in an

intensive care unit, hysterectomy, infection (**Table 3**), hospitalization for more than seven days, and death(**6,12,20**). In the UK and Northern Europe, around 6% to 8% of all primary cesarean sections were performed at the request of the mother alone, whereas in the USA the figure is about 11% .In Australia, the rate of CDMR is estimated at about 17% of all primary cesareans (**6,15**). For Libyen-Zliten Medical Center there are no reliable data on incidence of CDMR, but shows that 7% of cesareans were carried out without any medical treatment.

Nevertheless, a cesarean section remains a surgical operation, and as such it also has side effects (**26**). A primary section increases the incidence of uterine rupture, placenta previa or accreta, and even of ectopic pregnancy—all complications that can affect subsequent pregnancies (**27**).

Maternal morbidity in elective cesareans is only slightly higher than that for vaginal deliveries and the operative risks are even half those associated with emergency cesarean sections (**28,29**).

Table (3): Complications of delivery by cesarean section:

	Complications
Intraoperative complications	Infections, Organ injury (bladder, intestines, ureter, etc.) Risks associated with anesthesia, Need for blood transfusions Hysterectomy as a treatment for severe bleeding, e.g. from placenta praevia
Postoperative complications	Thromboembolic complications (embolism, thrombosis), d Adhesions and persistent pain
Risks for subsequent pregnancies	Intrauterine growth retardation and preterm delivery, Stillbirth Spontaneous abortion; Ectopic pregnancy; Uterine rupture Infertility; Placenta previa, increta, or accreta and associated risks e.g., need for blood transfusion or hysterectomy

Neonatal Complications after cesarean section:

Neonates born via elective cesarean section have a higher risk of respiratory complications such as respiratory distress syndrome or transitory tachypnea of the newborn. As a rule, the symptoms tend to be mild and self-limiting, although many babies have to be admitted to a neonatal ward for short-term observation(**30**).

Studies have now also investigated long-term medical effects of cesarean section. Interestingly, an association was found between cesarean section and the occurrence of autism, bronchial asthma) type 1 diabetes mellitus various food

allergies and allergic rhinitis (31,32). Although some possible pathophysiological explanations have been postulated, causality has yet to be definitively proven and is the subject of much controversy in specialist medical circles(33).

Another complication that can occur after cesarean section is difficulty with breast-feeding(6). However, there are inconsistencies between the numerous studies that have now been carried out, as some of them report no association between cesarean section and breast-feeding whereas others show a clear negative effect. Probably a role is played by the delay to mother- child interaction caused when the child has to be admitted to a neonatal unit, or due to their spatial separation. However, this delayed mother-child relationship appears to have no influence on the frequency or duration of breast-feeding after discharge from hospital especially if the mother receives enough advice and support after the cesarean(34).

Recommendations regarding elective cesarean section for term fetuses have also undergone several revisions in recent years. In neonates, after either spontaneous delivery or elective cesarean, morbidity and mortality are significantly associated with gestational age) (35,36). The lowest complication rates were seen when a primary section was performed during the 39th and 40th gestational weeks (GW). Cesarean deliveries before GW39+0, compared to vaginal deliveries, led to notably higher respiratory morbidity in the newborn, requiring intensive medical care. For this reason, delivery should be no earlier than GW39+0(37,38).

Thus, changes in the risk profiles of mother and child and an increase in the number of elective cesarean sections performed are regarded as important causes of the rise in cesarean rates. Scientific progress and social and cultural changes, together with legal considerations, have led to a fundamental change in attitudes to cesarean

Conclusion:

A cesarean section is a surgical procedure which can lead to numerous complications in both mother and child. Cesarean section should not be considered an alternative of equal value to spontaneous childbirth.

Adverse maternal and fetal outcomes from 2008 to 2021 in Libyan women showed that cesarean sections are associated with increased risks for mother and child, and that therefore a cesarean section should only be performed when clear advantages are to be gained.

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