

A Study to Assess the Indications and Outcome in Previous Caesarean Section: An Observational Study

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Abstract

Aim: The aim of the present study was to assess the and fetal indications and outcome in previous caesarean section.

Methods: This prospective study was done in Department of Obstetrics and Gynaecology over a period of 2 years. The study has been done on women admitted for safe confinement with previous caesarean section. During the study period, there were total 12000 admissions.

Results: Caesarean section was done for 1800 women, include primary and repeat caesarean section (rate of CS 15%). There were 800 women with history of previous one CS. Elective CS was done for 500 cases. Successful vaginal delivery was conducted for 200 cases and failure of trial among 100 cases. Caesarean section was done for 1800 women, include primary and repeat caesarean section (rate of CS 15%). There were 800 women with history of previous one CS. Elective CS was done for 500 cases. Successful vaginal delivery was conducted for 200 cases and failure of trial among 100 cases. Fetal distress was the major indications for emergency repeat CS (52%), followed by non-progress of labour (34%). In elective repeat CS, major indication was CPD (40%), followed by fetal distress (16%). 12% had adhesions followed by 8% with obliterated UV fold.

Conclusion: The overall maternal risks are increased in repeat CS, but successful vaginal delivery is possible if women are managed well. They should be counseled about maternal and perinatal risks and benefits of planned vaginal birth after caesarean section and elective repeat CS. Elective repeat CS should preferably be done at 39 completed weeks of gestation to avoid the risk of preterm birth.

Keywords: Caesarean section, Neonatal Intensive Care Unit, Preterm labour, Trial of labour after caesarean, Vaginal birth after caesarean section

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Introduction

Caesarean delivery is a surgical operation to deliver a fetus weighing greater than or equal to 1000 g or gestational age (GA) greater than or equal to 28 weeks in the Ethiopian context and 20 weeks in developed countries, through an incision on the anterior abdominal wall and the uterus. [1,2] Increasing rate and number of caesarean deliveries are known to be associated with maternal risks (peripheral organ damage, bleeding, need for intensive care, long surgery time, hysterectomy and maternal death). [3-5]

In the countries with a low country-level of CS rates, increasing CS could preclude approximately 160,000 maternal deaths and 800,000 neonatal deaths per annum. [6] In addition, 60% of the

maternal mortality among pregnant women in low-income countries could be prevented if CS was performed at a population level of 10–15%. [7] Based on the World Health Organization (WHO) global survey, the CS rates varied widely across the geographical regions, with country-level rates ranging from less than 10% to more than 50%. [8-10] The CS rates were lowest among the African countries with a median rate of 8.8% indicating the limited use of CS in the African health facilities surveyed. [8] The median rate of CS among the countries in Latin America was 33%, with the highest rates reported in private hospital settings (51%). The high CS rates in private institutions in Latin America were mostly because of an increase

in elective CS4. Data obtained from nine countries in Asia noted a 27.3% overall CS rate among 122 recruited facilities. [10]

According to the World Health Organization (WHO) in 2015, CS rates in women who had a previous CS ranged between 78.1 and 79.4% in high-income countries, 85.2 and 87.5% in middle-income countries and 63.2 and 72.1% in low-income countries. [11] Previous CS is one of the main indications for CS in sub-Saharan Africa. [12,13] Even when the decision is made for a trial of labor (ToL), there are conflicting recommendations about how to manage both labor and delivery, for instance with regard to augmentation of labor. Doctor and patient preferences vary widely and fear of litigation is increasing, causing variations in clinical management. [14,15] The notably high CS rates among nulliparous women may be associated with increased use of CS without medical indication and inappropriate induction of labour. [11] Based on these findings, the number of deliveries after previous CS therefore is on the rise that constitutes a growing concern over the potential adverse pregnancy outcomes among women with a prior history of CS.

The aim of the present study was to assess the maternal and fetal outcome in previous caesarean section.

Materials and Methods

This prospective study was done in Bhagwan Mahavir Institute of Medical Science, Pawapuri, Nalanda, Bihar, India over a period of 2 years. The

study has been done on women admitted for safe confinement with previous cesarean section. During the study period, there were total 12000 admissions.

Inclusion Criteria Were: all women with previous one lower segment cesarean section, gestational age 37-40 wks.

Exclusion Criteria were all women with previous h/o classical CS, more than one CS, hysterotomy, myomectomy.

Following details were noted down in a proforma. Detailed history was taken at the time of admission about previous CS, particulars regarding indications, post operative morbidity, wt of the baby. Detailed history during the present pregnancy, investigation reports and associated medical disorders were noted down. Women with previous one C S done for non recurrent indication and a singleton cephalic presentation were counseled about the risks and benefits of Trial of labour after cesarean (TOLAC) versus elective repeat CS. Women who gave consent for TOL were admitted and monitored during labour for pulse, BP, fetal heart rate, uterine contractions, scar tenderness and progress of labour. Emergency CS was done for patients with non-progress of labour and fetal distress. Intra and post operative findings were recorded. Perinatal details were noted. Elective CS was decided for those women admitted with complications, completed 38 wks and not willing for TOL. Intra and post operative findings were recorded. Maternal and perinatal findings were noted.

Results

Table 1: Indications for CS in VBAC cases, elective CS, repeat CS in failed TOL

Indications	Elective repeat C S	VBAC	C S in failed TOL
Fetal distress	80 (16)	40 (20)	52 (52)
Breech	40 (8)	20 (10)	-
Transverse lie	20 (4)	16 (8)	-
CPD	200 (40)	18 (9)	-
PROM	20 (4)	18 (9)	-
PIH	10 (2)	12 (6)	-
Placenta previa	5 (1)	8 (4)	-
Non progress of labour	15 (3)	20 (10)	34 (34)
Unknown	20 (4)	48 (24)	-
High risk pregnancy	85 (17)	-	-
Threatened rupture	5 (1)	-	14 (14)
Total 800	500	200	100

Cesarean section was done for 1800 women, include primary and repeat cesarean section (rate of CS 15%). There were 800 women with history of previous one CS. Elective CS was done for 500 cases. Successful vaginal delivery was conducted for 200 cases and failure of trial among 100 cases.

Fetal distress was the major indications for emergency repeat CS (52%), followed by non progress of labour (34%). In elective repeat CS, major indication was CPD (40%), followed by fetal distress (16%).

Table 2: Incidence of per operative complications in repeat cesarean section

Complications	Percentage
Adhesions	12
Obliterated UV fold	8
Thinned out lower segment	3
Scar dehiscence	1
Cesarean hysterectomy	0.50
Broad ligament hematoma	0.50
Others	2

12% had adhesions followed by 8% with obliterated UV fold.

Discussion

Cesarean section (CS) is the commonest obstetric operative procedure. CS is usually performed when vaginal delivery put the baby or mother's life or health at risk, although recently it has also been performed upon maternal requests with non obstetric or medical indications. Medically justified cesarean section can effectively prevent maternal and perinatal mortality and morbidity. The reasons are multifactorial like, increasing maternal age, associated medical risk factors, changing obstetric practices like, increase in the rate of induction of labour and continuous electronic fetal monitoring. [16] Due to increased complications associated with vaginal birth after cesarean section (VBAC), prior CS forms a major indication for repeat CS and previous CS account for 8-40 % of repeat cesarean sections. Both trial of labour and repeat CS carry risks, including maternal hemorrhage, infections, operative injury, hysterectomy and mortality. With increasing number of trial of labours after CS (TOLAC), there were reports of uterine scar dehiscence or rupture and associated maternal and fetal morbidity and mortality. A successful VBAC has fewer complications than an elective repeat cesarean, while a failed trial of labour has more complications than an elective repeat CS. [16]

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unmarried and who had attended more than four antenatal care (ANC) visits. This may be due to the fact that unmarried women might not have the financial means to cover the cost of caesarean section or due to the fact that they may not have the power to negotiate ERCS. [17] Additionally, prior non-recurrent CS indications tended to have more successful ToLs as compared to recurrent indications such as failure to progress 12% had adhesions followed by 8% with obliterated UV fold. [18]

12% had adhesions followed by 8% with obliterated UV fold. Nazaneen S et al reported adhesions in 34.76%, dense adhesions in 12%, Anagha et al reported in 39.99%, Singh S et al 26.92% (21 in 78 cases). [16,19,20] Therefore, preventive strategies are of utmost importance, such as educating pregnant women during ANC about success factors, risks and prospects of various modes of delivery, monitoring labor by correct use of partogram, augmentation of labor with oxytocin and prevention of unnecessary first and subsequent CSs performed in the second stage of labor by training, equipping and empowering midwives as well as medical officers and associate clinicians to perform vacuum deliveries. A Sharma et al [21] reported 1.8% and Vikas D et al [22] reported 2% of rupture uterus in their study. Singh A et al reported incidence of rupture uterus 1.69% in previous CS, and 0.15% in patients without previous CS. [23]

Conclusion

The overall maternal risks are increased in repeat CS, but successful vaginal delivery is possible if women are managed well. They should be counseled about maternal and perinatal risks and benefits of planned vaginal birth after cesarean section and elective repeat CS. Elective repeat CS should preferably be done at 39 completed weeks of gestation to avoid the risk of preterm birth.

References

1. Paola Aghajanian M. Current diagnosis and treatment obstetrics and gynecology. 10th ed. In: Paola Aghajanian M, editor. 2007. p. 593-600.

2. Steven G. Gabbe M. Gabbe obstetrics normal and problem pregnancies. 6th ed. In: Joanna Adamczak M, editor. 2014. p. 455–70.
3. Kaplanoglu M, Bulbul M, Kaplanoglu D, Bakacak SM. Effect of multiple repeat cesarean sections on maternal morbidity: data from southeast Turkey. *Medical science monitor: international medical journal of experimental and clinical research*. 2015;21:14 47.
4. Vincenzo Berghella M. Up-to-date version 21 .2 repeat cesarean delivery. 2013. p. 540–602.
5. Althabe F, Sosa C, Belizán JM, Gibbons L, Jacquerioz F, Bergel E. Cesarean section rates and maternal and neonatal mortality in low-, medium-, and high-income countries: an ecological study. *Birth*. 2006 Dec;33(4):270-7.
6. Molina G, Weiser TG, Lipsitz SR, Esquivel MM, Uribe-Leitz T, Azad T, Shah N, Semrau K, Berry WR, Gawande AA, Haynes AB. Relationship between cesarean delivery rate and maternal and neonatal mortality. *Jama*. 2015 Dec 1;314(21):2263-70.
7. Thomas S, Meadows J, McQueen KK. Access to cesarean section will reduce maternal mortality in low-income countries: a mathematical model. *World journal of surgery*. 2016 Jul;40:1537-41.
8. Shah A, Fawole B, M'imunya JM, Amokrane F, Nafiou I, Wolomby JJ, Mugerwa K, Neves I, Nguti R, Kublickas M, Mathai M. Cesarean delivery outcomes from the WHO global survey on maternal and perinatal health in Africa. *International Journal of Gynecology & Obstetrics*. 2009 Dec 1;107(3):191-7.
9. Villar J, Valladares E, Wojdyla D, Zavaleta N, Carroli G, Velazco A, Shah A, Campodónico L, Bataglia V, Faundes A, Langer A. Cesarean delivery rates and pregnancy outcomes: the 2005 WHO global survey on maternal and perinatal health in Latin America. *The Lancet*. 2006 Jun 3;367(9525):1819-29.
10. Lumbiganon P, Laopaiboon M, Gülmezoglu AM, Souza JP, Taneepanichskul S, Ruyan P, Attygalle DE, Shrestha N, Mori R, Hinh ND, Bang HT. Method of delivery and pregnancy outcomes in Asia: the WHO global survey on maternal and perinatal health 2007–08. *The Lancet*. 2010 Feb 6;375(9713):490-9.
11. Vogel JP, Betrán AP, Vindevoghel N, Souza JP, Torloni MR, Zhang J, Tunçalp Ö, Mori R, Morisaki N, Ortiz-Panozo E, Hernandez B. Use of the Robson classification to assess cesarean section trends in 21 countries: a secondary analysis of two WHO multicountry surveys. *The Lancet Global Health*. 2015 May 1;3(5):e260-70.
12. Chu K, Cortier H, Maldonado F, Mashant T, Ford N, Trelles M. Cesarean section rates and indications in sub-Saharan Africa: a multi-country study from Medecins sans Frontieres.
13. Briand V, Dumont A, Abrahamowicz M, Traore M, Watier L, Fournier P. Individual and institutional determinants of caesarean section in referral hospitals in Senegal and Mali: a cross-sectional epidemiological survey. *BMC pregnancy and childbirth*. 2012 Dec;12(1):1-8.
14. Korst LM, Gregory KD, Fridman M, Phelan JP. Nonclinical factors affecting women's access to trial of labor after cesarean delivery. *Clinics in perinatology*. 2011 Jun 1;38(2):193-216.
15. Bonanno C, Clausing M, Berkowitz R. VBAC: a medicolegal perspective. *Clinics in perinatology*. 2011 Jun 1;38(2):217-25.
16. Nazaneen S, Kumari A, Malhotra J, Rahman Z, Pankaj S, Alam A. Study of intraoperative complications associated with repeat cesarean sections at a tertiary care hospital in Eastern India. *IOSR-JDMS*. 2017 Aug;16(8):77-82.
17. Pang MW, Law LW, Leung TY, Lai PY, La TK. Sociodemographic factors and pregnancy events associated with women who declined vaginal birth after cesarean section. *European Journal of Obstetrics & Gynecology and Reproductive Biology*. 2009 Mar 1;143(1):24-8.
18. Pembe AB, Othman MK. Pregnancy outcome after one previous caesarean section at a tertiary university teaching hospital in Tanzania. *Tanzania Journal of Health Research*. 2010 Jun 27;12(3):188-94.
19. Jinturkar AA, Dongaonkar D. Study of obstetric and fetal outcome of post caesarean section pregnancy at tertiary care center. *Int J Recent Trends Sci Tech*. 2014;10(3):530-7.
20. Singh S, Dhama V, Chaudhary R, Karya U, Nanda K. Maternal and fetal outcome in pregnant women with previous one lower segment cesarean section. *Int J Reprod Contracept Obstet Gynecol*. 2016 Dec 14;5(11):3815-9.
21. Sharma A, Sharma U, Chaudhary P, Acharya A, Chaudhary A, Hanspal J. Maternal and neonatal outcome in patients with history of previous one caesarean section. *Indian Medical Gazette*. 2012 May;145(5):169-73.
22. Devkare V, Agarwal NV, Gayakwad N, Kamant S. Maternal and fetal outcome of VBAC after first previous LSCS in a tertiary care teaching hospital of Western India. *Int J Curr Res Med Sci*. 2017;3(7):8-17.
23. Singh A, Shrivastava C. Uterine rupture: still a harsh reality!. *J Obstet Gynecol India*. 2015 May;65(3):158-61.