

DOI: <https://dx.doi.org/10.18203/2320-1770.ijrcog20230781>

Original Research Article

Post caesarean section complication and its management in Dhaka medical college hospital

Mita Das^{1*}, Abanti Ghosh², Suchita Rani Ghosh³

¹Department of Obstetrics and Gynecology, Sheikh Hasina Medical College and Hospital, Tangail, Bangladesh

²Directorate General of Health Services, Dhaka, Bangladesh.

³Dhaka Medical College Hospital, Dhaka, Bangladesh

Received: 07 February 2023

Accepted: 03 March 2023

***Correspondence:**

Dr. Mita Das,

E-mail: drmitadas28@gmail.com

Copyright: © the author(s), publisher and licensee Medip Academy. This is an open-access article distributed under the terms of the Creative Commons Attribution Non-Commercial License, which permits unrestricted non-commercial use, distribution, and reproduction in any medium, provided the original work is properly cited.

ABSTRACT

Background: The increase in the rate of caesarian sections globally is intimately related to the development of the women access to this procedure when required. But it is still related to the indiscriminate use without medical indication. This has culminated in the recent efforts to reduce these rates while incorporating the obstetric preferences of women. Objective of the current study was to find out the predisposing factors for caesarian complications and to observe its management pattern.

Methods: This was a cross sectional observational and descriptive study performed in the department of obstetrics and gynecology, Dhaka medical college hospital, Dhaka from January 2019 to June 2019. All mothers admitted for elective and emergency cesarean section were selected by purposive sampling. Thereafter, they were scrutinized according to eligibility criteria and 100 patients were finalized. A pre-tested, observation based, peer-reviewed data collection sheet was prepared before study. Data regarding clinical, biochemical and surgical profile were recorded.

Results: The mean age of the respondents was 25.96±4.43 (age range: 17-39) years. Among 100 mothers, 59% underwent elective and 41% underwent emergency cesarean section. 67% had uneventful outcome after LSCS. Rest 33% had post cesarean section complications. Among them 33% mother who had complications, 19 (57.57%), 12 (36.36%), 10 (30.30%) and 8(24.24%) had wound gap, UTI, GIT complications and haemorrhage respectively. 3 (9.09%) each suffered from thromboembolic complications and septic thrombophlebitis. Only one (3.03%) experienced DIC. Out of 33 complicated cases; 27 (81.81%) required treatment with injection oxytocin, blood transfusion, condom catheterization and 10 (30.30%) required secondary closure. Among them 4 (12.12%) underwent mass closure and received antithrombotic drug. One (3.03%) each underwent excision sinus tract and re-laparotomy.

Conclusions: Caesarean section complications can result in death or morbidity. Despite advances in technology and expertise, wound infection or wound gap remains the most common post-c-section complication. It is critical to successfully manage complications after cesarean section in order to reduce morbidity and mortality among mothers.

Keyword: Caesarean section, Complication, Wound infection, Management

INTRODUCTION

Cesarean section (CS) is the most common surgical procedure performed on women worldwide. It can save the life of the mother and newborn. It is one of the most common surgical procedures among women. The introduction of cesarean section surgery was associated

with an improvement in maternal and perinatal health outcomes.¹ Access to comprehensive emergency obstetric care, including CS, is key to preventing the estimated 2,87,000 maternal and 2.9 million neonatal deaths worldwide every year.² Although debate continues about how to quantify the need for lifesaving CS, a World Health Organization (WHO) report suggested that the optimal

population range for CS is between 5% and 15%, this endures as a reference.³ WHO has stated that no empirical evidence exists for an ideal caesarean rate.¹ But is also known to have the typical complications of any major surgery: hemorrhage, infection, venous thromboembolism and complications of anesthesia, sometimes leading to maternal death. Advances in medical care, antimicrobial and antithrombotic prophylaxis have improved the safety of CSV. During last decades, many obstetricians perceive the risks related to CS as being so low, that they are willing to perform a CS on relative medical indications, and even without medical indications. Some obstetricians emphasize the risks related to vaginal delivery (VD) the risks of neonatal asphyxia and trauma and the risk for obstetric tears- to justify the liberal use of CS. During the last years, there have been several study comparing severe maternal morbidity in different modes of delivery, and also comparing the risks related to elective CS with attempted VD.^{4,5} Attempted VD contains the risk of ending up with emergency CS or instrumental VD. Emergency CS is related with a 1.1-2.3-fold higher morbidity than elective CS.⁶ The compound morbidity of an attempted VD depends on how many of the women finally deliver in the planned manner. Factors increasing the risk of ending up in CS and increasing the risk for complications related to a delivery have been examined in several studies. Risk factors identified by most studies are obesity and advanced maternal age increasing the risk for CS and CS related complications. Recently there have been several reports from well-resourced countries on increased severe maternal morbidity and even mortality.⁶ The cause is unclear, but increased CSs, increased obesity and an increased proportion of women giving birth in advanced age are among the causes suspected. Cesarean section carries its own risks for maternal and infant morbidity and for subsequent pregnancies.¹ The procedure is associated with significant increases in maternal and infant and mortality, particularly in low income countries. Increase in maternal morbidity particularly prevalent after an emergency CS or a CS performed during the second stage of labor.⁷ A WHO survey of 373 facilities across 24 countries found that unnecessary caesareans were associated with an increased risk of maternal mortality and serious outcomes for mothers and newborn infants, compared with spontaneous vaginal delivery.⁸ Many factors have contributed to the increasing rates of CS including medical and non-medical issues. Medical factors include increases in maternal age and body mass index and changes in obstetric practices and technologies. Non-medical factors include CS requested by the mother, the inappropriate organization of maternity care and physician- induced demand for CS.⁹ There is significant variation in the CS rate in terms of socioeconomic status.¹⁰ A systematic review and meta-analysis of observation studies revealed that the preference for a CS in women is greater than 15%. Recent evidence also shows that the demand for a CS among young, educated women residing in urban areas has increased.¹¹ According to the limited available research, The CS in Bangladesh is considerably higher than the recommended upper limit of 10%.¹² The

proportion of women giving birth by CS in private rather than public facilities also varied widely between settings. In Bangladesh, only 21% of women delivered in a health facility, around half of them in the private/charitable sector, but 73% of private facility births were by caesarean section, in 2011, three in five facility births were delivered by CS which reflects the historical trend that in 2001-2003, nearly half of deliveries in private facilities in Bangladesh were performed by CS.¹³ Data from rural area, socioeconomically disadvantaged communities in three districts of Bangladesh, Bogra, Maulvibazaar and Faridpur, suggest that high CS rates in private facilities are not merely an issue for wealthy urban mothers.

METHODS

This cross sectional observational and descriptive study was conducted among the mothers undergone LSCS in the department of obstetrics & gynecology in Dhaka medical college hospital. Purposive sampling was the method of choice to select the sample from the women undergone LSCS from January 2019 to June 2019. All mothers admitted for elective and emergency cesarean section were included in this study. A pretested, semi structured, interview and observation based, peer reviewed data collection sheet has been prepared to utilize it as an effective tool. Initially all mothers who was admitted for elective or emergency caesarean section was enrolled in the study. Thereafter they were scrutinized to the eligibility criteria. 100 mothers were selected. They would undergo caesarean section after obtaining the informed written consent. Data regarding socio-demographic obstetric and gynecological operative and outcome profile was recorded data collection sheet. Short term complications during hospital stay would observe and their management was provided discharging from the hospital they were asked grab a follow up after 2 months to observe term follow up. Expert opinion was taken from specialists of the department of gynecology & obstetrics department of DMCH, surgery, neonatology, fetomaternal medicine and community medicine. All data was entered and analysis was done to present in tabular and figure form. Frequency distribution and normal distribution of all continuous variables were calculated. Analysis was done by Chi-square test, student's t test using SPSS version 23, p values <0.05 was considered as statistically significant.

RESULTS

The socio-demographic profile of mothers is shown in (Table 1). Out of 100 mothers- 32%, 26%, 22% and 20% mothers were within 20-24 years, 25-29 years, <20 years and ≥30 years of age group respectively. The mean age of the respondents was 25.96±4.43 (age range: 17-39 years). According to educational level, the highest 48% completed education upto SSC level, 29% completed education upto primary level and 3% of the respondent had received higher education. According to occupational status, most of the participants (38%) were housewife.

Table 1: Distribution of mothers according to socio-demographic profile.

Socio-demographic profile n=100	
Maternal age (years)	N
<20	22
20-24	32
25-29	26
≥30	20
Mean age±SD (years)	25.96±4.43
Age range (years)	17-39
Educational status	
Illiterate	14
Primary	29
SSC	48
HSC	6
Graduate & above	3
Occupation	
Housewife	38
Day laborer	10
Farmer	18
Service holder/ garments worker	22
Business	3
Students	6
Others	9
Income status	
Poor	41
Middle class	56
Affluent class	3
Residence	
Urban	48
Rural	52
BMI status	
<18.5	13
18.5-24.9	75
≥25	12
Gestational age	
<37	24
37-40	73
>40	3

Among 100 mothers, 56% were from middle class, 41% were from poor and only 3% were from affluent class. 52% were from rural areas and 48% were from urban areas. According to BMI status, 75% had BMI 18-24.9, 13% had <18.5 and 12% had BMI ≥25.

Among 100 mothers, 59% underwent elective and 41% underwent emergency cesarean section (Figure 1). Among 100 mothers, 56% had para 1-2, 38% had para 3-4 and 6% had para >4 as depicted in (Figure 2). Out of 100 patients, 25% had fetal distress and 21% had mal-presentation single mother had multiple indications in some cases. Besides, APH (19%), pregnancy with hypertensive disorder (16%), prolonged labour and cervical dystocia (14%), placenta previa (12%), PROM and oligohydramnios, postdated pregnancy with oligohydramnios were the other important indications as

depicted in (Table 2). Out of 100 mothers, 67% had uneventful outcome after LSCS as shown in (Table 3).

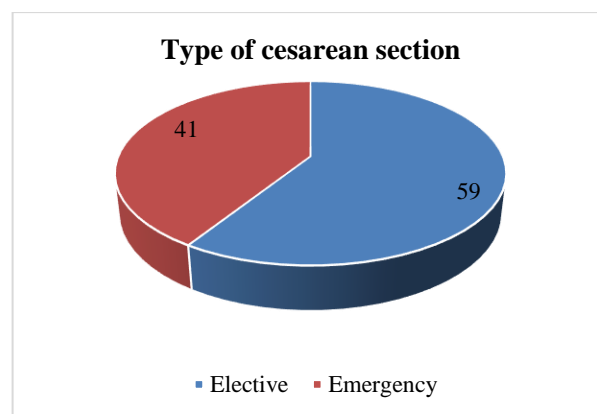


Figure 1: Type of cesarean section (n=100).

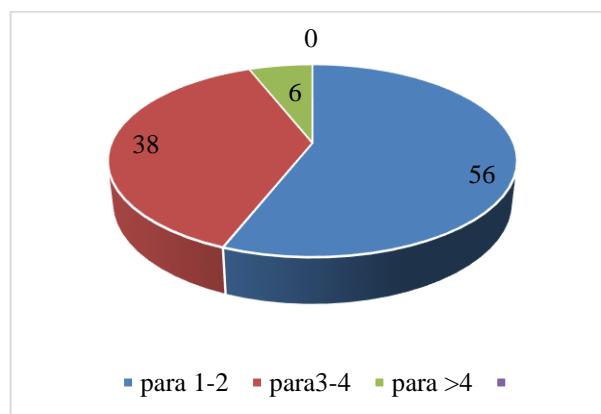


Figure 2: Distribution of mothers according to type of para (n=100).

Rest 33% had post cesarean section complications. Among them 33% mother who had complications, 19 (57.57%), 12 (36.36%), 10 (30.30%) and 8 (24.24%) had wound gap, UTI, GIT complications and haemorrhage respectively. 3 (9.09%) each suffered from thromboembolic complications and septic thrombophlebitis.

Table 2: Distribution of mothers according to indication of LSCS (n=100).

Indications of CS	%
Prolonged labour and cervical dystocia	14
Postdated pregnancy with oligohydramnios	3
Malpresentation	21
PROM & oligohydramnios	6
Fetal distress	25
Placenta previa	12
APH	19
Pregnancy with hypertensive disorder	16

Only one (3.03%) experienced DIC. Out of 33 cases, 27 (81.81%) required conservative treatment and 11 (33.33%)

required adequate rest, 10 (30.30%) required secondary closure as shown in (Table 4). Among them 4 (12.12%) underwent mass closure and (24.24%) received tranexamic acid, (9.09%) received antithrombotic drug. One each underwent excision sinus tract and re-laparotomy.

Table 3: Short term outcome (n=100).

Short term outcome	N (%)
Uneventful	67
Complication	33
Wound gap/ infection	19 (57.57)
UTI	12 (36.36)
GIT complication	10 (30.30)
Hemorrhage	8 (24.24)
Thromboembolic complication	3 (9.09)
Septic thrombophlebitis	3 (9.09)
Spinal headache	2 (6.06)
DIC	1 (3.03)

Table 4: Management of complications (n=33).

Complication management	N (%)
Conservative treatment with	
Inj. Oxytocin	
Blood transfusion	27 (81.81)
Condom catheterization	
Antithrombotic drug	3 (9.09)
Tranexamic acid	8 (24.24)
Secondary closure	10 (30.30)
Mass closure	4 (12.12)
Excision of sinus tract	1 (3.03)
Re-laparotomy	1 (3.03)
Adequate rest	11 (33.33)

DISCUSSION

From all the post caesarean patients in the department of obstetrics and gynaecology in DMCH during study period who fulfilled the criteria, total patients were selected for this study. We have observed the frequency of caesarean section in our hospital last six months was exceptionally high, which was almost 62% of total deliveries in Dhaka Medical College Hospital. These findings were supported by other previous studies.¹⁴ Dhaka college Hospital is the tertiary referral center of Bangladesh. For that reason, here only the critical referred cases from different regions are admitted for better management.

Kaur et al found in their study that the prevalence of caesarean sections was 65% which was higher over vaginal births (35%).¹⁵ Radha et al also found an increasing of caesarean section among physicians' mother of India.¹⁴ Radha et al explained that the rapid socioeconomic changes and the outlook towards medical intervention by the women, families and society are increasingly responsible for the current high incidence of caesarean section in many states and urban centers.¹⁴ The

mean age of respondents was 25.96±4.43 years which was almost similar to a previous Bangladeshi study. More than half of them (58%) were in age group 20-29 years. Aminu et al. found that the mean age of women was 23.5±4.2 years which is nearer to this study.¹⁶

In this study, 59% patients underwent elective cesarean section and 41% underwent emergency cesarean section due to prolonged labour & cervical dystocia (14%), Postdated pregnancy with oligohydramnios (3%), malpresentation (21%), PROM and oligohydramnios (6%), fetal distress (25%) placenta previa (12%), APH (19%), pregnancy with hypertensive disorder (16%). Rahman et al stated that nine risk factors were found significantly associated with type of delivery. Eight of the risk factors i.e., previous C section, pregnancy induced swollen of leg, prolonged labour, maternal education status, maternal age more than 25 years, low birth order, length of baby more than 45cm and irregular intake of a balanced diet remained independently significant for caesarean delivery.¹⁷ Maternal complications were found to be more significant in public hospitals than in private ones. Shehehuddin et al revealed that the rates of population-based and facility based caesarean sections have increased linearly among all age groups of women including adolescents. Although the country's overall (population-based) caesarean section rate among adolescents was within acceptable range (11.6%), a rate of nearly 50% health facility level caesarean sections among adolescent girls is alarming.¹⁸

In this study, out of 33 complicated cases we observed 19(57.57%) wound gap or infection. On the contrary, our findings are contrast to the report of C. Newlin et al where they showed post caesarean section infection rate was 13.1%.¹⁹ It may be due to as their study sample was 559 and it was a retrospective study in advanced settings. Among these 33patients with complications hemorrhage was 24.24%, which occurred from surgical incision and were supported by a previous Bangladeshi study.²⁰ In a study conducted by Chowdhury et al at SSMC and Mitford Hospital, incidence of wound sepsis was 18.28%, anemia 7.1%, which were higher than this study.²¹ Another study was carried out by Begum in 300 cases among the admitted patients of Dhaka medical college hospital & found that wound infection 35.5% which is also higher than this study.²² This study can also be compared with other studies which were undertaken in abroad. A study by Watson et al has got wound infection in only 1.54% cases UTI in 4.64% after emergency caesarean section.²³ In our study, infection was too high in comparison to Chowdhury et al it may be due to very small sample size in our perspective.²¹ Interestingly, all of our patients were adequately managed pre-operatively and preoperatively with blood transfusion as requirements. And preoperative blood loss was negligible. So, anemia in true sense was not observed. 36.36% of our patients suffered from UTI which may be due co morbidity like diabetes mellitus with coexisting wound infection as well as repeated catheterization. This complication was contrast to the

report of Watson et al.²³ In this study, the management approach revealed that conservative treatment with inj. Oxytocin, blood transfusion, Condom catheterization (90.90%), Tranexamic acid secondary closure (30.30%), mass closure (12012%) excision of sinus tract (3.03%), laparotomy (3.03%) and adequate rest (33.33%). Complications from Caesarean sections can result in death or morbidity. Morbidities caused by CS can be either short-term or long-term. So, successful management of post cesarean section complications is very important to reduce morbidity and mortality rate.

Limitations

limitations of current study were, this cross-sectional study is single blinded; single centered study. Due to short duration and small sample size, the study may not proclaim the scenario of whole country.

CONCLUSION

Caesarean section, a major surgical procedure for obstetrical management, however, it still got some morbidity and mortality for the mother and baby. So, it is necessary to take consideration of all the points related to emergency caesarean section along with the factors responsible. With the advancement of technology and expertise wound infection or wound gap is the prime post cesarean complication. Besides, hemorrhage, GIT thromboembolic complications are significant. Injectable antibiotic, wound closure, antithrombotic drug, adequate rest, tranexamic acid, excision of sinus & fistula tract is the common approach of management in case of post cesarean section complications.

Recommendations

A long term multi-centered study in the divisional/tertiary hospitals of whole Bangladesh with multi-disciplinary approach of research work can make the study more precise and authentic in this regard.

ACKNOWLEDGMENTS

Authors are thankful to their colleagues for their thorough, helpful and usually prompt response needed towards the efficient completion of current investigation.

Funding: No funding sources

Conflict of interest: None declared

Ethical approval: The study was approved by the Institutional Ethics Committee

REFERENCES

1. Monitoring obstetric care. Available at: <https://www.who.int/publications/i/item/9789241547734>. Accessed on 20 November 2022.
2. Countdown 2015: building a future and children, the 2012 Report. Available at: <http://countdown>

- 2015Mnch.org/documents/2012-Complete.pdf. Accessed on 20 November 2022.
3. Ronsmans C, De Brouwere V, Dubourg D, Dieltiens G. Measuring the need for life-saving obstetric surgery in developing countries. *BJOG.* 2004;111(10):1027-30.
4. Farchi S, Polo A, Franco F, Di Lallo D, Guasticchi G. Severe postpartum morbidity and mode of delivery: a retrospective cohort study. *Acta Obstet Gynecol Scand.* 2010;89(12):1600-3.
5. Koroukian SM. Relative risk of postpartum complications in the Ohio Medicaid population: vaginal versus cesarean delivery. *Med Care Res Rev.* 2004;61(2):203-24.
6. Schutte JM, Steegers EA, Schuitemaker NW, Santema JG, de Boer K, Pel M, et al. Rise in maternal mortality in the Netherlands. *BJOG.* 2010;117(4):399-406.
7. 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;33(4):270-7.
8. Souza JP, Gülmezoglu AM, Lumbiganon P, Laopaiboon M, Carroli G, Fawole B, et al. Cesarean section without medical indications is associated with an increased risk of adverse short-term maternal outcomes: the 2004-2008 WHO Global Survey on Maternal and Perinatal Health. *BMC Med.* 2010;8(1):1-0.
9. Tollânes MC. Increased rate of Caesarean sections--causes and consequences. *BMC.* 2009;129(13):1329-31.
10. Feng XL, Xu L, Guo Y, Ronsmans C. Factors influencing rising caesarean section rates in China between 1988 and 2008. *Bull World Health Org.* 2012; 90(1):30-9A.
11. Lei H, Wen SIN; Walker M. Determinants of caesarean delivery among women hospitalized for childbirth in a remote population in China. *J Obstet Gynaecol Can.* 2003;25:937-43.
12. Habib HA, Abdulla MM, Yacoub SES. Knowledge and preference of mothers delivering at AL Kadhumyia teaching hospital regarding caesarean section and normal vaginal delivery. *Iraqi Postgrad Med J.* 2011; 10:512-8.
13. Koblinksi M, Anwar L. Mridha MK. Reducing maternal mortality and improving maternal health. *J Health Popul Nutr.* 2008;26:280-94.
14. Radha K, Devi GP, Manjula RV, Chandrasekharan PA. Study on rising trends of caesarean section (c-section): a bio-sociological effect. *IOSR J Dent Med Sci.* 2015; 14(8):10-3.
15. Kaur J, Singh S, Kaur K. Current trend of caesarean sections and vaginal births. *Adv Appl Sci Res.* 2013; 4(4):196-202.
16. Aminu M, Utz B, Halim A, Van Den Broek N. Reasons for performing a caesarean section in public hospitals in rural Bangladesh. *BMC Preg Childbirth.* 2014; 14(1):1-8.

17. Rahman M, Shariff AA, Shafie A, Saaid R, Tahir RM. Determinants of caesarean risk factor in northern region of Bangladesh: a multivariate analysis. *Iranian J Public Health.* 2014;43(1):16.
18. Shahabuddin AS, Delvaux T, Utz B, Bardají A, De Brouwere V. Determinants and trends in health facility-based deliveries and caesarean sections among married adolescent girls in Bangladesh. *BMJ.* 2016; 6(9):e012424.
19. Newlin C, Kuehl TJ, Pickrel A, Cawyer CR, Jones RO. Cesarean section incision complications and associated risk factors: a quality assurance project. *J Obstet Gynecol.* 2015;5(14):789.
20. Sultana R, Nahar A, Akter FM, Sultana R, Ghani A, Yusuf MA. Feto-maternal outcome and complications of emergency caesarean section among the patients admitted at a Tertiary Care Hospital in Dhaka City. *J Obstet Gynecol.* 2016;6(13):874-8.
21. Chowdhury SB, Newaz R, Begum A, Dewan F. Indications and complications of cesarean section: a study of 1083 cases. *Bangladesh J Obstet Gynecol.* 1994;9:1-7.
22. Begum, A. Post caesarean wound infection-an analysis of prevalence and predisposing factors. *Bangladesh Med J.* 1990;19:3-7.
23. Watson WJ, George RJ, Welter S, Day D. High-risk obstetric patients. Maternal morbidity after cesareans. *J Reprod Med.* 1997;42(5):267-70.

Cite this article as: Das M, Ghosh A, Ghosh SR. Post caesarean section complication and its management in Dhaka medical college hospital. *Int J Reprod Contracept Obstet Gynecol* 2023;12:858-63.