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Indication of Operations and Pattern of Referral among Women Presented with Post-Caesarean Section Complications: Experience of Largest Teaching Hospital in Bangladesh

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Abstract

Background: There are several indications for performing the caesarean section. Objective: The purpose of the present study was to see indication of operations and pattern of referral among women presented with post-caesarean section complications. Methodology: This cross-sectional study was conducted in the Department of Obstetrics and Gynaecology at Dhaka Medical College and Hospital, Dhaka, Bangladesh from January 2013 to June 2013 for a period of six months. All women admitted with post caesarean section complications referred from different level of hospitals with the age group of more than or equal to 18 years were included as study population. All relevant data were recorded in a predesigned data collection sheet which included pattern of referral, causes of referral and history of primary operation. Results: A total number of 50 women were included in this study. Maximum (40%) patients were within the age group of 21 to 25 years. For majority caesarean delivery were done for prolonged labor (24.0%) followed by previous one or two caesarean section (16.0%). However, obstructed labour and postdated pregnancy were also reported which were 6(12.0%) cases in each. Maximum cases of CS were performed by practicing doctors (46%). About 48.0% patients came with referral notes from the referring hospitals and majority (52%) were referred without any referral notes. Conclusion: In conclusion the most common indication for referral of women presented with post-caesarean section complications has been performed by practicing doctor for prolonged labor without referral notes in the advice. *[Journal of National Institute of Neurosciences Bangladesh, July 2024;10(2):119-123]*

Keywords: Indication of operations; pattern of referral; post-caesarean section complications

Introduction

World Health Organization recommends that caesarean section rate should not rise to 15.0% in any institution[1]. Caesarean section is a lifesaving technique for both mother and infant; however it is a major abdominal operation that causes medical and operative risks to a mother's health, including infection, hemorrhage and injury to the other organs[2-4]. In the last 20 years, Caesarean Section rates have risen to nearly 25.0% and above in some countries[5]. Maternal mortality rates are 2 to 4 times greater after caesarean section than vaginal birth[6]. Caesarean Section is easily the most common identifiable risk factor for development of puerperal complications. Most of the women are treated conservatively and few women needed relaparatomy[7].

In the last decade, there has been a substantial rise in the utilization of caesarean delivery[8]. Risks of certain peripartum complications have also been associated with caesarean delivery, such as post-operative infection, anesthesia complications, hemorrhage and embolism[9-10]. Women who delivered their first child by caesarean delivery have increased risks for malpresentation, placenta previa, antepartum hemorrhage, placenta accreta, prolonged labour, uterine rupture, preterm birth, low birth weight, and stillbirth in their second delivery[11]. However, some risks may be due to confounding factors related to the indication for the first caesarean, rather than due to the procedure itself [7].

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Caesarean Section complications seem to be occurred when high risk cases are done by less skilled or trainee doctors[12]. At present caesarean delivery is done in different level of hospitals, by different categories of doctors, but earlier it was permitted in tertiary hospital where skilled personals and all sorts of facilities were available. Due to decentralization of medical facilities in different districts and Upazilla Health Complexes, even some cases in rural areas, a number of caesarean section delivery are done by relatively less skilled or trainee doctors. The purpose of the present study was to see indication of operations and pattern of referral among women presented with post-caesarean section complications.

Methodology

Study Settings and Population: This was a hospital based cross-sectional type study. This present study was conducted in the Department of Obstetrics and Gynaecology at Dhaka Medical College and Hospital, Dhaka, Bangladesh from January 2013 to June 2013 for a period of six months. Dhaka Medical College Hospital, Dhaka is the most well-known tertiary referral and teaching government hospital located in the centre of the capital, dealing with all type of obstetrics emergencies referred from urban, peri-urban and rural hospitals and clinics. Numbers of referred cases with post caesarean section complications are increasing day by day in DMCH. There are two separate operations theatre, with 24 hours operation facilities and a good number of experienced doctors and skilled staffs, who all are working round the clock. The patients were referred to Dhaka Medical College Hospital (DMCH) from outside with post caesarean section complications. Purposive sampling technique was used for collection of data. All women admitted with post caesarean section complications referred from different level of hospitals with the age group of more than or equal to 18 years were included as study population. Patients or attendants who were unwilling to give consent to take part in the study were excluded from this study.

Study Procedure: Data were collected during antenatal care like recording of medical history, assessment of individual needs, advice and guidance on pregnancy and delivery, screening tests, education on self-care during pregnancy, identification of conditions detrimental to health during pregnancy, first-line management and referral if necessary. Regular antenatal care is a crucial factor in ensuring the health of both the mother and child throughout pregnancy. The regular antenatal care was minimum four (04) or more antenatal checkup. Irregular antenatal care was less than four (04) antenatal checkup. All relevant data were recorded in a predesigned data collection sheet which included general information of Patient, demographic profile, pattern of referral, previous obstetrics history and obstetrics complications, patient profile on admission, history of primary operation, causes of referral, post-operative investigation, maternal outcome and neonatal outcome. Causes of referral, indications of primary caesarean section and relaparatomy, time interval between caesarean section and hospitalization, type of surgeons, place where primary LUCS were analyzed.

Statistical Analysis: Statistical analyses were performed with SPSS software, versions 22.0 (IBM SPSS Statistics for Windows, Version 22.0. Armonk, NY: IBM Corp.). Continuous data were summarized in terms of the mean, standard deviation, median, minimum, maximum and number of observations. Categorical or discrete data were summarized in terms of frequency counts and percentages.

Ethical Consideration: All procedures of the present study were carried out in accordance with the principles for human investigations (i.e., Helsinki Declaration 2013) and also with the ethical guidelines of the Institutional research ethics. Formal ethics approval was granted by the local ethics committee. Participants in the study were informed about the procedure and purpose of the study and confidentiality of information provided. All participants consented willingly to be a part of the study during the data collection periods. All data were collected anonymously and were analyzed using the coding system.

Results

This hospital based prospective type of study was conducted in Obstetrics and Gynaecology Department of Dhaka Medical College Hospital (DMCH) over a period of six (06) months from January to June 2013. A total number of 50 women who were underwent caesarean section outside DMCH and admitted with post-caesarean section complications were included in this study. Maximum (40%) patients were within the age group of 21 to 25 years. However, about 12(24.0%) cases were in the age group of 26 to 30 years and 11(22.0%) cases were in the age group of less than or equal to 20 years of age group (Table 1).

Different indications of primary caesarean section were recorded. For majority caesarean delivery were done for prolonged labor (24.0%) followed by previous one or two caesarean section (16.0%). However, obstructed

labour and postdated pregnancy were also reported which were 6(12.0%) cases in each. Furthermore, 4(8.0%) cases in each were found in post C-Section placenta praevia, history of C-Section two or more and others like Breech, Oligo, PROM. Again, APH, eclampsia and pre-eclampsia were also found in 2(4.0%) cases in each (Table 2).

Table 1: Distribution of Study Population according to Age Group of Patients

Age Group	Frequency	Percent
≤ 20 Years	11	22.0
21 to 25 Years	20	40.0
26 to 30 Years	12	24.0
31 to 35 Years	4	8.0
≥ 36 Years	3	6.0
Total	**50**	**100.0**

Table 2: Indications of Primary Caesarean Section Delivery (Done Referral Hospital)

Indications	Frequency	Percent
History of previous one C-Section	8	16.0
Eclampsia	2	4.0
Pre-eclampsia	2	4.0
Prolonged labour with foetal distress	12	24.0
Obstructed labour	6	12.0
APH	2	4.0
Postdated Pregnancy	6	12.0
Post C-Section placenta praevia	4	8.0
History of C-Section two or more	4	8.0
Others(Breech, Oligo, PROM)	4	8.0
Total	**50**	**100.0**

Maximum cases of CS were performed by practicing doctors (46%). EOC trained medical officer, junior consultant and trainee doctors were performed in 9(18.0%) cases, 8(16.0%) cases and 7(14.0%) cases respectively (Table 3).

Table 3: Skill Level of Surgeons Performed the Primary CS (Referral Hospital)

Surgeons	Frequency	Percent
Professor	1	2.0
Senior Consultant or Assistant Professor	2	4.0
Junior Consultant	8	16.0
EOC Trained MO	9	18.0
Trainee doctors	7	14.0
Practicing doctors having no institutional training	23	46.0
Total	**50**	**100.0**

Most of the CS were performed in the private clinic which was 30(60.0%) cases. Next to this was the district hospital where 17(34.0%) cases CS performed. However, 2(4.0%) cases were performed in Upazilla Health Complex (UHC) (Table 4).

Table 4: Place of Primary Operation (LUCS)

Place of Primary Operation	Frequency	Percent
Upazilla Health Complex(UHC)	2	4.0
District Hospital	17	34.0
Private Clinic	30	60.0
Medical College Hospital	1	2.0
Total	**50**	**100.0**

Time interval from primary C-Section to hospitalization were recorded. Maximum (44.0%) referred cases were admitted in Dhaka Medical College Hospital (DMCH) at or after 24 hours of primary caesarean section. Time interval of 5 to 12 hours was found in 16(32.0%) cases. However, within 4 hours was recorded in 8(16.0%) cases (Table 5).

Table 5: Time Interval from C-Section to Hospitalization at DMCH (Referral Hospital)

Time Interval	Frequency	Percent
Within 4 hours	18	16.0
5 to 12 hours	16	32.0
13 to 24 hours	4	8.0
≥24 hours	22	44.0
Total	**50**	**100.0**

About 48.0% patients came with referral notes from the referring hospitals and majority (52%) were referred without any referral notes (Table 6).

Table 6: Status of Presence of Referral Note in Advice

Referral Note	Frequency	Percent
Given	24	48
Not given	26	52
Total	**50**	**100.0**

The causes of referral and diagnosis on admission were recorded. Majority of the patients were referred for primary post-partum hemorrhage (22.0%) and internal hemorrhage (22.0%) followed by shock with anuria and secondary post-partum hemorrhage (16.0%). Subrectal hematoma was diagnosed in 3(6.0%) cases. Disseminated intravascular coagulation, puerperal sepsis, anaesthetic complications and wound infection were found in 2(4.0%) cases each (Table 7).

Table 7: Diagnosis at the Time of Admission at DMCH

Variables	Frequency	Percent
Primary PPH	11	22.0
Hypovolemic Shock and Anuria	8	16.0
Abdominal Distension	11	22.0
Secondary PPH	8	16.0
DIC	2	4.0
Puerperal Sepsis	2	4.0
Wound Infection	2	4.0
Injury to Viscera	1	2.0
Subrectal Hematoma	3	6.0
Anaesthetic Complications	2	4.0
Total	**50**	**100.0**

Anaesthetic complications=delayed recovery, cardiac arrest; Injury to the viscera like Bladder, Ureters and Intestine; PPH=Post-partum Hemorrhage; DIC=Disseminated Intravascular Coagulation; Abdominal Distension for Suspected Internal Hemorrhage

Discussion

This study represents an effort to analyze the outcome and management of 50 cases of major post caesarean section complications done outside and referred to Dhaka Medical College Hospital (DMCH) in the Obstetrics and Gynaecology Department within the period from January to June 2013. DMCH is a well reputed tertiary level referral hospital having specialized care for all disciplines and 24 hours emergency, ICU, CCU and NICU supports. It has a wide catchment area, due to decentralization of comprehensive emergency obstetrics care; a lot of patients were managed at districts and sub-districts level on emergency basis and mostly are high risk pregnancy. So, patients with post caesarean complications were referred always at critical conditions.

This study showed maximum patients were from age group of 21 to 25 years. Habib[12] studied showed maximum patients from age group 30 to 35 years out of total 754 cases. This study showed that 52.0% cases had regular antenatal checkup. Krukowski et al[13] showed in his study that 95.0% patients had regular antenatal checkup.

Different indications of primary caesarean section were recorded. For majority caesarean delivery were done for prolonged labor (24.0%) followed by previous one or two caesarean section (16.0%). However, obstructed labour and postdated pregnancy were also reported which were 6(12.0%) cases in each. Furthermore, 4(8.0%) cases in each were found in post C-Section placenta praevia, history of C-Section two or more and others like Breech, Oligo, PROM. Again, APH, eclampsia and pre-eclampsia were also found in 2(4.0%) cases in each

In Ghana study[14], commonest indication of primary CS where relaparatomy needed was prolonged labour and obstructed labor, and the commonest indication of relaparatomy was PPH due to uterine atony. The study in India[15] also showed the same result where the commonest indication of primary CS was prolonged and obstructed labor and the commonest reason for relaparatomy was PPH. This study revealed that the commonest indication of primary CS was prolonged labor with foetal distress (24.0%) followed by previous one or two CS. Primary PPH and internal hemorrhage were the commonest reason for relaparotomy in this study similar to the findings of other studies[11,13].

Time interval from primary C-Section to hospitalization were recorded. Maximum (44.0%) referred cases were admitted in Dhaka Medical College Hospital (DMCH) at or after 24 hours of primary caesarean section. Time interval of 5 to 12 hours was found in 16(32.0%) cases. However, within 4 hours was recorded in 8(16.0%) cases. Maximum cases of CS were performed by practicing doctors (46%). EOC trained medical officer, junior consultant and trainee doctors were performed in 9(18.0%) cases, 8(16.0%) cases and 7(14.0%) cases respectively. This study found, maximum (46.0%) caesarean section were done by practicing doctors having no institutional training. Habib[12] study found 84.2% surgery were done by register and 9.95% by residents (trainees).

Most of the CS were performed in the private clinic which was 30(60.0%) cases. Next to this was the district hospital where 17(34.0%) cases CS performed. However, 2(4.0%) cases were performed in Upazilla Health Complex. Education of patients, improving antenatal facilities of primary health provider, early referral and good transport system and improved diagnostic skills are suggested to reduce the number of emergency caesarean section and thus decrease the risks and complications associated with such cases.

Conclusion

In conclusion the most common indication for referral of women presented with post-caesarean section complications has been performed by practicing doctor. However, the most common indications of referral are prolonged labor followed by previous one or two caesarean section. However, obstructed labour and postdated pregnancy are also reported. Post C-Section

placenta praevia, history of C-Section two or more and others like Breech, Oligo, PROM are also reported. Although caesarean section is one of the commonest obstetrical operations done even in primary care level (Upazilla Health Complex), every operation should have a valid indication with adequate risk assessment of the patients with appropriate professional skill of the surgeon. Further large-scale study should be conducted.

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Conflict of interest
None

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Contribution to authors
Sharmin N, Begum A, Afreen S: Concept of paper; Protocol preparation; data collection; data analysis; paper writing; Sharmin N, Begum A: data collection; paper writing; Sharmin N: statistical analysis, paper writing; Akhter J, Akter A, Ferdousi QH: Manuscript revision; All authors read and approved the final version of the manuscript.

Data Availability
Any inquiries regarding supporting data availability of this study should be directed to the corresponding author and are available from the corresponding author on reasonable request.

Ethics Approval and Consent to Participate
Ethical approval for the study was obtained from the Institutional Review Board. As this was a prospective study the written informed consent was obtained from all study participants. All methods were performed in accordance with the relevant guidelines and regulations.

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