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Primary Caesarean Delivery in Multigravida Women with Previous Vaginal Births: A Retrospective Study

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Abstract

Background: Primary caesarean delivery in a multigravida refers to the first caesarean birth in a woman who has previously experienced vaginal birth. Although previous vaginal delivery is generally reassuring for subsequent labour, multiparous women may develop new obstetric complications requiring caesarean delivery.

Objective: To assess the frequency of primary lower-segment caesarean section (LSCS) among multigravida women with previous vaginal birth and to describe the indications, maternal complications and neonatal outcomes.

Methods: A retrospective observational study was conducted at a tertiary care centre in Hubballi, Karnataka, reviewing deliveries during 2023–2024 at KIMS Hubli. Women with multigravida and gestational age beyond 28 weeks who had a previous vaginal birth and underwent their first caesarean delivery were included. Women with previous caesarean delivery and other predefined exclusions were excluded. Data regarding demographic profile, parity, type of caesarean, indications, maternal complications and neonatal outcomes were analyzed descriptively.

Results: During the study period, 9,036 deliveries occurred, including 3,594 LSCS deliveries. Primary LSCS in multigravida women accounted for 362 cases,

representing approximately 4.0% of all deliveries and 10.1% of all LSCS deliveries. Most women were 25–30 years old (55%) and gravida 2 (78%). Emergency caesarean delivery accounted for 97% and elective caesarean delivery for 3%. Malpresentation (40%) and fetal distress (32%) were the leading indications, followed by antepartum haemorrhage (12%), obstructed labour (14%) and twin pregnancy (2%). Maternal complications included postpartum haemorrhage (10%), pyrexia (4%) and other complications (1%). Recorded neonatal complications included birth asphyxia (4%), transient tachypnoea of the newborn (5%), neonatal mortality (1%) and meconium aspiration syndrome (6%).

Conclusion: Primary LSCS in multigravida women constituted a clinically important proportion of caesarean deliveries. Malpresentation and fetal distress were the predominant indications in this study. Careful antenatal surveillance and intrapartum assessment remain important even in women with a history of previous uncomplicated vaginal births.

Keywords: primary caesarean section; multigravida; multiparous women; previous vaginal delivery; malpresentation; fetal distress; maternal outcome; neonatal outcome.

Introduction

Caesarean delivery is one of the most frequently performed major obstetric procedures worldwide. Primary caesarean delivery in a multigravida is distinct from a repeat caesarean because the woman has no previous uterine scar, despite having had one or more previous pregnancies and usually at least one vaginal birth. Previous vaginal birth does not eliminate the possibility of new complications in a subsequent pregnancy or labour, including malpresentation, antepartum haemorrhage, fetal compromise, obstructed labour and multiple pregnancy.[1–3]

The clinical importance of studying this group lies in the fact that the indication for the first caesarean may influence counselling and management in future pregnancies. A primary caesarean creates a uterine scar and may subsequently increase the complexity of obstetric care because of risks such as placenta previa/accreta spectrum, uterine rupture and repeat caesarean delivery. [4,5]

Published studies from India and other South Asian settings have reported considerable variation in the frequency and indications of primary caesarean delivery among multiparous women. Fetal distress and malpresentation are consistently reported among the leading indications, although the relative proportions differ according to population and referral pattern.[1–3,6]

The present study was undertaken to evaluate primary LSCS among multigravida women with previous vaginal births at a tertiary care centre in Hubballi, with particular emphasis on indications and immediate maternal and neonatal outcomes.

Aim And Objectives

Objective: To study the frequency of primary LSCS among multigravida women with previous vaginal births during the study period.

Materials And Methods

Study design and setting

This was a retrospective observational study conducted in the Department of Obstetrics and Gynaecology at a tertiary care centre in Hubballi, Karnataka, India.

Study period

The study included deliveries occurring during the period 2023–2024.

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Study population

The study population comprised multigravida women beyond 28 weeks of gestation with a history of previous vaginal birth who underwent their first LSCS during the study period.

Inclusion criteria

Multigravida women with gestational age >28 weeks, previous vaginal birth, and no previous caesarean scar, who underwent primary LSCS during the study period.

Exclusion criteria

Women with previous caesarean delivery, previous abortions and medical illness were excluded

Data collection

Information was obtained retrospectively from hospital records/data registers. Variables recorded included total number of deliveries, total LSCS, number of primary LSCS among multigravidas, maternal age, gravida, type of caesarean delivery, indications for caesarean delivery, maternal complications and neonatal complications.

Statistical analysis

Data were summarized using descriptive statistics. Categorical variables are presented as percentages. The frequency of primary LSCS was calculated in relation to total deliveries and total LSCS during the study period.

Results

A total of 9,036 deliveries were recorded during the study period. Of these, 3,594 were LSCS deliveries. Primary LSCS among multigravida women accounted for 362 cases. Thus, primary LSCS in this study represented approximately 4.0% of all deliveries and 10.1% of all LSCS deliveries.

The majority of women undergoing primary LSCS were 25–30 years old (55%). Women younger than 25 years constituted 30%, those aged 30–35 years constituted 10%, and those older than 35 years constituted 5%. Gravida 2 women comprised the largest group (78%), followed by gravida 3 (18%) and gravida 4 (4%).

Emergency LSCS constituted 97% of the primary caesarean deliveries, whereas 3% were performed as Elective procedures.

Malpresentation was the most frequently recorded indication (40%), followed by fetal distress (32%). Other recorded indications were obstructed labour (14%), antepartum haemorrhage (12%) and twin pregnancy (2%).

The recorded maternal complications were postpartum haemorrhage (10%), pyrexia (4%) and other complications (1%). Recorded neonatal complications included birth asphyxia (4%), transient tachypnoea of the newborn (5%), neonatal mortality (1%) and meconium aspiration syndrome (6%).

Table 1: Overall delivery profile during the study period

Parameter	Number	Percentage
Total deliveries	9,036	100
Total LSCS	3,594	39.8% of all deliveries
Primary LSCS in multigravida	362	4.0% of all deliveries
Primary LSCS among all LSCS	362	10.1% of LSCS

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Table 2: Demographic and obstetric profile of women undergoing primary LSCS

Variable	Category	Percentage
Age	<25 years	30%
	25–30 years	55%
	30–35 years	10%
	>35 years	5%
Gravida	G2	78%
	G3	18%
	G4	4%
Type of LSCS	Emergency	97%
	Elective	30%

Table 3: Indications for primary LSCS

Indication	Recorded percentage
Malpresentation	40%
Fetal distress	32%
Obstructed labour	14%
Antepartum haemorrhage	12%
Twin pregnancy	2%

Table 4: Maternal complications following primary LSCS

Complication	Recorded percentage
Postpartum haemorrhage	10%
Pyrexia	4%
Other complication	1%

Table 5: Recorded neonatal complications

Neonatal outcome/complication	Recorded percentage
Birth asphyxia	4%
Transient tachypnoea of the newborn	5%
Neonatal mortality	1%
Meconium aspiration syndrome	6%

Discussion

The present study demonstrates that primary LSCS among multigravida women remains clinically relevant even in women with previous vaginal births. Among 9,036 deliveries, 362 women underwent primary LSCS, corresponding to approximately 4.0% of all deliveries and 10.1% of all LSCS. The frequency is within the broad range reported in studies from tertiary-care settings, although direct comparison is affected by

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differences in inclusion criteria, referral patterns and definitions.[1–3,6]

In the present cohort, gravida 2 women formed the largest group (78%), followed by gravida 3 and gravida 4. Similar predominance of second gravida women has been reported in other studies of primary caesarean delivery among multiparous women.[1,3]

Malpresentation was the leading recorded indication (40%), followed closely by fetal distress (32%). Other published Indian studies have similarly identified fetal distress and malpresentation as major indications, although their ranking varies. A recent tertiary-care study from Punjab reported fetal distress as the leading indication followed by malpresentation, while an earlier study from Mangalore also found fetal distress and malpresentation to be the predominant indications.[1,6]

The high proportion of Emergency procedures in the present dataset (97%) is notable. This is same from several published series in which emergency caesarean delivery predominated.

The maternal complications recorded in this study included postpartum haemorrhage, pyrexia and other complications. Caesarean delivery, while often necessary and lifesaving, carries recognized short-term maternal morbidity including haemorrhage, infection and wound complications. WHO guidance on reducing unnecessary caesarean sections emphasizes balancing the benefits of medically indicated caesarean delivery against potential maternal and neonatal harms.[7]

The neonatal data showed recorded rates of meconium aspiration syndrome, transient tachypnoea and other respiratory/birth-related complications, with neonatal mortality recorded at 1%. However, the available dataset does not provide absolute neonatal numbers, birth weights, gestational-age distribution, Apgar scores or NICU admission details. These variables would strengthen the neonatal outcome analysis if they can be retrieved from the original records.

An important strength of this study is that it focuses specifically on women undergoing their first caesarean after previous vaginal birth, a group that can be overlooked when caesarean audits are dominated by women with previous uterine scars. The study also provides a local tertiary-care snapshot of indications and immediate outcomes.

The major limitations are the retrospective design, single-centre setting, relatively limited variable set and absence of individual-level data. No multivariable analysis could be performed.

Conclusion

Primary LSCS among multigravida women with previous vaginal births constituted approximately 4.0% of all deliveries and 10.1% of all LSCS in this tertiary-care study. Malpresentation and fetal distress were the leading recorded indications. Although previous vaginal birth is reassuring, it does not eliminate the risk of significant obstetric complications in subsequent pregnancies. Appropriate antenatal surveillance, timely recognition of malpresentation and placental/fetal complications, and careful intrapartum assessment may help optimize decision-making and maternal and neonatal outcomes.

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