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CASE SERIES

A Case Series on Complete Placenta Previa in Third Trimester- Risk Factors, Clinical Features and Management

K. Sharmila*, Vinitha Padmini Mary and Shanthi K. Elango

Department of Obstetrics and Gynaecology, Government Stanley Medical College, Chennai - 600001, Tamil Nadu, India; sharmilakrishnamoorthy3@gmail.com

Abstract

Placenta previa is defined as a placenta that lies wholly or partially within the lower uterine segment. It occurs when the blastocyst is implanted low in the uterine cavity. It is associated with previous placenta previa, advancing maternal age, increasing maternal parity, large placental size, uterine scars like previous caesarean section or myomectomy, smoking and placental pathology such as marginal cord insertions and succenturiate lobes. This is a retrospective observational study. 15 cases of complete placenta previa were studied for a period of 6 months from January 2024 to June 2024, taken from the RSRM hospital medical records department, and a case report was prepared. With the rising incidence of caesarean sections combined with increasing maternal age, the number of cases of placenta previa and its complications, including placenta accreta, is likely to continue to increase. Hence, it becomes essential to diagnose placenta previa early and plan appropriate management.

Keywords: Complete Placenta Previa, Diagnosis of Placenta Previa, Placenta Previa Management

1. Introduction

Placenta previa is the term used when the placenta implants fully or partly in the lower uterine segment. Placenta previa is responsible for around one-third of antepartum haemorrhage. Painless haemorrhage is the most common symptom of placenta previa, and it often does not show up until the last few weeks of the second trimester or later[1]. Placenta previa bleeding is characterised by its abrupt onset, painlessness, apparent causelessness, and recurrence. Because hemorrhagic shock, surgical procedures, and sepsis are more common, it is linked to higher rates of maternal morbidity and death. Preterm delivery and its associated consequences, such as low birth weight, birth asphyxia, and newborn sepsis, increase the risk of perinatal death and morbidity.

Placenta previa affects around 1 in 300 births[2]. The risk of placenta previa rises with maternal age. In severe cases, it is 1 in 1500 for women who are 19 years of age or younger and 1 in 100 for those who are over 35[3]. Previa is linked to multiparity. Placenta previa is more likely to occur after a previous caesarean birth[4]. The incidence rises to 4.1% with three or more previous caesarean sections from 1.9% with two[5]. Transabdominal sonography offers placental localisation in the easiest, most accurate, and safest manner (image 1). There is an increased risk of maternal morbidity and death due to an increased incidence of postpartum haemorrhage, an increased incidence of operative procedures, and an increased incidence of antepartum haemorrhage, which may cause maternal shock and its aftermath (image 2).

2. Aims and Objectives

- To study the risk factors, clinical features, maternal outcomes and fetal outcomes in 3rd trimester.
- To determine the incidence of placenta accreta by MRI and to study its maternal and fetal outcomes.

*Author for correspondence

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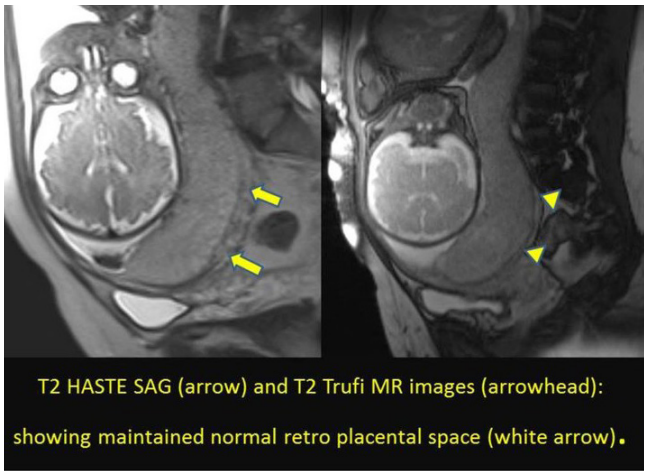

Image 1. MRI image showing complete placenta previa.

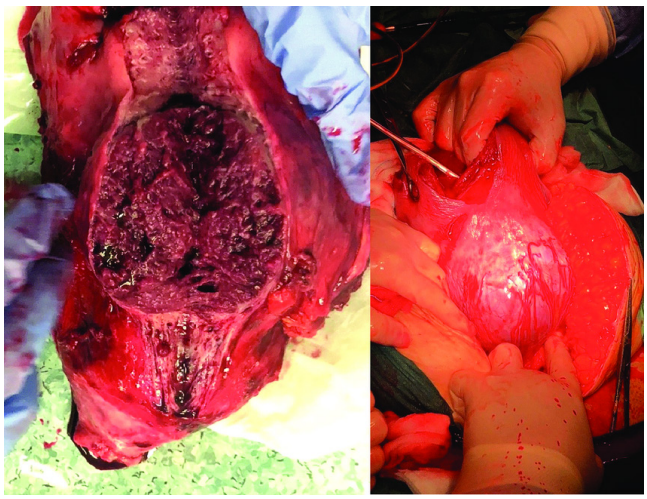

Image 2. Cross section of uterus with adherent placenta.

3. Review of Literature

Faiz *et al.*,[6] reported disparate data on the prevalence rate as well as risk factors associated with placenta previa--a major cause of third-trimester bleeding. The overall prevalence rate of placenta previa was 4.0 per 1000 births, with the rate being higher among cohort studies (4.6 per 1000 births). Martina *et al.*,[7] evaluated the incidence, potential risk factors and the respective outcomes of pregnancies with placenta praevia. 328 patients with placenta praevia were identified. The province wide incidence of placenta praevia was 0.15%. Maternal morbidity was high (ante-partum bleeding [42.3%], post-partum hemorrhage [7.1%], maternal anemia [30%], comorbid adherent placentation [4%], and hysterectomy [5.2%]) and neonatal complications were frequent (preterm birth [54.9%], low birth weight <2500 g [35.6%], Apgar-score after five minutes <7 [5.8%], and fetal mortality [1.5%]. Marya *et al.*,[8] examined outcomes including preterm delivery and perinatal complications. Among the 38,540 women, 230 women had previas (0.6%). Compared to controls, pregnancies with previa were significantly associated with preterm delivery prior to 28 weeks (3.5% vs. 1.3%; $p = 0.003$), 32 weeks (11.7% vs. 2.5%; $p < 0.001$), and 34 weeks (16.1% vs. 3.0%; $p < 0.001$) of gestation. Patients with previa were more likely to be diagnosed with postpartum hemorrhage (59.7% vs. 17.3%; $p < 0.001$) and to receive a blood transfusion (11.8% vs. 1.1%; $p < 0.001$).

4. Materials and Methods

Study Design: Hospital based retrospective cohort study.
Study Centre: Govt RSRM Lying in Hospital.
Study Period: 6 months (January 2024 to May 2024).

This study includes 6 cases of complete placenta previa during the third trimester in pregnant patients from January to May 2024 in RSRM hospital. All cases were diagnosed to have complete placenta previa by expert ultrasound and MRI pelvis. Case records were taken from the Medical Records Department, studied, and a case report was prepared.

5. Results (Including Observation)

The mean age distribution of the patients was calculated. 1 patient <20years, 3 patients were in 21-25 years, 6 patients were in 26-30 years, and 5 patients were in 30-35years. The mean age of the patients is 28.06 years. Most patients were between 26-30 years.

The parity of these patients was calculated, and the percentile depicted. 4 patients were primi gravida, 7 patients were second gravida, 2 patients were third gravida, and 2 patients were fourth gravida. Majority were second gravida (Figure 1).

The gestational age at the time of caesarean section was calculated. 9 patients were 36-38weeks, 3 patients between 38-40 weeks, 2 patients between 32-34 weeks and 1 patient between 34 to 36 weeks.

Table 1. Case Chart

Sno	Age	Diagnosis	Ga at Diagnosis	Ga at The Time of Lscs	Fetal Outcome	Previous Delivery	Comorbidities	Mode of Delivery and Associated Procedures	Blood Transfusion
1	27	G2P1L1	38w2d	38w 2d	Alive boy 3kg	LSCS	Anemia	LSCS+B/L uterine artery ligation	1 pc
2	23	PRIMI	32w	35Weeks	Alive boy 2.3kg			LSCS	-
3	24	G3P1L1A1	37w	37w5d	Alive girl 2.8kg	NVD	Anemia	LSCS+B/L uterine artery ligation	1pc
4	28	G2P1L1	38w1d	38w1d	Alive boy 3.2kg	LSCS	Anemia	LSCS+B/L uterine artery ligation	1pc
5	33	G2P1L1	38w	38w	Alive girl 3kg	LSCS	GDM	Caesarean Hysterectomy	3pc and 4 ffp
6	32	G4P1L2A1	28w	37w2d	Alive boy 2.9kg	LSCS	GDM	LSCS + B/L internal iliac artery ligation	2pc and 4 ffp
7	28	G2P1L1	32w	38w4d	Alive boy 3.2kg	NVD	GHTN	LSCS	-
8	22	G3P1L1A1	36w	37w	Alive girl	NVD		LSCS	-
9	32	G2P1L0	28w	33w5d	Alive girl 2.2kg	LSCS	Anemia	Caesarean Hysterectomy	2pc and 4ffp
10	27	G2P1L1	32w	37w4d	Alive boy 2.8kg	NVD	GDM	LSCS	-
11	18	PRIMI	36w	38w5d	Alive girl 3.1kg		Anemia	LSCS + B/L internal iliac artery ligation	2pc
12	29	PRIMI	32w	37w4d	Alive boy 2.7kg		GDM	LSCS+B/L uterine artery ligation	1pc
13	33	G2P1L1	31w	32w5d	Alive boy 1.8kg	LSCS	GHTN	LSCS	-
14	30	PRIMI	29w	36w	Alive girl 2.4kg			LSCS	-
15	35	G4P2L2A1	30w	36w3d	Alive girl 2.8kg	2 LSCS	GHTN	Caesarean Hysterectomy	3pc and 4 ffp

Higher number of patients were observed between 36-38 weeks. The previous mode of delivery of these patients was also studied. 7 patients (58%) had previous LSCS deliveries, and 4 patients had previous normal deliveries (Figure 2).

Comorbidities also significant effect on the incidence of complications in placenta previa. They have been studied and depicted. 5 patients had anemia, 4 patients had GDM, and 3 patients had GHTN (Figure 3).

Mode of delivery and the associated procedures done during delivery are depicted below. 3 patients were proceeded to caesarean hysterectomy, 2 patients were managed with B/L internal iliac artery ligation, 4 patients had B/L uterine artery ligation, and 6 patients had LSCS alone (Figure 4).

The birth weight of the babies was studied, and their percentiles were calculated. 8 babies were between 2.5-3 kg, 3 babies were between 2-2.5 kg, 3 babies were

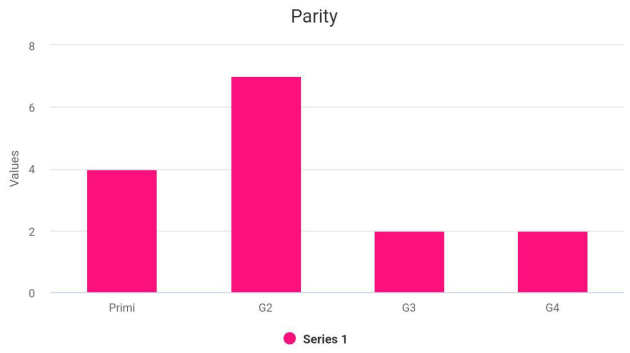

Figure 1. Parity and placenta previa.

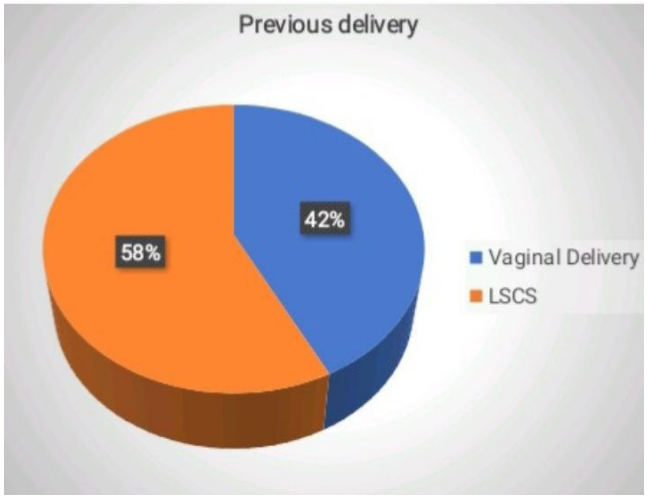

Figure 2. Mode of delivery among the study group.

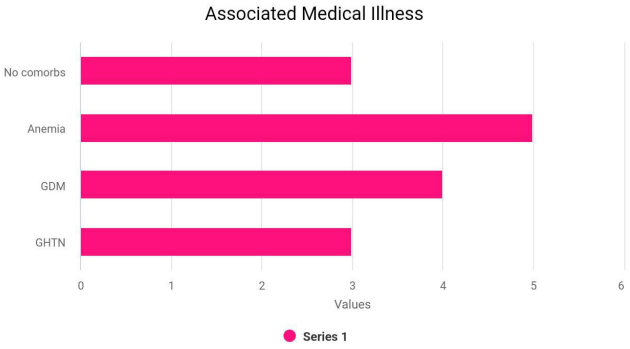

Figure 3. Associated medical illness and placenta previa among the study group.

between 3-3.5 kg, and 1 baby was <2kg. Majority of the babies were of normal birth weight (Figure 5).

Out of 7 previous LSCS cases, 3 of them proceeded to caesarean hysterectomy. 2 of them had uterine artery ligation, 1 had internal iliac artery ligation, and 1 had LSCS alone (Figure 6).

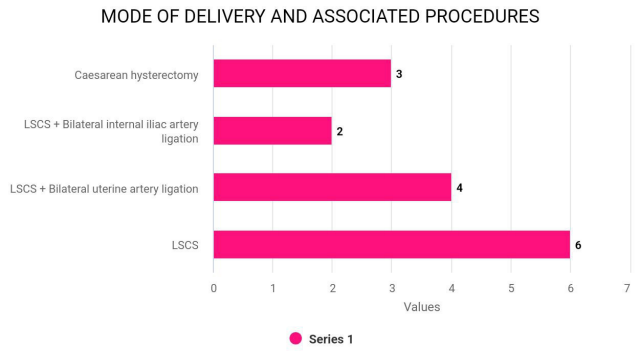

Figure 4. Mode of delivery and associated procedures among patients with placenta previa.

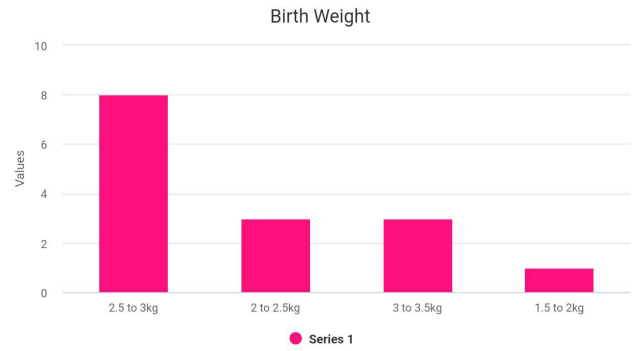

Figure 5. Birth weight of babies of patients with placenta previa.

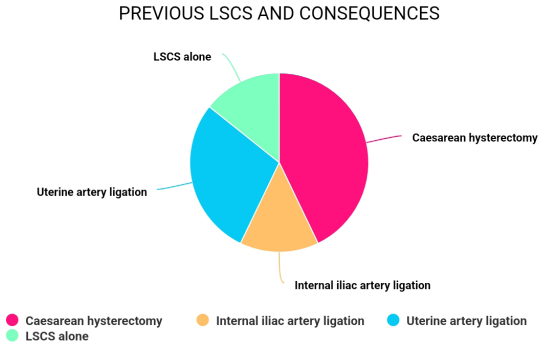

Figure 6. Consequences of patients with previous lscs and placenta previa.

6. Discussion

Since placenta previa is associated with adverse maternal and neonatal outcomes, evaluation of the risk factors is of paramount importance. Nearly one fourth of the women in this research were older than thirty, and 79%

of them were multiparas. These findings are consistent with the study done by Ancona S *et al*[9]. Majority of the patients in this research had gestational ages more than 34 weeks at delivery. Mean age of delivery was 37.1 weeks which is consistent with the study done by E. Sheiner *et al*.,[10]. 52% of the women had previous LSCS.

According to Souhail *et al*., study[11], the likelihood of placenta previa during a procedure after caesarean procedure is 1-4 % According to Zhang *et al*.,[4] women with previous uterine scar are 1.8 times more likely to have placenta previa. 6 patients had only LSCS, 4 patients had bilateral uterine artery ligation, 2 patients had internal artery ligation, and 3 patients had hysterectomies. Only 26% of infants in our sample weighed <2.5 kg, which is consistent with the study of Zhanghna's (1992). 3 of the 7 previous LSCS cases proceeded to caesarean hysterectomy.

7. Conclusion

Placenta previa is associated with independent risk factors, including multiparity, past caesarean section, abortions, and advancing maternal age. A rise in the frequency of complex pregnancies with placenta previa is likely due in part to an increase in the prevalence of these risk factors. Perinatal and maternal outcomes are negatively impacted by placenta previa, which continues to be a risk factor for a number of maternal problems. The identification of placenta previa ought to prompt a thorough assessment and prompt delivery to mitigate the related difficulties for both the mother and the foetus. The reduction of primary LSCS rates is of utmost importance as many of the previous LSCS cases have grave complications.

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