

RISING FREQUENCY OF PLACENTA PREVIA AND ASSOCIATED MORBIDITY IN WOMEN WITH PREVIOUS CAESAREAN SECTION

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ABSTRACT

Objective: To determine rising frequency of placenta previa and its associated morbidity in women with previous caesarean section.

Study Design: Cross sectional study.

Place and Duration of Study: This study was conducted in the Department of Obstetrics & Gynecology at CMH Kohat from Jul 2010 to Jun 2011.

Patients and Methods: This study included all pregnant women undergoing repeat caesarean sections. Of these, total 74 patients were admitted with placenta previa. The frequency and associated morbidity were determined.

Results: In our study 74 patients with placenta previa were included. 71.62% were less than 35 yrs of age, while 28.38% were equal to or more than 35 years. The gestational age at presentation was 24–36 weeks in 74.3% and 37 + weeks in 5.7% at presentation, 89% patients were symptomatic and 11% were asymptomatic. The morbidities observed were placenta accrete 47%, urinary tract trauma in 63.51%, caesarean hysterectomy in 62.16%, post operative febrile morbidity in 77.03%, maternal mortality was nil, paralytic ileus in 28.38%, PPH in 82.43%, surgical site infection in 16.21%.

Conclusion: Frequency of placenta previa and its associated morbidity was raised due to repeated caesarean section rate which must be reduced to decrease maternal morbidity and mortality.

Keywords: Caesarean section, Morbidity, Placenta previa.

INTRODUCTION

With the advancement in modern obstetrics, there is a rise in caesarean section rate. Caesarean section is a major surgical procedure, and should be performed only when indicated. This "CS epidemic" deserves international concern as it is not absolutely risk free, and brings with it inherent maternal morbidity, in particular the disorders of placentation¹⁻³.

Normal placental implantation is decidual in the upper uterine segment. When placenta implants over or near to the internal os in the lower uterine segment, it is referred to as placenta previa, while term placenta accreta is used to refer to a placenta that has abnormal uterine adherence⁴⁻⁶. Placenta previa is one of serious pregnancy complications and a leading cause of APH, PPH, premature delivery and consequent maternal and neonatal morbidity and mortality^{7,8}. Placenta accreta might end up in massive obstetric hemorrhage with resultant

complications such as DIC, Obstetrical hysterectomy, iatrogenic damage to bladder, ureters or other viscera, renal failure, ARDS, and eventually death⁹. Blood loss due to placenta accreta is extensive, sometimes as high as 3-5 litres, ending up mostly in obstetrical hysterectomy¹⁰. Among the most frequently reported risk factors of placenta previa and morbidly adherent placenta are surgeries resulting in endometrial or myometrial damage, high parity, and most importantly previous placenta previa¹¹.

With a caesarean rate of around 25%-30%, placenta previa affects about 0.4%-0.6% while, placenta accreta affects 0.04%-0.1% of all pregnancies in developed countries¹¹⁻¹⁴.

In 1985, WHO made a consensus recommendation suggesting optimal caesarean rate of 10-15%¹. This recommendation is being challenged by many consultants around the globe with the argument that lowering the CS rate might be dangerous for mother and the baby¹⁵. Efforts to cut short the escalating caesarean rate have failed, and the rate is ever rising¹. Most of the literature available on internet addressing the same issue, however,

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appears to be old.

This study was conducted to document the rising frequency of placenta previa and its associated morbidity in women with previous caesarean section keeping in view an ever rising rate of repeat caesarean in the cases previously managed at peripheral centers by midwives and GPs.

PATIENTS AND METHODS

This cross sectional, observational study was conducted in the Department of Obstetrics & Gynaecology at CMH Kohat from Jul 2010 to Jun 2011. This study included all pregnant women undergoing caesarean sections either elective or in emergency. All of the patients having major degree of placenta previa irrespective of past obstetric history were included. Patients undergoing SVDs, and those undergoing VBACs were excluded. All the patients underwent thorough history, examination and investigations, including ultrasonic diagnosis of placenta previa and/or accreta. Data collected included booking status, maternal age, parity, gestational age at caesarean section, no of previous caesarean sections, previous history of uterine curettage, any history of antepartum or postpartum hemorrhage, previous miscarriages and any other uterine surgeries. Diagnosis of placenta previa and accreta was made on ultrasonography in antenatal period and confirmed at surgery. Placenta accreta was identified on Ultrasound by loss of sub-endometrial halo while keeping a particularly high index of suspicion in an anteriorly located low lying placenta and confirmed on surgery by morbid adherence of placenta to uterine wall in varying degrees. Patients presenting with moderate to severe antepartum hemorrhage were managed with emergency caesarean section, irrespective of duration of pregnancy while those with mild or no hemorrhage were managed conservatively under observation till 37 completed weeks and then delivered by caesarean section. Keeping in view the limited transfusion facilities, those patients with placenta accreta identified either pre or per operatively were managed aggressively in the event of massive hemorrhage with an earlier

recourse to caesarean hysterectomies. The outcome measures studied were maternal morbidity, including extent of blood loss and difficulty in surgery and maternal mortality.

RESULTS

Our study population consisted of 1231 Caesarean sections, of which 74 patients (6.01%) had Placenta previa. The caesarean rate in the subject population was 47.57%, with the repeat caesarean rate being 98.38%, and a VBAC rate of less than 2%. Vigorous attempts at VBAC were not being practiced at our set up as most of the previous caesarean deliveries were conducted at periphery and previous operative details were not available in nearly 99% of the cases and resources for continuous electronic fetal monitoring of such labors were not available at our set up. Table-1 depicts how the occurrence of placenta previa rises as there is a rise in the number of previous caesarean sections that a women had. The background frequency in primigravida patients with no prior uterine surgery was 0.41%, while it was 7.52% in women with repeat caesarean section.

35 (47.29%) patients had a Morbidly adherent placenta, of which 1 (2.85%) had previous 1, 13 (37.14%) had previous 2, 18 (51.43%) had previous 3 and 3 (8.57%) had previous 4 caesarean sections. This however contributed to 7.14%, 39.39%, 81.8% and 75% of the patients with previous 1, 2, 3 & 4 caesareans having a placenta previa.

In this study 71.62% patients were less than 35 years of age, while 28.38% were equal to or more than 35 years, hence increasing the likelihood of morbid consequences of placenta previa at a younger maternal age.

Also significant was the fact that majority (74.3%) had presented at gestational age of 24-36+ weeks, thereby exposing the neonate to the risks of prematurity, and only 25.7% patients gave birth at or beyond 37 completed weeks. At presentation, 89% patients were symptomatic and 11 % were asymptomatic. The morbidities observed are presented in Table-2 below.

DISCUSSION

An alarmingly increasing rate of caesarean section in a developing country like ours is a cause of great concern as it results in not only an escalating burden on the

infiltration of endometrial tissue that surrounds the scar by free RBCs.

These pathological changes in the vicinity of caesarean delivery scar may create sub optimal implantation of placenta, increase

Table-1: Relationship of placenta previa to the number of previous caesarean sections.

No. of Previous Caesareans	Total no. of patients (% of patients undergoing caesarean)	No. of patients with placenta previa(74)	No. of patients with placenta previa ending up in hysterectomies	Total Percentage contribution to placenta previa group (C/74 * 100)	Total Frequency of placenta previa in patients undergoing caesareans. (C/B * 100)
0	246 (19.98)	1	0	1.35%	0.41%
1	356 (28.92)	14	5 (6.76%)	18.92%	3.93%
2	319 (25.91)	33	19 (25.68%)	44.59%	10.34%
3	233 (18.93)	22	18 (24.32%)	29.73%	9.44%
4	77 (6.26)	4	4 (5.41%)	5.41%	5.19%
Total	1231	74	46 (62.16%)		6.01%

Table- 2: Maternal morbidity and mortality.

Morbidity	No. of Patients	Percentage of the group
Morbidly adherent placenta	35	47.29%
Urinary tract trauma	47	63.51%
Caesarean hysterectomy	46	62.16%
Post operative febrile morbidity	57	77.03%
Maternal mortality	0	0.00
Paralytic ileus	21	28.38%
Peroperative/postpartum hemorrhage	61	82.43%
Surgical site infection	12	16.21%

economy of the health care system but also there is considerable maternal mortality and morbidity having implications on the rest of the women's reproductive and family life¹. This high caesarean section rate is mainly the result of an increased rate of primary caesareans at the primary health care setups being run by General practitioner, whether private or public, lack of patient education, non-provision of facilities for instrumental delivery and VBAC.

Pathological changes in the myometrium and endometrium of the uterus have been described in the presence of prior caesarean delivery scar. These include polyp formation, lymphocyte infiltration, capillary dilatation and

vascular malformation and increased fragility of vessels⁶.

Various studies have suggested the relationship between placenta previa and previous caesarean delivery, which was also found in the present study. The frequency of placenta previa in our study was 6.01%, nearly consistent with the study by Nasreen F²¹ i.e. 5.3% with previous caesarean section. While study by To WWK and Leung WC²² shows it to be 1.31% compared to those with unscarred uterus 0.75%.

In the present study apart from the relationship between one caesarean delivery and subsequent occurrence of placenta previa, the contribution of each additional caesarean

delivery to the development of placenta previa was also noted but a bit vaguely. This can however be explained considering the limited number of patients in the previous 3 and previous 4 caesarean groups. Majority of patients in this study with placenta previa had previous 02 caesarean sections (25.9%) while 19.98% with previous 01 caesarean section and 18.93% had previous 03 caesarean sections. This was consistent with the study by Ashraf R, Bashir A and Noor R¹⁷.

In this study 71.62% patients were less than 35 years of age, while 28.38% were equal to or more than 35 years, hence increasing the likelihood of morbid consequences of placenta previa at a younger maternal age. This is in contrast to other studies. A study by Zhang J and Savitz¹⁰ showed that the woman aged 34 years or older had 2–3 times more placenta previa in relation to woman less than 20 years old. Another study by Lira J and NayeRL found that woman around 35 years age were at greater risk²⁷. This contradiction can be explained by our cultural trend of marriages and start of reproductive life in our women at a younger age group

Regarding presentation, majority of patients were symptomatic (89%) having history of antepartum hemorrhage between 24 – 36+ weeks of gestation (74.3%) which is correlated with the study by Ashraf R¹⁷.

Large number of patients in our study had major previa (58%) This was almost consistent with the study done by MehboobR²³.

In this study, women with major placenta previa were found to have higher number of previous caesarean section (61%), which is in accordance with the study of Dola et al, in 2003¹⁸. Study conducted by Ashraf R and his colleague at Lahore General Hospital in 2005 found frequency to be 65%¹⁷.

Regarding maternal morbidity, 61 (82.43%) patients developed PPH. 06 patients had morbidly adherent placenta previa which is growing cause of peroperative hemorrhage and increasing cause of emergency obstetrical hysterectomy. In the present study, 46 (62.16%) patients underwent caesarean hysterectomy

which was performed in >50% for placenta previa alone in the study by Bider D, Dulitzky M, Goldenberg M et al²⁴ and in 68% of patients by Perveen S²⁵ with placenta previa. While study by Armstrong CA, Harding S found >90% likelihood of undergoing hysterectomy with a notable increase in maternal morbidity and mortality²⁶.

During our study period, no maternal death occurred from placenta previa.

Morbidly adherent placenta was found in 47.29% patients contributing to 7.14%, 39.39%, 81.81% and 75% of the patients with previous 1, 2, 3 & 4 caesareans having a placenta previa. This finding correlates with the findings of Silver RM et al, with the percentages being 3%, 11%, 40%, 61% & 67% respectively⁴.

Our study suggests that implantation of placenta over the lower uterine segment is not just a chance happening, but is related to progressive endometrial damage secondary to multiparity, and increased number of repeated caesarean sections. Maternal morbidity associated with placenta previa can be avoided by trying to decrease primary caesarean section rates²⁰.

CONCLUSION

Frequency of Placenta previa and its associated morbidity is rising due to rising caesarean section rate which must be reduced by appropriate clinical assessment prior to considering primary caesarean section, patient education and encouraging vaginal birth after previous caesarean section and by improving primary healthcare facilities.

CONFLICT OF INTEREST

This study has no conflict of interest to declare by any author.

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