

Frequency of Abnormal Placentation in Patients with Previous Caesarean Section

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Abstract

Background: To assess relationship between previous caesarean scar and subsequent development of placenta praevia and its morbid adherence.

Methods: This analytical study was conducted in the Department of Gynaecology and Obstetrics, Military Hospital, Rawalpindi from 1st July to 31st December 2006. 122 pregnant women with history of previous caesarean sections beyond 32 weeks of gestation whether booked or unbooked, irrespective to number of caesarean scars with or without bleeding per vagina were included in this study. Cases with previous myomectomy, uterine repair, placental abruption, bleeding per vagina due to local causes were excluded. Patients were divided into four groups. Group A with previous one caesarean section, group B with previous, two caesarean sections, Group C previous three caesarean sections and, Group D with previous four caesarean sections.

Results: Group A included 69 patients and 07 (10%) were found to have placenta praevia. In Group B 32 patients were studied and placenta praevia was diagnosed in 5 (15.6%) of them. Similarly in Group C 12 patients were studied and 4 (33.3%) had placenta praevia. The study of Group D showed placenta praevia in 3 out of 9 (33.3%) patients. There was 2 case of placenta accreta in group A, C and D and one in group B.

Conclusion: The percentage of placenta praevia and morbidly adherent placenta rises with increasing number of caesarean sections.

Introduction

Placenta praevia refers to a placenta that is situated wholly or partially within the lower uterine segment at or after 28 weeks of gestation. Placenta praevia is classified into four types for ultrasonic antenatal diagnosis^{1, 2}. When an absence of the decidua basalis exists and incomplete development of the fibrinoid layer occurs, the placenta can attach

directly to the myometrium (accreta), invade the myometrium (increta), or penetrate the myometrium (percreta)³⁻⁴.

Placenta praevia is initiated by implantation of the embryo in the lower uterine segment⁵. With placental attachment and growth, the cervical canal may become covered by the developing placenta^{1, 2}. A defective decidual vascularization exists, possibly secondary to inflammatory or atrophic changes^{6,7}.

As the number of caesarean deliveries is increasing, the number of scarred uterus is also increasing exposing gravid women to increasing morbidity from uterine rupture, placenta praevia and accreta, thus increasing the incidence of emergency obstetric hysterectomy⁸⁻¹³. The increased incidence of placenta praevia in the last decade may be the result of increasing caesarean delivery rates during this period or the more widespread use of ultrasonography for detecting placenta praevia¹⁴⁻¹⁶.

The rate of placenta accreta in praevia cases also varies. Between 1.18% to 10% of accreta cases have anterior praevia¹⁵⁻¹⁷. The risk of placenta accreta also increases with increasing number of caesarean sections and there is an increased risk up to four-fold with two or more caesarean sections^{18,19}. It is associated with certain conditions like previous caesarean sections, uterine surgeries, uterine anomalies, old age, multiparity and cigarette smoking^{3, 4, 19, 20}.

Placenta praevia characteristically presents with unprovoked painless vaginal bleeding. Occasionally, however, it may be provoked by sexual intercourse¹². Various approaches have been used to diagnose placenta praevia²¹. The use of transvaginal ultrasonography in cases of suspected placenta praevia has been shown to improve the accuracy of diagnosis especially with posterior placenta praevia. This procedure has been shown to be safe and well tolerated^{16, 21}. Magnetic Resonance Imaging (MRI) provides good quality of placental imaging^{16, 22}. Doppler flow studies are being used to demarcate the invasion of placenta into the myometrium, serosa and

adjacent structures²⁰. The purpose of this study was to assess relationship between previous caesarean scar and subsequent development of placenta praevia and its morbid adherence.

had placenta accreta while the incidence of accreta was 60% in complete placenta praevia. No placenta accreta was reported in posterior placenta praevia.

Patients and Methods

A total of 122 patients were evaluated and studied (Table 1). All cases of placenta praevia with previous caesarean scar after 32 weeks of gestation whether booked or unbooked with no demarcation of age, irrespective to number of caesarean scars with or without bleeding per vagina were included in the study. All cases of previous myomectomy, uterine repair, placental abruption and bleeding per vagina due to local cause were excluded. A questionnaire was developed that included detailed information regarding maternal age, parity, gestational age, number of previous caesarean deliveries, history of bleeding per vagina, ultrasound findings and Doppler flow studies. Patients fulfilling the inclusion criteria were selected.

Patients were divided into four groups according to number of previous caesarean sections and labeled as; Group A previous one caesarean section, Group B previous two caesarean sections, Group C previous three caesarean sections and Group D previous four caesarean sections.

Data was analyzed using SPSS software. Chi square test was applied to check the relationship between previous caesarean sections and subsequent development of placenta praevia and morbidly adherence placenta and calculations made.

Results

Out of 122 cases placenta praevia was diagnosed in 19 cases (15.5%). The percentage of placenta praevia showed a rising value with increased number of caesarean scars as it was 10% in previous one caesarean section, 15.6% in previous two and 33.3% in previous three and four caesarean sections (Table 2). Ratio of placenta accreta was found to be more with increasing number of caesarean sections. It was 2.8% in previous one caesarean section, 6.2% in previous two, 11% in previous three and 22.2% in previous four caesarean sections (Table 3).

44% of patients with anterior placenta praevia

Table 1: Patients included in Study

Patients	Number	%age
Cases with previous scar	122	-
Booked cases	96	78.6%
Unbooked cases	26	21.3%

Table 2: Placenta Praevia Frequency with Previous Caesarean Section

Previous Caesarean Sections	No. of Cases	%age	Placenta Praevia	%age of Placenta Praevia
One	69	56.5%	7	10
Two	32	26.2%	5	15.6
Three	12	9.8%	4	33.3
Four	9	7.3%	3	33.3

Table 3: Relationship of Placenta Accreta and Previous Caesarean Sections

Previous Caesarean Sections	Total Cases	Placenta Accreta	%age of Placenta Accreta
One	69	2	2.8
Two	32	1	6.2
Three	12	2	11
Four	9	2	22.2

Discussion

About 96% cases of this study were booked and evaluated showing the increasing awareness of the general public for antenatal care in cases of previous caesarean section. Maximum patients in this study were with previous one caesarean section. The patients with previous 4 caesarean sections were only 7.3%.

Our study shows an increasing trend of placenta praevia and morbidly adherent placenta with increasing number of previous caesarean scars. 97% antenatal booking was noted in previous three caesarean section and 100% booking was found in previous four caesarean section patients.

Placental localization of all booked cases was done at 32 weeks and downwards by transabdominal sonography. Ultrasonographic and peroperative findings were found similar in all cases in this study.

The relationship of placenta praevia and number of previous scars was assessed in this study. Table 2 shows that incidence of placenta praevia increases in a linear way with increasing number of previous scars. Incidence of placenta praevia after one caesarean section was 10% which is much higher than in a study by Clark and colleagues which showed 0.67%¹⁴. After four caesarean sections the incidence was 33.3% which is comparable to results reported by Clark and colleagues. It was confirmed that previous caesareans increase the risk of placenta praevia and the risk is proportional to the number of previous uterine scars²³. It has been studied that due to scarring of lower uterine segment, the placenta shows a greater predilection for its location in the lower segment and greater degree of penetration as trophoblasts invade deeper tissue for search of maternal blood supply resulting in placenta praevia and placenta accreta. The values are comparable to the study of Chattapadhyay which showed a five fold increase of placenta praevia with increasing number of caesarean sections¹⁸. Also placenta praevia complicated by placenta accreta was 59.2% after two or more caesarean sections which is parallel to our study which is 2.8% after one caesarean section and 22.2 % after previous four caesarean sections. The study conducted by Nielson showed risk of placenta praevia 1.22% which is much less than our study⁵. The results are also comparable to study of Cande which showed increased number of placenta praevia with increasing number of caesarean deliveries¹⁷.

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