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Frequency of placenta accreta in repeated cesarean sections

Fakhar-Un-Nisa[1], Fozia Bano[2], Tooba parveen[3], Sandhya Kumari[4], Asia Khatoon[5], Rukhsar Samo[6]

[1]MBBS FCPS Obs & Gynae Senior Registrar Pir Abdul Qadir Shah Jeelani Institute of Medical Sciences, Gambat Institute of Medical Sciences Gambat

[2]MBBS FCPS, Obs and Gynae Taluka Hospital Ghotki

[3]FCPS Consultant Shaikh Zaid Women Hospital Larkana, Shaheed muhtarma benazir Bhutto medical university Larkana

[4]FCPS Gynae and Obs Women Medical Officer, Sheikh Zaid Women Hospital Larkana

[5]MBBS, FCPS Consultant Gynaecologist and Obstetrician, Dr Zeenat Issani Institute of Medical Sciences

[6]MBBS FCPS CHPE, Gynae and Obs Women Medical Officer, Sheikh Zaid Women Hospital Larkana

Corresponding Author:

Fakhar-Un-Nisa

MBBS FCPS Obs & Gynae Senior Registrar Pir Abdul Qadir Shah Jeelani Institute of Medical Sciences, Gambat Institute of Medical Sciences Gambat

Email: Fakharkhuwaja@gmail.com

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ABSTRACT

Background: Placenta accreta occurs when the placenta—the organ that provides nutrients and other support to a developing fetus—attaches too deeply to the uterine wall. This often leads to two major complications: the placenta cannot normally deliver after the baby's birth, and attempts to remove the placenta can lead to heavy bleeding. One cesarean section increases the risk by 0.65% and four or more increases risk by 10%.

Objective: To determine the frequency of placenta accreta in pregnant patients having repeat cesarean section.

Methodology: This Cross-Sectional Study conducted at Department of Obstetrics & Gynaecology, Pir Abdul Qadir Shah Jeelani Institute of Medical Sciences, Gambat Institute of Medical Sciences Gambat, Pakistan for a duration of Six months after the approval of synopsis from April 12, 2022 to October 11, 2022. All patients who fulfilled the inclusion criteria and visited to SMBBMU, Larkana were included in the study. Informed consent was taken after explaining the procedure, risks and benefits of the study. All females underwent ultrasonography for assessment of placental position and placenta accrete was detected. All the collected data were entered into the proforma attached at the end and used electronically for research purpose.

Results: Out of 145 women, 106 (73.1%) women had parity between 1---2 while 39 (26.9%) had parity >2. Indication for previous cesarean section showed dystocia in 14 (9.6%) women, fetal distress was noted in 43 (29.7%), repeat cesarean section 25 (17.2%), antepartum hemorrhage was 32 (22.1%), abruption in 12 (8.3%) while malposition of fetal as previous indicator was noted in 19 (13.1%) women as shown in Mean ± SD of age was 29.2±6.4 years. Mean ± SD of gestational age was 31.6±6.9 weeks. Placenta accreta was found in 16 (11.0%) women.

Conclusion: It is to be concluded that placenta accrete is prevalent in pregnant patients having repeat cesarean section. More prospective and well- controlled trials are needed to validate the current findings. ..

Keywords: Cesarean Section, Incidence, Placenta Accreta, Pregnancy.

1. INTRODUCTION

Cesarean deliveries have risen significantly over the past decades due to advanced maternal age, defensive obstetric practice, medicolegal concerns and maternal request. Cesarean section (CS) is a surgical procedure including some risks such as uterine rupture, infection, hemorrhage, thrombosis and damage to the bladder, ureters or bowel. Although CS is now safe along with developments in anesthesia and surgery, these complications of CS can be life-threatening for both mother and baby. Compared with primary CS, multiple repeat caesarean sections are associated with additional risks..

including placenta previa, abnormal placental invasion and difficulties in surgical dissection [1-3]

Due to the overall rise in CS frequency in developing countries, an increasing number of women are having repeat CS. Trial of labor after CS is an alternative to decrease CS rates. However, vaginal birth after CS is not being routinely performed in all over the world and particularly in our country. Furthermore, many clinicians suggest sterilization to women following two or three CSs due to risk of uterine rupture and several complications [4-6]. However, most women do not accept sterilization in this part of world where large families are encouraged for social and cultural reasons. In addition, there has been an ongoing debate about the recommended maximum number of CS that a woman may safely have. Repeat CS may pose many complications to mother which may include placenta accreta, placenta previa or other placental adherence issues [3,7].

In a study, placenta accreta was found in 25/2460 patients (1%) with repeat Cesarean section [3]. Another study also reported that incidence of placenta accreta was 1.18% among patients with placenta previa [8]. But one study done in Jeruselam, it was reported that the risk of placenta accreta in women is 2% for those younger than 35 years and with no history of uterine surgery. The risk increases to 39% for those over 35 who have had 2 or more cesarean sections [9]. One study done in Lahore, it was reported that 10.52% patients had placenta accrete who had history of previous cesarean sections [10].

As incidence of CS is increasing globally as well as in our population, it is becoming more important to identify which effects it may pose to the mothers. Placenta accreta may become a life-threatening condition if not appropriately managed. Therefore, it is highly needed to determine its frequency among those who are having repeat CS due to any reason. To the best of our knowledge, in Pakistan there, are a very few clinical studies in this direction. Following this study, we will be better able to educate our patients regarding the anticipated frequency of placenta accreta among those undergoing repeat CS.

2. MATERIALS AND METHODS

This Cross-Sectional Study conducted at Department of Obstetrics & Gynaecology, Pir Abdul Qadir Shah Jeelani Institute of Medical Sciences, Gambat Institute of Medical Sciences Gambat, Pakistan for a duration of Six months after the approval of synopsis from April 12, 2022 to October 11, 2022. Sample size of 145 patients was calculated taking confidence level as 95%, absolute precision as 5% and anticipated frequency of placenta accreta as 10.52% among those with repeat cesarean section [10]. Non-Probability, Consecutive Sampling technique was used.

Inclusion criteria

All pregnant patients of age 18-40 years.

Parity>1.

Presented at gestational age>24 weeks.

Patients had repeat cesarean sections.

Exclusion criteria

Patients with congenital anomalies (clinical examination) (as these patients might have more chances of having placenta accreta).

Patients with 2 or more fetuses (ultrasound) (as these patients might have more chances of having placenta accreta).

Data collection

Approval from Ethical Review Board of the hospital was obtained. The patients meeting the inclusion criteria were included in the study form Shaikh Zaid Women Hospital Gynae-III. Written informed consent for inclusion into this study was obtained. Patients with repeat cesarean section were assessed for age, gestational age, parity, gestational age at presentation, height, weight, BMI (weight in kg / height in m^2), number of previous cesarean sections, indication for previous cesarean section. Then, females underwent ultrasonography for assessment of placental position by a senior radiologist having at least 4 years' experience in ultrasonography with assistance of researcher. Findings were recorded and placenta accrete was detected, it was noted (operational definitions). All females were managed as per departmental protocols. All data was recorded on the proforma.

Data analysis

The collected data was entered and analyzed accordingly using SPSS version 21. Mean ± SD median (1QR) was calculated for age, height, weight, BMI, and gestational age. Shapiro-Wilk test was applied to assess the normality of data. Frequency and percentages were calculated for number of previous cesarean sections, indication for previous cesarean, parity, and placenta accreta.

3. RESULTS

In this study 145 patients were included to assess the placenta accreta in pregnant patients having repeat cesarean section and the results were analyzed as:

The distribution of continuous variables was tested by applying Shapiro-Wilk test for age (P=0.072), weight (P=0.102), height (P=0.361), gestational age (P=0.246), body mass index (P=0.721), parity (P=0.524) and number of previous cesarean section (P=0.191) respectively, as shown in **table 1**.

In distribution of booking status 90 (62.1%) women were booked while 55 (37.9%) women were un-booked as shown in **figure 1**.

Out of 145 women, 106 (73.1%) women had parity between 1---2

while 39 (26.9%) had parity >2 as shown in **figure 2**.

Indication for previous cesarean section showed dystocia in 14 (9.6%) women, fetal distress was noted in 43 (29.7%), repeat cesarean section 25 (17.2%), antepartum hemorrhage was 32 (22.1%), abruption in 12 (8.3%) while malposition of fetal as previous indicator was noted in 19 (13.1%) women as shown in **table 2**.

Placenta accreta was found to be in 16 (11.0%) women as shown in Table 3.

Table 1: Descriptive statistics of Shapiro-Wilk Test

VARIABLE	MEAN±SD	P-VALUE
Age (years)	29.2±6.4	0.072
Weight (kg)	65.8±10.2	0.102
Height (cm)	160.3±13.6	0.361
Gestational Age (weeks)	31.6±6.9	0.246
Body Mass Index (kg/m^2)	26.8±5.3	0.721
Parity	2.3±0.6	0.524
Number of previous cesarean section	3.1±0.9	0.191

Figure 1: Frequency of booking status

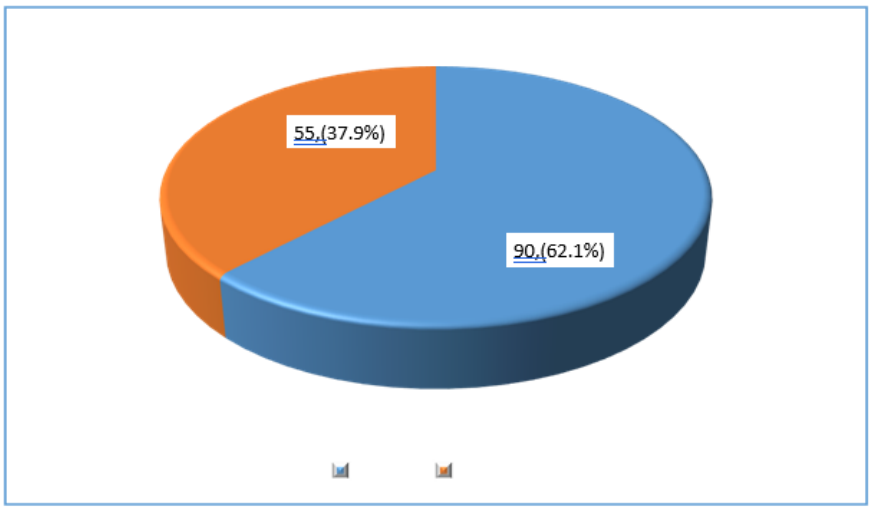

Figure 2: Frequency of parity

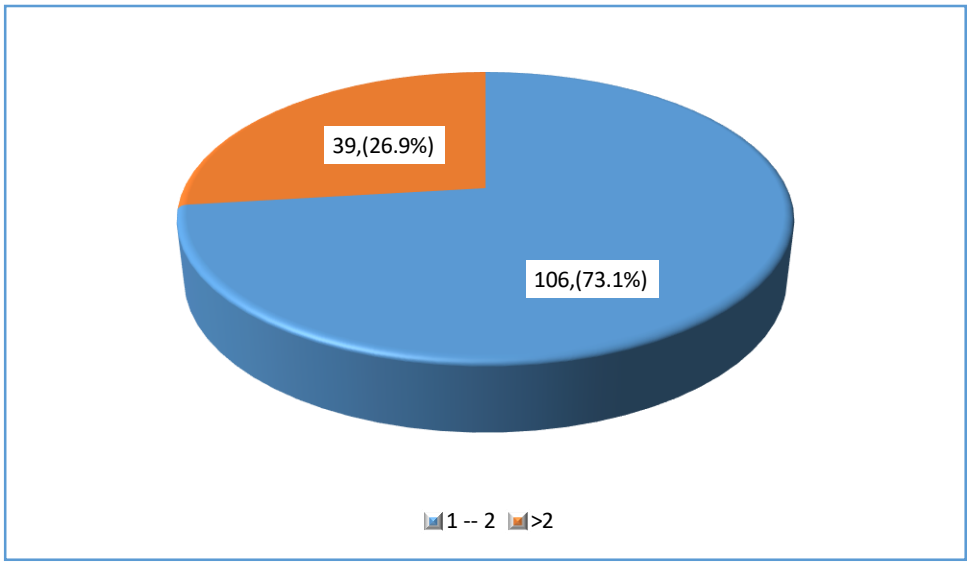

Table 2: Frequency of indication for previous cesarean section

INDICATION	FREQUENCY	PERCENTAGE
Dystocia	14	9.6%
Fetal distress	43	29.7%
Repeat cesarean section	25	17.2%
Antepartum hemorrhage	32	22.1%
Abruption	12	8.3%
Malposition of the fetus	19	13.1%

Table 3: Frequency of placenta accreta

PLACENTA ACCRETA	FREQUENCY	PERCENTAGE
Yes	16	11.0%
No	129	89.0%

4. DISCUSSION

Cesarean deliveries have risen significantly over the past decades due to advanced maternal age, defensive obstetric practice, medicolegal concerns and maternal request. In Turkey, the cesarean section (CS) rate increased from 8% to 37% between 1993 and 2008 [11]. CS is a surgical procedure including some risks such as uterine rupture, infection, hemorrhage, thrombosis and damage to the bladder, ureters or bowel [12]. Although CS is now safe along with devolopments in anesthesia and surgery, these complications of CS can be life- threatening for both mother and baby [13]. Compared with primary CS, multiple repeat caesarean sections (MRCS) are associated with additional risks including placenta previa, abnormal placental invasion and difficulties in surgical dissection.

Due to the overall rise in cesarean frequency in developing countries, an increasing number of women have had MRCS. Trial

of labor after CS is an alternative to decrease CS rates. However, vaginal birth after CS is not being routinely performed in all hospitals of our country. Furthermore, many clinicians suggest sterilization to women following two or three CSs due to risk of uterine rupture and several complications. However, most women do not accept sterilization in Turkey where large families are encouraged for social and cultural reasons. In addition, there has been an ongoing debate about the recommended maximum number of CSs that a woman may safely have.

Concurrent occurrence of placenta previa and placenta accreta in a patient with a previous lower segment uterine scar was first reported by Kistner et al. [14] Bender [15] first suggested that a uterine scar could predispose to the development of placenta previa in subsequent pregnancies. More recent studies [16,17] have further supported the association between placenta previa and previous cesarean section, as well as the increased risk of placenta accreta in these cases [18,19]. This is of increasing concern in the context of a rising cesarean section rate in most obstetric departments throughout the world.The sequence of previous cesarean section, placenta previa, placenta accreta and possible hysterectomy is increasingly acknowledged [20]. Placenta previa is an obstetric complication that occurs in 2^{nd} & 3^{rd} trimesters of pregnancy. Placenta is said to be previa when it is situated wholly or partly within the lower uterine segment.

Placenta accrete is morbidly adherent placenta, when part of the placenta, or the entire placenta, invades and is inseparable from the uterine wall [21]. When the chorionic villi invade only the myometrium, the term placenta increta is appropriate; whereas placenta accreta describes invasion through the myometrium and serosa, and occasionally into adjacent organs such as bladder.

Placenta previa is the rising incidence of cesarean deliveries combined with increasing maternal age has resulted in a 10-fold increase in the incidence of placenta accreta over the past 50 years [22].

Other risk factors for placenta accreta are dilatation & curettage, intrauterine surgery such as myomectomy, smoking, multifetal gestation and multiparity [23]. Placenta accreta is associated with significant risk of massive obstetrical haemorrage, sometimes necessitating caesarean hystrectomy. Antenatal diagnosis by ultrasound is beneficial in allowing preparation for delivery by a multidisciplinary team, comprising of obstetricians, anaesthetists, radiologists & surgeons in an appropriate setting [24].

Colour flow doppler studies on USG & MRI are helpful in making an antenatal diagnosis [25]. The timing of delivery should be individualized. This decision should be made jointly with the patients, Obstetricians & Neonatologist.

Placenta previa is known to be associated with previous caesarean deliveries, advanced maternal age, increasing parity, smoking, curettage and myomectomy. The findings of this study are comparable with various studies. In this study, mean age was 29.2±6.4 years. Another study done by Biler A, et al found mean age to be 32±4.6 years [3]. The study of To WW, et al found as 32.34±4.15 years [8].

In our study, mean gestational age was 31.6±6.9 weeks. Biler A, et al reported gestational age to be 37.9±1.6 weeks [3]. To WW, et al documented gestational age as 34.59±6.26 weeks [8].

In present study, placenta accreta was found in 16 (11%) women. In a study, placenta accreta was found in 25/2460 patients (1%) with repeat cesarean section [3]. Another study also reported that incidence of placenta accreta was 1.18% among patients with placenta previa [8]. But one study done by Lachman E, et al in Jeruselam reported that the risk of placenta accreta in women is 2% for those younger than 35 years and with no history of uterine surgery. The risk increases to 39% for those over 35 who have had 2 or more cesarean sections [9]. One study done in Lahore by Quddusi H, et al, it was reported that 10.52% patients had placenta accrete who had history of previous cesarean sections [10].

In recent study, stratification of confounders / effect modifiers with respect to placenta accreta, significant difference was noted in age group (P=0.049), number of previous cesarean section (P=0.002), while insignificant difference was found in body mass index (P=0.614), gestational age (P=0.222), parity (P=0.119) and indicationsfor previous cesarean section (P=0.522).

5. CONCLUSION

It is to be concluded that placenta accrete is prevalent in pregnant patients having repeat cesarean section. More prospective and well- controlled trials are needed to validate the current findings..

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