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Placenta Accreta Spectrum: An Alarming Situation in Pakistan

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Abstract: Placenta accreta spectrum is a generalized term used when placenta firmly adherent with uterus. It has three grades depending upon its invasion into myometrium of uterus. This condition occurs as a consequence of partial or complete absence of decidua basalis. Which allows the placental invasion into the substance of uterus so there will be no clear plane between placenta and uterus. It is a life threatening condition causes considerable fetomaternal morbidities and mortalities. Aim of this study is to determine the incidence of placenta accreta and its association with previous cesarean section. It is a descriptive cross sectional survey Conducted in tertiary care hospital of Pakistan for period of 1 year using non probability purposive sampling technique. Maximum patients about 54.61% were found between 36-42 years. According to gravidity maximum patients about 44.08% were found between G5-G7. More patients were presented about 46.88% at gestational age of 32-35 weeks and incidence of placenta previa was found 7.53% further distribution of patents of placenta previa according to scarred and un scarred uterus was 65.14% and 34.85% respectively. Incidence of placenta accreta in patients with placenta previa with scarred uterus was found 93% and 6.8% patients of placenta previa with scarred uterus have no placenta accrete. Frequency of placenta accreta in previous 1, 2, 3, 4, 5 were as 2.06%, 6.20%, 23.87%, 32.57%, and 35.31% respectively. Occurrence of placenta accreta in unscarred placenta previa was found 2.20% and placenta accrete spectrum not found in unscarred placenta previa 97.79%. Objective of this study was to find out the incidence of placenta accreta system and also determine the association of this condition with previous cesarean section. By diagnosing it antenately fetomaternal morbidities and mortalities can be reduced. And rising rate of cesarean now a days is the main cause of this condition, by controlling the rising rate of cesarean we can reduce the incidence of this condition.

Keywords: Placenta Accreta Spectrum, Cesarean Section, Fetomaternal Outcome

1. Introduction

Placenta accreta is term used when placenta is morbidly adherent with uterus [1]. It occurs due to absence of decidua basalis which results in invasion of placenta to substance of uterus [2-4]. This Condition is classified as;

1) Placenta accreta 82%: Placenta implants totally/partially or focally through the decidua basalis.
2) Placenta Increta 12%: Villi invade within the myometrium.
3) Placenta percreta 6%: The villi fully penetrates the myometrium and may pass through the serosa and invade the surrounding structures [1, 5].

The incidence of this condition has increased 10 folds in the past 50 years and seems to parallel the rising rate of cesarean deliveries. In 1980 incidence was 1 in 2500 deliveries, In 2012 American college of obstetrics and gynaecogist states that its rate becomes 1 in 533 [1, 4, 6, 7].

Women at greatest risk of this condition are those who have myometrial damage caused from the scarring process following uterine surgery with secondary localised hypoxia leading to defective decidualization and excessive

Trophoblastic invasion [1].

The known risk factors include [1, 4, 8-11] Previous cesarean section, placenta previa, advanced maternal age, multiparty, previous myomectomy, uterine curettage, thermal ablasion, uterine artery embolization, smoking, uterine anomalies.

In the presence of placenta previa the risk of accreta was 3%, 11%, 40%, 61%, 67% for the first second, third, fourth, and fifth or greater repeat cesarean section, respectively. Placenta previa without previous uterine surgery is associated with a 1-5% risk of placenta accreta system [12].

It is life threatening condition main cause of emergency cesarean hysterectomy and also associated with fetomaternal morbidities and mortalies [13-15]. Complications include, cesarean hysterectomy, post partum haemorrhage, DIC, injury to neighboring visceras, Adult Respiratory Distress Syndrom, renal failure, thromboembolisim, maternal mortality as high as 7%. [1, 5, 11, 15].

Its diagnosis is dependent on antenatal or intra operative. Doper Ultrasound can detect this condition. May be supplemented by magnetic resonance imaging [16-19].

2. Subject and Method

It is a descriptive cross sectional survey conducted in tertiary care hospital of Pakistan for period of 1 year from January 2022 to December 2022 by using non probability purposive sampling technique. Total patients 32185 were included in study. Patients who fulfill the inclusion criteria in which age of the patients was between 25-40 years, gestational age of the patients was between 28-40weeks, gravidity was between G2-G7, all types of placenta previa, patients with scarred and unscarred uterus who had placenta previa and also placenta accreta in both scarred and unscarred placenta previa were included in this study.

Patients with first pregnancy, Second trimester bleeding, scar on uterus other than cesarean section like myomectomy and patient with bleeding disorder like decreased platelet counts or deranged coagulation profile were excluded.

All those patients who fulfill the inclusion and exclusion criteria presented in out patient department or emergency department of Sir Ganga Ram Hopital, Lahore were included in the study.

All the information was collected through especially designed Performa. Informed consent was taken from the patients and data was kept anonymous for privacy. All the collected data was entered into SPSS version 23 data was presented in frequency and percentage. With 95% confidence interval and 10% margin of error.

3. Result

Total deliveries in 1 year were 32185. Among them 2470 patients of placenta previa were noted. Age of the patients were between 20 to 41 years. Among them 287 (11.6%), 789 (31.94%) and 1349 (54.94%) were found between age groups of 24-29, 30-35, 36-41 years respectively more patients were in the age group of 30 to35 years (Table 1).

Table 1. *Distribution of patient according to age.*

SR. No.	Age Group	Total Number of Patients (N)	Percentage (%)
1	25-30	287	11.61%
2	31-36	789	31.94%
3	36-42	1349	54.61%

According to duration of marriage of 5, 10, 15 years were 25.74%, 37.44%, 36.63% respectively. More patients were presented with duration of 10 years (Table 2).

Table 2. *Distribution of patient according to duration of marriage.*

SR. No.	Years	Total Number of Patients	Percentage (%)
1	1-5	636	25.74%
2	6-10	925	437. 44
3	11-15	905	36.63%

According to gravidity presentation of patients were as, G2- G4 21.49%, G5-G7 44.08%, > G7 34.41% respectively (Table 3).

Table 3. *Distribution of patient according to gravidity.*

Gravidity	Total Number of Patients	Percentage (%)
G2-G4	531	21.49%
G5-G7	1089	44.08%
>G7	850	34. 41%

Distribution according to gestational age were found as 28-31weeks with 13.64%, 32-35 weeks were 46.88% and 36-40 weeks were 39.47% found. More patients with accreta were presented between gestational age of 32-35 weeks (Table 4).

Table 4. *Distribution of patient according to gestation.*

Gestational Age (Weeks)	Total Number of Patients	Percentage (%)
28-31	337	13.64%
32-35	1158	46.88%
36-40	975	39.47%

Incidence of placenta previa in this study was 7.53% (Table 5, Figure 1).

Table 5. *Incidence of placenta previa.*

Total Number of Delivered	Total Number of Placenta Previa	Incidence of Placenta Previa
32185	2470	7.53%

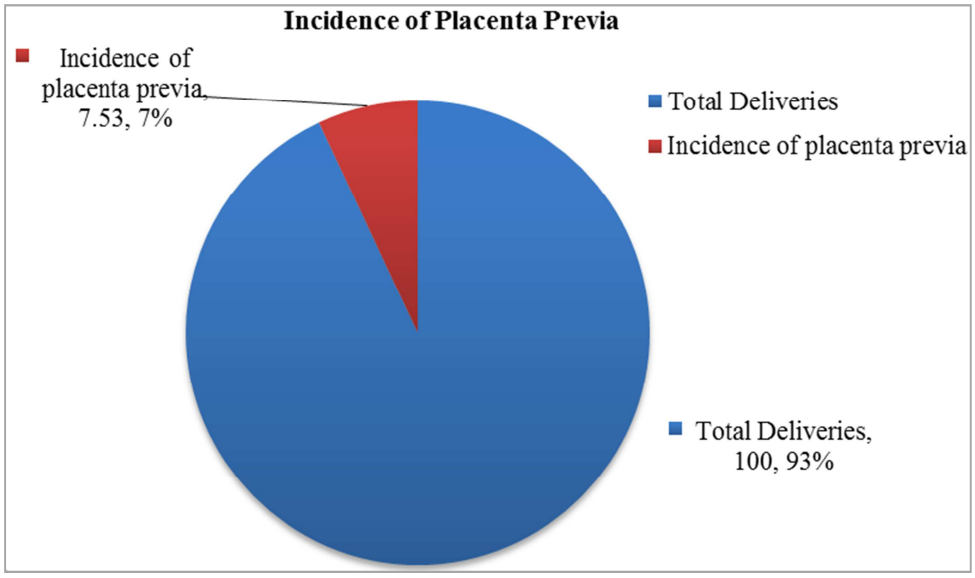

Figure 1. *Incidence of Placenta Previa.*

Segregation of theses patients according to scarred and unscarred uterus was 65.14% and 34.85% respectively (Table 6).

Table 6. *Distribution of patient of placenta previa in scarred and unscarred uterus.*

SR.NO.	Scarred Uterus	Unscarred Uterus
Total Number of Patients	1609	861
Percentage	65.14%	34.85%

Prevalence of Placenta accreta in placenta previa with scarred uterus were 93% and no accrete in 6.8% (Table 7).

Table 7. *Incidence of placenta accreta spectrum in scarred uterus.*

Total placenta previa in scarred uterus	Total Number of Accreta in Placenta Previa With Scarred Uterus	No Accreta in Placenta Previa With Scarred Uterus
1609	1498	111
65.14%	93%	6.8%

The association of placenta previa with previous cesarean section and occurrence of placenta accreta spectrum among them were as previous 1, 2, 3, 4, 5 LSCS was as 2.06%, 6.20%, 23.87%, 32.57% and 35.31% respectively (Table 8, Figure 2). Reducing the incidence of cesarean section results in reduction of previa incidence.

Table 8. *Distribution of placenta accreta patient according to previous cesarean sections.*

Number of Previous Cesarean Section	1	2	3	4	5
Number of Patients With Accreta spectrum	31	93	357	488	529
Frequency of Accreta spectrum	2.06%	6.20%	23.87%	32.57%	35.31%

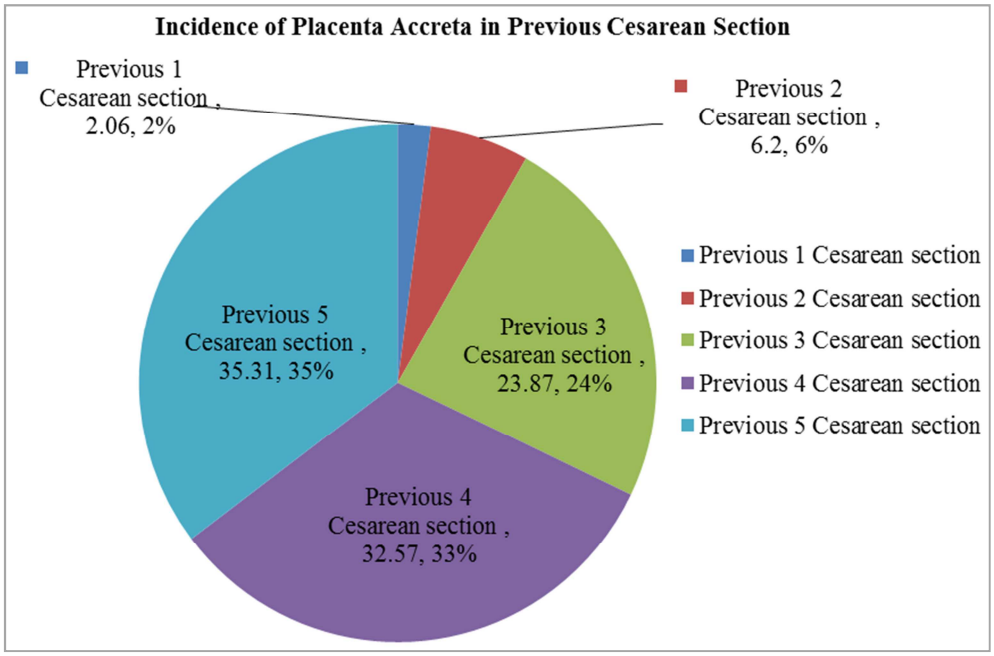

Figure 2. *Incidence of Placenta Accreta in Previous Cesarean Section.*

Placenta accreta spectrum was found in placenta previa with unscarred uterus was found in 2.20% and not found in 97.79% respectively (Table 9). So 97.79% without previous cesarean section placenta previa delivered uneventful. So by giving trial of labour rate of cesarean section will be reduced.

Table 9. *Incidence of placenta Accreta Spectrum in Unscarred Uterus.*

SR. No.	Total Number of Patients	Percentage
Placenta Previa in Unscarred uterus	861	34.85%
Number of Accreta Spectrum Found in Unscarred Placenta Previa	19	2.20%
Accreta Spectrum Not Found in Unscarred Placenta Previa	842	97.79%

4. Discussion

Placnta accreta is a condition in which placenta morbidly adherent with uterus [20]. Pregnancy becomes high risk with this condition, maternal morbidity and mortalities can occur because of severe post partum haemorrhage [21]. Incidence of placenta accreta is increasing day by day, observational studies from 1970s and 1980s described the prevalence of this as between 1 in 2510 and 1 in 4017 compared with rate of 1 in 533 from 1982 – 2002 [22]. In a study conducted in 2016 rate of accreta has become 1 in 272 [22-25].

The increasing rate of placenta accreta is due to many risk factors but most important is increasing rate of cesarean section [20, 26, 27].

In the systematic review the rate of placenta accreta increased from 0. 3% In female with one previous section to 6.74% for female with five or more cesarean section [28].

3% placenta accreta found in patient with only placenta previa without scarred uterus. For women with placenta previa the risk of acreta is 3%, 11%, 40%, 61%., 67% for the first, second, third, fourth, and fifth or more cesarean section respectively [12].

Additional risk factors include advance maternal age, multiparty, prior uterine surgeries or curettage, smoking [29, 30].

In this study the incidence of placenta previa is more in scarred uterus as compare to unscarred uterus. Similarly incidence of accreta is also increased with placenta previa in scarred uterus, risk is also increasing as number of previous cesarean section increases more risk is with previous five cesarean delivery. In the unscarred uterus with placenta previa risk of accreta is only 2.20% and 97.79% placenta previa in unscarred uterus remained uneventful.

In the presence of placenta previa the risk of accreta was increased from 3-67% from first to fifth cesarean section respectively [12].

5. Conclusion

Placenta accreta spectrum is an alarming situation in third world countries like Pakistan. This condition is associated with high fetomaternal morbidity and mortality. Abnormal placentation is associated with many risk factors among them major factors are placenta privia and scared utrus. The scarred Placenta previa rises the risk of accreta from 3-67% from 1st to 5th cesarean section respectively. Antenatal diagnosis is key factor in optimizing the counseling, treatment which results in healthy fetomaternal outcome of patient with placenta accreta spectrum. Placenta accreta

occurrence is mainly due to previous cesarean sections and placenta previa. Life of a mother is very important so to give full chance of normal viginal deliveries which in turn reduces the cesarean rate and placenta previa rate which results in the reduction of placenta accreta spectrum.

There is economically unstability in the developing countries like Pakistan; high risk pregnancies, like pregnancy with placenta accreta causes more financial burden on the families. So to combat this condition it is necessary to reduce the cesarean sections.

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Conflicts of Interest

The authors declare no conflicts of interest.

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