A Study On Prevalence Of Placenta Previa With History Of Caesarean Delivery In A Tertiary Health Care Centre

Dr. Khuman Victor, Dr. Shapam Kumar Singh,
Dr. Amom Shyamchandra Singh

(Assistant professor Obs andGynae, RIMS, India)
(PGT Obs and Gynae, JNIMS,India)
(Senior Resident Obs and Gyane, RIMS, India)

Abstract:

Background: Placenta previa refers to a placenta located either fully or partially in the lower uterine segment and covering the internal cervical os. It is one of the main cause of vaginal bleeding in the third trimester and a significant cause of maternal and perinatal morbidity and mortality.

It is a major risk factor for postpartum haemorrhage and can lead to morbidity and mortality of the mother and neonate. This situation prevents a safe vaginal delivery and requires the delivery of the neonate to be via caesarean delivery. The underlying cause of placenta previa is unknown. There is, however, an association between endometrial damage and uterine scarring Prior uterine surgery has been associated with placenta previa formation. Although a history of curettage and/or myomectomy attends a slightly elevated previa risk, prior caesarean delivery has been the most consistent risk factor. In the pregnancy following a caesarean delivery, the risk for placenta previa has been reported to range from 1% to 4%. Globally there is a rising trend in caesatrean section rates. The current global caesarean section rate is around 21%. While the caesarean section rates have steadily increased worldwide in the last three decades

In our practice we have been coming across a lot of placentas previa an acreta cases as compared to earlir decades and also there is trend of increasing rates of caesarean sections. And a finding of a majority of placenta previa and accrete spectrum in the post caesarean population. Therefore estimating prevalence od placenta previa in post caesarean population is paramount.

Materials and merhods: Ours is a study on prevalence of placenta previa with history of caesarean delivery attending Department of Obstetrics and Gynaecology JNIMS Hospital, Porompat, Imphal, Manipur. A review of related research and non-research literature enable the investigators to determine and to develop an insight regarding prevalence of placenta previa and history of caesarean section. A cross-sectional study design was adopted for study and it was carried out from September 2022 – august 2023.The study include those antenatal mothers with a confirmed diagnosis of placenta previa, at or more than 28 weeks of gestation attending Department of Obstetrics and Gynaecology JNIMS, Hospital, Porompat, Imphal, Manipur. A purposive sampling method was adopted and 45 antenatal mothers with placentas previa were recruited and a self structured checklist was adopted to collect data about study participant's socio-demographic characteristics, obstetrics and gynaecological history, history of current pregnancy, and maternal and neonatal outcome.

Results: This study observed that out of 45 respondent under study, majority 40% (18 nos) belong to age group (26-30) yrs whereas 28.9% (13 nos) belong to age category (36-40) yrs. 22.2% (10 nos) were belong to age group (31-35) yrs. And only 8.9%)(4nos) belong to (20 -25) yrs of age.In this study it is observed that among the patients with placenta previa majority 94.4% (34 nos) had done previous caesarean section in their history. It was found that there was significant association between the presence of placenta previa and their previous caesarean section (p-value <0.005). We have seen that among the women with major degree placenta previa 93.8% (15 nos.) have done caesarean section whereas only 6.3% (1 no) has not done caesarean section. Among the marginal type of placenta previa 83.3% (5 nos.) have done caesarean section whereas only 16.7% (1 no) has not done caesarean section. Among the incomplete type of placenta previa 100% (5 nos.) have done caesarean section. Among the complete type of placenta previa 100% (9 nos.) have done caesarean section.In the aspect of the patients, their history of caesarean section with their Gestational age, Inter-birth interval (in Years) and type of placenta previa were significantly associated i.e, p-value< 0.05

Conclusion: Therefore, our study showed that the presence of placenta previa and their previous caesarean section were significantly associated.

Hence, through these results, more appropriate findings may be facilitated to determine the relationship of placenta previa with history of caesarean section and help to identify the effect of caesarean sections. This can aid in raising awareness and combating the causes and effects in a timely and effective manner.

Keyword: placenta previa, caesarean section, post partum haemorrhage

I.   Introduction

Placenta previa refers to a placenta located either fully or partially in the lower uterine segment and covering the internal cervical os. It is one of the main cause of vaginal bleeding in the third trimester and a significant cause of maternal and perinatal morbidity and mortality.[1]

It is a major risk factor for postpartum haemorrhage and can lead to morbidity and mortality of the mother and neonate. This situation prevents a safe vaginal delivery and requires the delivery of the neonate to be via caesarean delivery. The underlying cause of placenta previa is unknown. There is, however, an association between endometrial damage and uterine scarring. The risk factors that correlate with placenta previa are advanced maternal age, multiparity, smoking, cocaine use, prior suction and curettage, assisted reproductive technology, history of caesarean section(s) and prior placenta previa. [2]

One of the primary risk factors for placenta previa is prior caesarean delivery, and the risk increases with increasing numbers of caesarean deliveries. In these cases, the risk for placenta accreta is also increased, and careful attention should be taken to assess for this condition. Additional risk factors include a history of placenta previa in a prior pregnancy, advanced maternal age, multiparity, multiple pregnancy, smoking, cocaine use, and previous uterine surgery (i.e., curettage, abortion). Maternal age also seems to influence the occurrence of placenta previa. Women older than 35 years of age have more than a fourfold increased risk for placenta previa, and women older than 40 years of age have a nine fold greater risk. [3]

Prior uterine surgery has been associated with placenta previa formation. Although a history of curettage and/or myomectomy attends a slightly elevated previa risk, prior caesarean delivery has been the most consistent risk factor. In the pregnancy following a caesarean delivery, the risk for placenta previa has been reported to range from 1% to 4%. A linear increase is seen in placenta previa risk with the number of prior caesarean deliveries. Placenta previa occurs in 0.9% of women with one prior caesarean delivery, in 1.7% of women with two prior caesarean deliveries, and in 3% of those with three or more caesarean deliveries. In patients with four or more caesarean deliveries, the risk for placenta previa has been reported to be as high as 10%.[4]

The current global caesarean section rate is around 21%. While the caesarean section rates have steadily increased worldwide in the last three decades, sub- Saharan Africa continues to present the lowest caesarean rate and Latin American and the Caribbean remains at the highest. The prevalence of C- section delivery in India rose from 2.9% during 1992-93 to 10.6% in 2005- 06 and to 21.5% during 2019 -21.[5]

In our practice we have been coming across a lot of placentas previa an acreta cases as compared to earlir decades and also there is trend of increasing rates of caesarean sections. And a finding of a majority of placenta previa acsres in the post caesarean population. Hence an effort has been made to estimate the prevalence of placenta previa in post CS pregnancies.

According to Browne's types of placenta previa are classified as:

Grade 1 (Low lying): Only the lower margin of the placenta invades the bottom part of the uterus, not reaching the os, while most of the placenta is located in the upper portion.

Grade 2 (Marginal): Placenta reaches the internal os but does not cover it.

Grade 3 (Incomplete or partial central): Placenta covers the internal os when closed but not when fully dilated.

Grade 4 (major or total): Even when full dilated, the placenta completely covers the internal os.[6]

The differentiation of placental position has historically been performed by digital assessment of the lower uterine segment and placenta through the cervix. Using this potentially hazardous method of evaluation, placental position was classified as complete placenta previa, partial placenta previa, incomplete placenta previa, marginal placenta previa, low-lying placenta, and placenta distant from the internal cervical os.[7]

These classifications do not directly apply to the ultrasound examination of placental position relative to the cervix. The use of ultrasound to evaluate the position of the placenta in the uterus has both improved knowledge of the placenta within the uterus and simplified terminology with respect to placental position.[8]

Recent revised classification of placenta previa consists of two variations: true placenta previa, in which the internal cervical os is covered by placental tissue and low-lying placenta, in which the placenta lies within 2 cm of the cervical os but does not cover it. Although not a true placenta previa, low-lying placentas are associated with increased risks for bleeding and other adverse pregnancy events. Ante-partum haemorrhage is one of the most challenging obstetric complications encountered in pregnant women. The major causes of ante-partum haemorrhage are placenta previa and abruptio placenta. Placenta praevia complicates approximately 1 in 200 deliveries and is one of the leading causes of vaginal bleeding in the second and third trimesters.[9]

II. Materials And Methods:

Study Design: Cross-sectional study design.

Study Duration: One year.

Setting Of The Study: Hospital based study to those antenatal mothers with history of caesarean section attending Department of Obstetrics and Gynaecology JNIMS Hospital, Porompat, Imphal, Manipur.The study is conducted to those antenatal mothers with history of caesarean section, at or more than 28 weeks of gestation who are attending Department of Obstetrics and Gynaecology JNIMS Hospital, Porompat, Imphal, Manipur and are willing to participate in this study

Inclusion Criteria:
The study includes the following criteria:
☐ Antenatal mothers at or more than 28 weeks of gestation who had ultrasound documented placenta praevia.
☐ Antenatal mothers with or without history of caesarean section.

Exclusion criteria
The study excludes:
☐ All the antenatal mothers before 28 weeks of gestation.
☐ Primigravida mothers.

Sample Size:
From the past study, prevalence rate (P) =2.92 % =0.0292%
Confidence interval = 95%
Allowable error = 5%
Therefore, Sample size, n = $n = Z^2 pq E^2$
Where, n = number of items in samples
Z = 1.96, Confidence level factor at the 95%
P = expected sample proportion
E = square of maximum allowance for error
q = (1-P) or estimated the proportion of failures
Sample size, $n = Z^2 pq E^2$
$n = (1.96)^2 x$ 0.0292 x 0.9708(0.05)2 $n = 3.8$ x 0.0292 x 0.97080.0025 $n = 0.107710.0025$
n = 45

Sampling /Method Of Recruitment:

In this study non-probability purposive sampling technique is adopted to antenatal mothers with history of caesarean section, at or more than 28 weeks of gestation attending department of obstetrics and gynaecology jnims hospital, Porompat, Imphal,Manipur.

A self-structured checklist was designed to collect data about study participant's socio-demographic characteristics, obstetrics and gynaecological history, history of current pregnancy, and maternal and neonatal outcome

Tool consists of four sections:
Section - 1: Description of socio-demographic variables:
This includes the age, religion, occupation, residence, educational and socio- economic status of patient.

Section -2: Obstetrics and Gynaecological history:
A detailed general physical, systemic, per abdomen and local examination was conducted in each patient. It was enquired whether the patient had history of following:
☐ With or without previous caesarean section
☐ Previous placenta previa
☐ Previous abortion and dilatation and curettage
☐ Previous multiple pregnancy
☐ History of IUFD
☐ History of smoking
☐ History of endometritis
☐ History of blood transfusion
☐ Types of caesarean section

Section- 3: History of current pregnancy and ultrasound findings:
This includes parity, gravidity interval, gestational weeks, types of placenta previa, placental position.

Section -4: Maternal and neonatal outcome:
☐**Maternal outcome:** This includes PPH, adherent placenta, PROM, hysterectomy, anaemia, blood transfusion, duration of hospital stay.
☐**Neonatal outcome:** This includes sex, APGAR Score, birth weight, IUGR, neonatal death, preterm birth, admission to NICU.

All the patients were subjected to routine investigations like haemoglobin, clotting time, bleeding time, platelet count and blood group. Ultrasound findings of all the patients were noted down to diagnose placenta previa and those patients will be followed up till their delivery in our institute.

Data Collection Procedure:
☐Collection of demographic data by using demographic proforma.
☐Ultrasound scanning were performed to those antenatal mothers with or without history of caesarean section, at or more 28 weeks of gestation attending Department of Obstetrics and Gynaecology JNIMS Hospital, Porompat, Imphal, Manipur to diagnose placenta previa and of these, patients willing to participate in the study were followed up till their delivery in our institute.
☐Written permission was obtained from the Institutional Ethics Committee, JNIMS Hospital, Porompat, Imphal, Manipur.
☐Informed consent was obtained from each participant who would be attending Department of Obstetrics and Gynaecology JNIMS Hospital, Porompat, Imphal, Manipur.
☐The participants were offered adequate information about the study purposes and its significance regarding the prevalence of placenta previa with history of caesarean section.
☐The information was kept confidential and information that might reveal their identity would not be recorded, and only aggregated data would be communicated.
☐These information were not be given to anybody else without any permission.

Statistical analysis:
At the end of the study the data collected was tabulated and analysed accordingly. The collected data was entered in MS Excel and analysed by using database programme SPSS version 23 for Windows. An appropriate statistical analysis will be done by using the following:
Descriptive like mean, median, standard deviation, frequency and percentage distribution were used for assessing demographic characteristic of those antenatal mothers with or without previous history of caesarean section.
Inferential statistics is a statistic design that allow inference from a sample statistic to a population parameter. In this study the researcher used:
☐ Fisher's exact test- to find out the association between placenta previa and with or without previous caesarean section with their selected demographic variables.
☐ Chi-square test- to co-relate between placenta previa with history of caesarean section.
P value of < 0.05 was taken as statistical significant.

Ethical Consideration:
Ethical clearance was obtained from the Institutional Ethics Committee, JNIMS Hospital, Porompat, Imphal, Manipur. The researcher offered adequate information about the study purposes and its significance. Participation is voluntary. Participants were assured that their responses would be confidential and information that might reveal their identity would not be recorded, and only aggregated data would be communicated.

III.   Result:

In fig-1, it is observed that out of 45 respondent under study, majority 40% (18nos) belong to age group (26-30yrs) whereas 28.9%(13 nos) belong to age category (36-40) yrs. 22.2% (10 nos) were belong to age group (31-35) yrs. And only 8.9% (4 nos) belong to (20 -25) yrs of age.
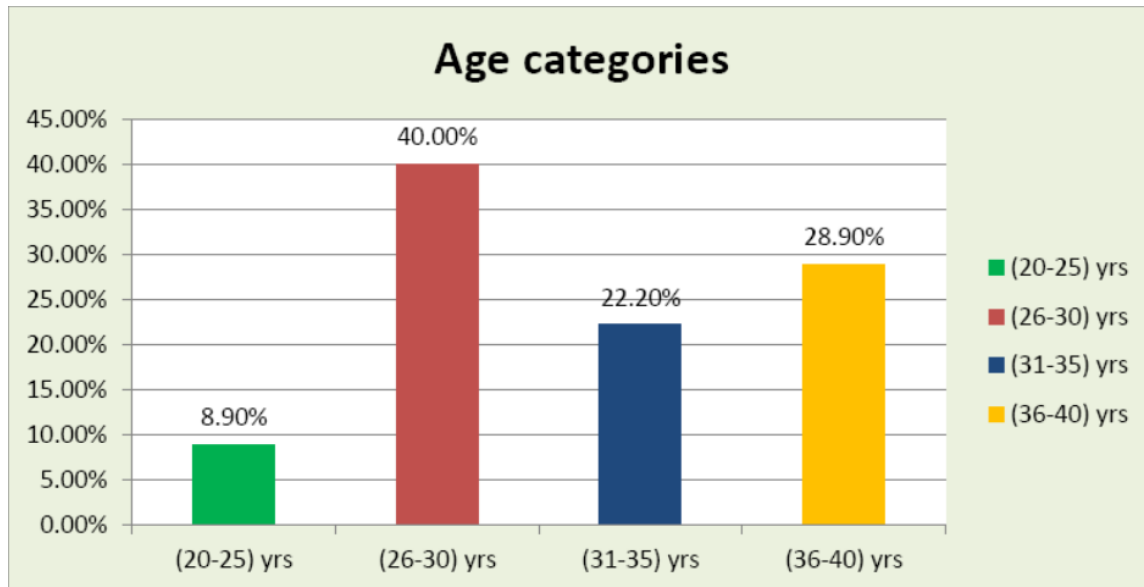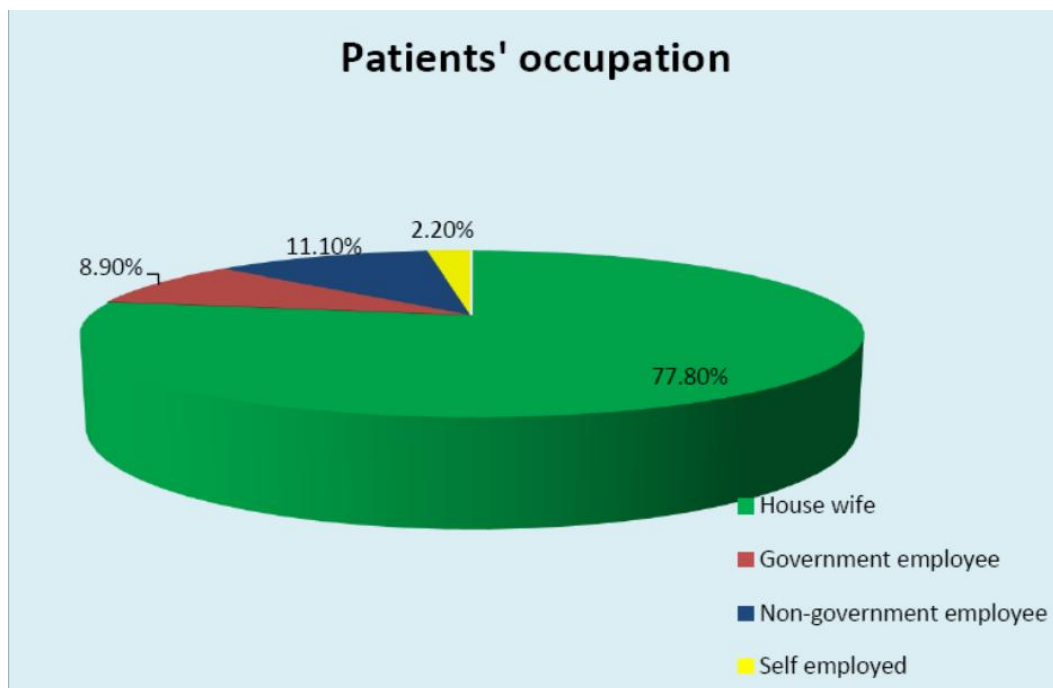
Fig 1: Column graph showing distribution of patients according to their age category.

In this study, it is observed that, out of the 45respondent under study, 55.6% (25 nos) were belong to Hindu religion. 26.7% (12 nos) were belong to Muslim religion. 13.3% (6 nos) were Christian religion. And only 4.4% (2 nos) were of others religions.

Out of the 45 respondents under study, 62.2% (28 nos) were middle class whereas 22.2% (10 nos) were low class. And only 15.6% (7 nos) were upper middle class.

In present study, out of the 45 respondents under study, majority of the respondents were 62.2% (28 nos) were from rural area whereas 37.8% (17 nos) were from urban area.

Fig 2: Pie-chart showing distribution of patients according to their occupation.

From the above fig.2 it is observed that out of the 45 respondent, majority 77.8% (35 nos.) respondents were house wife, 11.1% (5 nos.) were non-government employee, 8.9% (4nos) were government employee. And only 2.2% (1 no.) was self employed. In Fig.3below, it is observed that out of the 45 respondent under study, majority of the respondents 26.7% (12nos) were high school in their educational qualification whereas 24.4%(11nos) were higher secondary school in their educational qualification. Around 22.2% (10 nos) & 20%(9 nos) respondents were graduate and primary education respectively. And only 6.7% (3 nos) were illiterate.
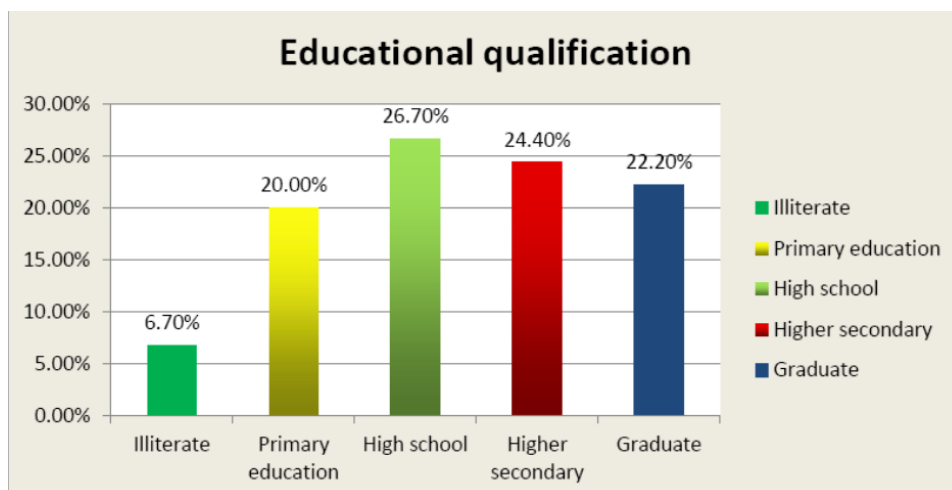
Fig 3: Column chart showing distribution of patients according to their education qualification.
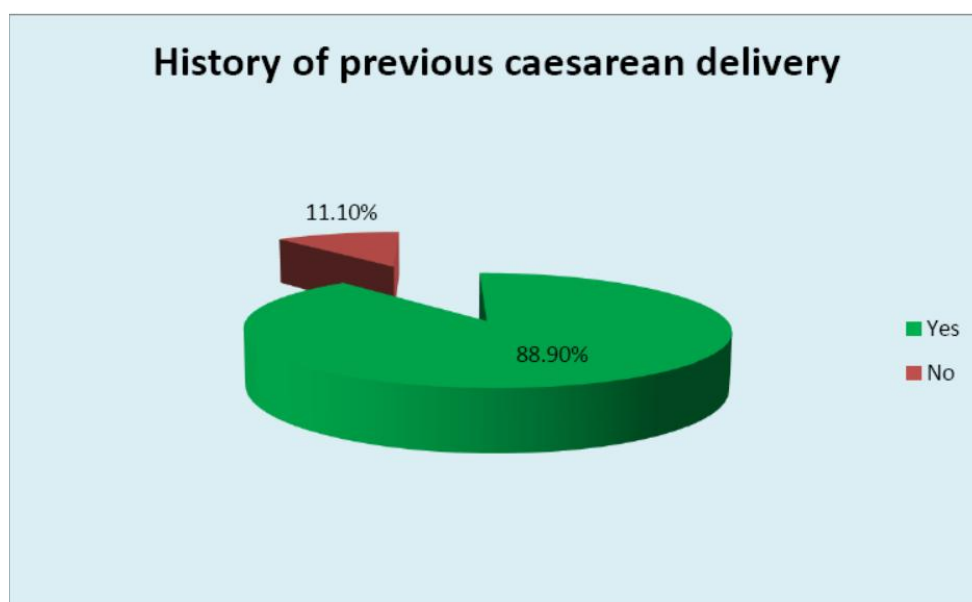

Fig 4: Pie-chart showing distribution of patients according to their history of previous caesarean delivery.

From the above Fig 7, it is observed that out of the 45 respondents under study, majority of the respondents 88.9% (40nos) who had history of previous caesarean delivery whereas 11.1% (5nos) who had not history of caesarean delivery.

Table 1: Association of the patients' history of caesarean section with development of placenta previa.

Maternal characteristics		Caesarean section history		Total	p-value
		Previous CS N(%)	No CS N(%)		
Presence of placenta previa	Yes	34(94.4)	2(5.6)	36	.047
	No	6(66.7)	3(33.3)	09	
Total		40(88.9)	5(11.1)	45	

From the above table, it is observed that among the patients who had placenta previa majority 94.4% (34 nos) had done previous caesarean section in their history. It was found that there was significantly associated between the presence of placenta previa and their previous caesarean section. (p-value <0.005). From the below table 2, we see that among the low lying type of placenta previa 93.8% (15 nos.) have done caesarean section whereas only 6.3% (1 no) has not done caesarean section. Among the marginal type of placenta previa 83.3% (5 nos.) have done caesarean section whereas only 16.7% (1 no) has not done caesarean section. Among the incomplete type of placenta previa 100% (5 nos.) have done caesarean section. Among the complete type of placenta previa 100% (9 nos.) have done caesarean section. In the aspect of the patients, their history of

caesarean section with their Gestational age, Inter-birth interval (in Years) were significantly associated i.e, p-value< 0.05.

Table 2: Association of risk factors history of current pregnancy & ultrasound finding and maternal outcomes of the patients with history of caesarean section.

Risk factors		Caesarean section history		Total	p-value
		Previous CS n(%)	No CS n(%)		
Parity	One	37(85.0)	3(15.0)	20	.380
	Two	20(95.2)	1(4.8)	21	
	Three	3(75.0)	1()25.0	04	
	Four or more	-	-	-	
Gestational age (weeks)	28-31	0	2(100)	02	.010
	32-35	8(100)	0	08	
	36-39	28(90.3)	3(9.7)	31	
	>39	4(100)	0	04	
Inter-birth interval (years)	<1	1(33.30	2(66.7)	03	.004
	1-2	2(50.0)	2(50.00	04	
	2-3	3(100)	0	03	
	3-4	11(100)	0	11	
	4-5	6(85.7)	1(14.3)	07	
	>5	17(100)	0	17	
Type of Placenta previa	Low lying	15(93.8)	1(6.3)	16	.136
	Marginal	5(83.3)	1(16.7)	06	
	Incomplete	5(100)	0	05	
	Complete	9(100)	0	09	
	No previa	6(66.7)	3(33.3)	09	
Placental position	Anterior	15(83.3)	3(16.7)	18	
	Posterior	**25(92.6)**	**2(7.4)**	**27**	

Table 3 describes the association of risk factors with the presence of placenta previa. The other tables 4 and 5 demonstrate the maternal and neonatal outcomes of in mothers with placenta previa.

Table 3: Association of risk factors history of current pregnancy & ultrasound finding of the patients with their presence of placenta previa.

Risk factors		Presence of placenta previa		Total	p-value
		Yes n(%)	No n(%)		
Parity	One	15(75.0)	5(25.0)	20	.764
	Two	18(95.7)	3(14.3)	21	
	Three	3(75.0)	1(25.0)	04	
	Four or more	-	-	-	
Gestational age (weeks)	28-31	0	2(100)	02	.027
	32-35	6(75.0)	2(25.0)	08	
	36-39	27(87.1)	4(12.9)	31	
	>39	3(75.0)	1(25.0)	04	
Inter-birth interval (years)	<1	0	3(100)	03	.006
	1-2	3(75.0)	1(25.0)	04	
	2-3	2(66.7)	1(33.3)	03	
	3-4	11(100)	0	11	
	4-5	5(71.4)	6(28.7)	07	
	>5	15(88.2)	2(11.8)	17	
Type of Placenta previa	Low lying	16(100)	0	16	.001
	Marginal	6(100)	0	06	
	Incomplete	5(100)	0	05	
	Complete	9(100)	0	09	
	No previa	0	9(100)	09	
Placental position	Anterior	14(77.8)	4(22.2)	18	.761
	Posterior	**22(81.5)**	**5(18.5)**	**27**	

.

Table 4: Effects of placenta previa on the maternal outcomes of the index pregnancy.

Maternal outcome		Placenta previa		Total	p-value
		Yes n(%)	No n(%)		
PPH	Yes	1(6.7)	14(93.3)	15	1.00
	No	2(6.7)	28(93.3)	30	
Adherent placenta	Yes	0	7(100)	7	1.00
	No	3(7.9)	35(92.1)	38	
Surgical site infection	Yes	0	2(100)	2	1.00
	No	3(7.0)	40(93.0)	43	
PROM	Yes	0	1(100)	1	1.00
	No	3(6.8)	41(93.2)	44	
Hysterectomy	Yes	0	5(100)	5	1.00
	No	3(7.5)	37(92.5)	40	
UTI	Yes	0	3(100)	3	1.00
	No	3(7.1)	39(92.9)	42	
Anemia	Mild	1(9.1)	10(90.9)	11	.588
	Moderate	1(4.5)	21(95.5)	22	
	Severe	1(20.0)	4(80.0)	5	
	No	0	7(100)	7	
Blood transfusion	1-3 units	1(5.6)	17(94.4)	18	.248
	4 or more units	1(33.3)	2(66.7)	3	
	No	1(4.2)	23(95.8)	24	
Hospital stay	Less than 14 days	3(7.7)	36(92.3)	39	1.00
	14 or more days	0	6(100)	6	
ICU admission	Yes	1(5.6)	17(94.4)	18	1.00
	No	2(7.4)	25(92.6)	27	
Other complications	Yes	0	6(100)	6	1.00
	No	3(7.7)	36(92.3)	39	

Table 5: Effects of previous placenta previa on the neonatal outcomes of the index pregnancy.

Neonatal outcome		Placenta previa		Total	p-value
		Yes n(%)	No n(%)		
Sex	Male	3(10.7)	25(89.3)	28	.279
	Female	0	17(100)	17	
Birth outcome	Alive	3(8.1)	34(91.9)	37	.625
	Dead	0	8(100)	08	
APGAR at 1min	<7	1(50.0)	1(50.0)	02	.012
	7-10	2(4.7)	41(95.3)	43	
APGAR at 5min	<7	3(7.9)	35(92.1)	38	.442
	7-10	0	7(100)	07	
Birth weight (grams)	<1000	-	-	-	.371
	1000-1499	0	8(100)	08	
	1500-2500	1(20.0)	4(60.0)	5	
	>2500	2(6.3)	30(93.8)	32	
IUGR	Yes	0	7(100)	7	.442
	No	3(7.9)	35(92.1)	38	
Preterm birth	Yes	1(33.3)	8(88.9)	9	.550
	No	2(5.6)	34(94.4)	36	
Neonatal jaundice	Yes	0	5(100)	5	.526
	No	7(7.5)	33(92.5)	40	
Respiratory distress syndrome	Yes	1(33.3)	2(66.7)	3	.055
	No	2(5.3)	40(95.2)	42	
NICU admission	Yes	1(14.3)	6(85.7)	7	.405
	No	2(5.3)	36(94.7)	38	
Other complications	Yes	3(6.8)	41(93.2)	44	.787
	No	0	1(100)	1	

IV.   Discussion

In this study, the relationship between a history of previous caesarean births and placenta previa were addressed. Placenta previa (PP) is a severe complication of pregnancy where the placenta is abnormally placed and partially or totally covers internal os of the cervix.[10] It is associated with potentially life-threatening conditions for the mother, such as antepartum and postpartum bleeding, invasive placentation, need for hysterectomy, blood transfusion, septicemia, and thrombophlebitis. Similarly, adverse fetal and neonatal outcome are observed, with a high risk of preterm birth and perinatal death.[11] Many studies show that the incidence of placenta previa has been rising in parallel with the increasing rate of caesarean delivery.

Worldwide, the rate of primary and overall caesarean sections (CS) has been steadily and significantly rising. This increase has been attributed to multiple factors including increased maternal requests and obstetricians' preference. This rise in placenta previa is despite its associated morbidities and the increased incidence of in future pregnancies. Placenta previa is associated with the increased risk of maternal and perinatal morbidity and mortality .[12]

A total of 45respondent were observed under study. The age of the patients ranged between 20 years to 40 years, majority 40% (8 nos) belong to age group (26-30) yrs whereas 28.9% (13 nos) belong to age category (36-40) yrs. 22.2% (10 nos) were belongs to age group (31-35) yrs. And only 8.9% (4nos) belong to (20 -25) yrs of age. This finding was similar to the study conducted by Nosheen Arshad et al. In their study found that out of total 35 participants females aged 30yrs were more prevalent of placenta praevia with previous history of caesarean section.[13] Similar study by Sallama Kamel shows the demographic characters among the cases, 18% of women below 30yrs old, 82% were above 30yrs, while in the control group, 62% were aged below 30yrs, 38% were above 30yrs (Mean±SD=34.6±4.83,29.28±7.40) respectively, p value <0.001, and this is statistically highly significant.[14]

It is observed that out of the 45 respondents under study, majority of the respondents 88.9% (40nos) who had history of previous caesarean delivery whereas 11.1% (5nos) who had not history of caesarean delivery.

We observed that among the patients with placenta previa majority 94.4% (34 nos) had done previous caesarean section in their history. It was found that there was significant association between the presence of placenta previa and their previous caesarean section. (p-value <0.005). We have seen that among the low lying type of placenta previa 93.8% (15 nos.) have done caesarean section whereas only 6.3% (1 no) has not done caesarean section. Among the marginal type of placenta previa 83.3% (5 nos.) have done caesarean section whereas only 16.7% (1 no) has not done caesarean section. Among the incomplete type of placenta previa 100% (5 nos.) have done caesarean section. Among the complete type of placenta previa 100% (9 nos.) have done caesarean section. Furthermore, the findings of the present study are consistent with study conducted by Balkan J Med Genet also found that a total, 76 cases were recruited in the framework of this study. The incidence of placenta previa was higher in patients with prior C-sections. Also it is found that 50 women (66.0%) had a history of previous C-sections. The percentage with one prior C-section was 46.0% (23 cases) and 54.0% (27 cases) with two or more prior C-sections. Of all these patients, six (8.0%) cases developed placenta percreta, seven (9.0%) were transferred to the intensive care unit (ICU), 14 (18.0%) women needed blood transfusions, and eight (11.0%) underwent a hysterectomy.[15] Similar study conducted by Anisodowleh Nankali et al. from Kermanshah University of Medical Sciences, Kermanshah, Iran, on the frequency of placenta previa and maternal morbidity established in previous caesarean delivery, 3.63 percent of patients with a history of previous caesarean delivery experienced placenta previa. 74.5 percent of patients having placenta previa had previously undergone a C-section, and 47.6 percent of them required a hysterectomy.[16]

Another study conducted by Pushpa A. Yadava, total number of deliveries performed during the study period was 16330, of them, 88 cases were placenta previa. Thus, the prevalence of PP was 0.53%. Multiparity was one of the etiological factors in 84.09%, whereas previous LSCS was 47.73%, previous history of D and E was 14.73%, previous history of placenta previa was 7.95%. Obstetric hysterectomy was done in 7 (7.95%) patients out of 88 patients. 92.04% of patients delivered with caesarean section and 7.95% patients delivered with normal vaginal delivery. 22 (26.50%) babies out of 83 live born were admitted in NICU.[17]

In the aspect of the patients, their history of caesarean section with their Gestational age, Inter-birth interval (in Years) and type of placenta previa were significantly associated i.e, p-value< 0.05.

Hence, through this result advancing maternal age, multiparity, prior caesarean section, and prior abortions are independent risk factors for placenta previa.

V.   Conclusion

The study concluded that high number of caesarean section as in according to our study caesarean section are closely linked to placenta previa. Females with the history of caesarean section has shown the highest percentage of placenta previa. According to this study maternal age along with increasing C-sections also plays a vital role in this regard. Placenta despite of its crucial role in the health of both fetus and mother, is the least understood organ as the development of fetus completely depends upon it and with the increasing trend of caesarean sections the possibilities of abnormal placental implantation is increasing worldwide which eventually results in life threatening conditions for the conceiving mother. Pregnant women with a history of caesarean delivery must be regarded as high risk for placenta previa and must be monitored carefully. This study provides yet another reason for reducing the rate of primary caesarean delivery and for advocating vaginal birth for women with prior caesarean delivery. The current study's findings show that having a prior caesarean procedure significantly increases the likelihood of developing placenta previa in subsequent pregnancies.

References:

[1]   Surg J (N Y). Placenta Previa [Internet].2020 [6 July 2020; Cited 2023 May 18]. Available From
        Https://Www.Ncbi.Nlm.Nih.Gov/Pmc/Articles/PMC7396465/Figure/FI0015psog-5/
[2]   Tarza Taha Ahmed. The Relation Of Placenta Previa With History Of Previous Caesarean Section And Miscarriages [Internet].
        Advanced Medical Journal ;2024 [12 March 2024; Cited 25 August 2023];9(1):135-143.
[3]   Aliyu MH, Lynch O, Wilson RE, Alio AP, Kristensen S, Marty PJ, Whiteman VE, Salihu HM. Association Between Tobacco Use
        In Pregnancy And Placenta-Associated Syndromes: A Population-Based Study. Arch Gynecol Obstet. 2011 Apr;283(4):729-34.
[4]   D.C.Dutta's . Textbook Of Obstetrics. New Central Book Agency(P) Ltd. 7th Edition; 241-250
[5]   Wang Y, Hu C, Pan N, Chen C, Wu R. Prophylactic Uterine Artery Embolization In Second-Trimester Pregnancy Termination
        With Complete Placenta Previa. J Int Med Res. 2019 Jan;47(1):345-352.
[6]   JB. Sharma. Textbook Of Obstetrics. 3rd Edition; Published By: Dr.Bipin Gupta. 434
[7]   Errol R. Norwitz M.D, Ph.D, M.B.A. George R. Saade M.D.,Hugh Miller M.D.,Christina M. Davidson M.D. Placenta Previa
        [Internet]. 2016 [21 October 2016;Cited 2022 May 29].
[8]   Cunningham FG, Leveno KJ, Bloom SL, Haulh JC, Gilstrap LC, Wenstrom KD. Editors. Obstetric Haemorrhage. In: Williams
        Textbook Of Obstetrics, 22nd Ed. New York: Mcgraw-Hill; 2013;809-823.
[9]   Hull AD, Resnik R (2014) Placenta Previa, Placenta Accreta, Abruption Placentae, And Vasa Previa. In: Creasy And Resnik's
        Maternal-Fetal Medicine, Principles And Practice. 7th Edn. Elsevier-Saunders, Philadelphia. P. 732–742
[10]   Omar Ab Azzam .Placenta Previa; Medical Science Journal For Advance Research [Internet] 2023 September [Cited 2023
        September 28];(3):116-122.
[11]   Parvin, Z., Das, S., Naher, L., Sarkar, S. K., & Fatema, K. Relation Of Placenta Praevia With Previous Lower Segment Caesarean
        Section (LUCS) In Our Clinical Practice. Faridpur Medical College Journal[Internet]. 2017 Oct[Cited 2022 June 12] ; 12(2):75-77.
[12]   Matalliotakis M, Velegrakis A , Goulielmos Gn , Niraki E , Patelarou Ae , Matalliotakis. Association Of Placenta Previa With A
        History Of Previous Cesarian Deliveries And Indications For A Possible Role Of A Genetic Component. National Library Of
        Medicine[Internet] 2017 Dec [Cited 2022 July 10]; 20(2):5-10.
[13]   Rabia, Robina Zahoor, Hina Ameer Chughtai, Hania Zafar, Sadia Ilyas, Sohaib Mujahid Et Al. The Incidence Of Placenta Previa
        Among Women With Subsequent Pregnancy After Previous Caesarean Sections. Fortune Journal [Internet] 2022 [Cited 2022 June
        18]; 5(3): 151-158.
[14]   Bellalaswetha. Study On Association Of Placenta Previa With Previous Caaesarean Section.
        [Internet]2016.[Cited2022may20];Availablefrom:Https://Www.Semanticscholar.Org/Paper/Study-On-Association-Of-Placenta-
        Previa-With Bellalaswetha/111ff5ea6771b097836aff0677
[15]   Dr. Itedal Abdelraheem Mohamed Ahmed. Prevalence And Risk Factors Of Placenta Previa Insaudi Arabia And Sudan. [Internet]
        2016 [Cited 2022 June 12] ; 2(9):22-37. Available From:
        Https://Www.Academia.Edu/64612906/Prevalence_And_Risk_Factors_Of_Placenta_Previa_In_Saudi_Arabia_And_Sudan_2016;
        Doi: Http://Dx.Doi.Org/10.22192/Ijcrms.2016.02.09.003
[16]   Utpala Mazumder, Saumitra Sarkar , Saumitra Sarkar. Placenta Previa With History Of Previous Caesarean Delivery – An
        Obstetrician's Nightmare. Research Gate [Internet] 2015 Feb. [Cited2022july7];Availablefrom:
        Https://Www.Researchgate.Net/Publication/321
[17]   Pushpa A. Yadava, Riya R. Patel, Anushka S. Mehta. Placenta Previa: Risk Factors, Feto-Maternal Outcome And
        Complications[Internet] 2019 October[Cited 18 November 2023];8(12):4842-4846.Available From
        Https://Www.Researchgate.Net/Publication/337549879_ Maternal_Outcome_And_Complications