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Risk Factors for Placenta Previa at Al Azyzia General Hospital

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Abstract
Background: Placenta previa is the implantation of the partly or entirely in the lower segment of the uterus. It is classified as minor or major pp. It is a major cause of obstetrical hemorrhage which leads to increase in maternal morbidity & perinatal mortality, its incidence is still rising worldwide, in this study we try to focusing on the risk factors which leads to the development of pp.
Objective: To determine the risk factors for placenta previa at Al Azyzia Hospital.
Study design: case-control study.
Setting: Department of Obstetrics and Gynecology of Al-Azyzia General Hospital.
Methods: the study was healed at Al Azyzia General Hospital, (66) Pregnant ladies were presented with placenta previa, admitted to the labor room as emergency cases for evaluation of their clinical condition, in comparison to (131 comparison group) without placenta previa, during the period of July 2015 to March 2016.
Variables of interest: social history, gynecological history, blood transfusion, past & present obstetrical performance & complication.
Results: significant predictors for pregnant ladies with placenta previa were: age more than 35 years, previous history of evacuation of the uterus or dilatation & curettage, bleeding during pregnancy, delivery by c/s in previous pregnancy & multiparty.
Conclusion: placenta previa is associated with high maternal morbidity & mortality. In this study, we confirm the risk factors for the development of placenta previa which can be used in the antenatal period to identify mothers at risk.

1. Introduction

1.1 Definition

Placenta Previa: is used to describe a placenta that is implanted over or very near the internal cervical OS [(1)].
There are several possibilities:

1. Total PP: the internal os is covered completely by the placenta.
2. Partial PP: the internal os is partially covered by the placenta.
3. Marginal PP: the edge of placenta is at the margin of the internal OS.
4. Low lying placenta: the placenta is implanted in the lower uterine segment such that the placental edge does not reach the internal OS, but within 2cm of the internal OS [(2)].

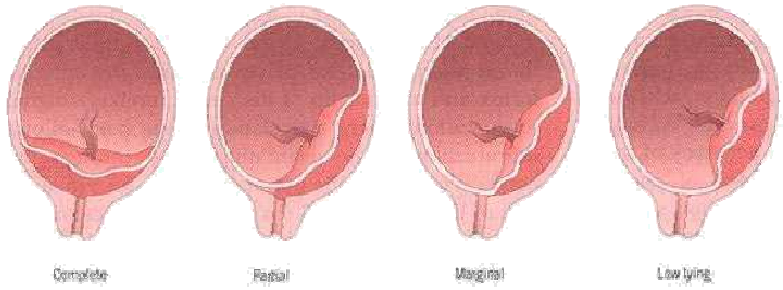

Figure 1. The Placenta

1.2 Incidence

PP complicates approximately 3-5 per 1000 pregnancies worldwide and is still rising [(3)]. The incidence is significantly higher at 20 weeks approximately 5% and continues to diminish until it approaches 0.5% at 36 weeks and above [(4)]. This is because as pregnancy advances the lower uterine segment is formed, the upper segment enlarges and moves with the placenta. [(5)]

1.3 Pathophysiology of placenta previa:

It is hypothised to be related to abnormal vascularization of the endometrium caused by scarring or atrophy from previous trauma, surgery, or infection, possibly secondary to inflammatory or atrophic changes. [(7)] With the progression of pregnancy more than 90% of these low-lying placentas identified early in pregnancy will appear to move away from the cervix & out of the lower uterine segment. Although the term' placental migration' it has

been used, most authorities do not believe the placenta moves. [8] Rather it is felt that the placenta grows preferentially towards a better vascularized fundus (trophotropism). [8] Whereas the placenta overlying the less well vascularized cervix may undergone atrophy, as such, sections of the placenta having undergone atrophic changes could persist as a vasa previa. [9]

1.4 Risk factors for development of placenta previa:

1. Age: advancing maternal age increases the risk of pp, [10]
Aged 12-19 years - 1%
Aged 20-29 years - 0.33%
Aged 30-39 years - 1%
Older than 40 years - 2%. [11]

2. Multiparty: it is more common in women who had previous pregnancies, develop one for every twenty women who have had 6 or more pregnancies [12] the reason is not clear but it may be associated with the ageing of vasculature of the uterus This causes placental hypertrophy. [5][13]

3. Multiple gestation: this occur either because of larger surface of the placenta or due to risk factors for the development of multiple gestation as: older mother, family history which increase the incidence of pp.

4. Previous C\S birth: surgical disruption of the uterine cavity is a potential risk factor for pp. It is known to cause lasting damage to the myometrium and endometrium. The first observation that reported an association between prior C\S& increased risk for pp dates back to the early 1950. [17]

5. Dilatation &curettage: Refers to surgical removal of part of the lining of the uterus &\or contents of the uterus by scraping &scooping (curettage). [7]

6. Prior pp: Mothers with pp have a tenfold risk of recurrence in a subsequent pregnancy. This is thought to be linked to defective decidua vascularization. [13] [19]

7. Nonwhite ethnicity: Asian women have excess risk of pp compared with white women, with the lowest risk in Japanese &Vietnamese women & the highest risk in Filipino women. [20]

8. IVF/ICSI: The risk of pp may be increased in pregnancies conceived by (ART). [21]

9. Smoking: Smoking triples the risk of pp, [22] it is theorized that carbon monoxide hypoxemia caused compensatory placental hypertrophy. Perhaps related to defective decidual vascularization.

10. Living at high attitude: Also, increase the risk, the common factor is that lower level of oxygen get to the placenta which might lead to increase its surface area try to compensate as the placenta spreads. [23]

11. Birth spacing: Is associated with a risk of pp. There is emerging risks of uteroplacental bleeding disorder (placental abruption, PP) in long interval possible longer than 5 years. [24] In a study carried out in Norwegian women, it was found that birth spacing of more than 4 years was associated with pp. [13]

12. Fetal sex: PP is associated with male births. [13] [19] [25]. The reason for this is not known but it could be linked to maternal hormones or prematurity.

13. Other causes: As uterine fibroid, large placentation(erythroblastosis), [26] low socioeconomic status. [27]

1.5 Clinical findings

The most characteristic event in PP is painless hemorrhage, which usually does not appear until near the end of the second trimester or after, [28] generally first episode of bleeding occurs after 36th week 60%,32-36th Weeks 30%, before 32 weeks 10%. [29] Some abortions, however, may result from such an abnormal location of the developing placenta. [28] Frequently, bleeding from pp has its onset without warning, presenting without pain in a woman who has had an uneventful prenatal course. [30]

Fortunately, the initial bleeding is rarely so profuse as to prove fatal. Usually it ceases spontaneously, only to recur in some women, particularly those with a placenta implanted near but not over the cervical os, also can provoke by digital examination or intercourse. [31] Bleeding does not appear until the onset of labour, when it may vary from slight to profuse hemorrhage & clinically may mimic placental abruption or vasa previa which can be differentiated by U/S. [32]

Hemorrhage from the placental implantation site in the lower uterine segment may continue after delivery of the placenta, because the lower uterine segment contracts poorly compared with the uterine body. PP may be associated with placenta accrete or one of its more advanced forms, placenta inccreta or perccreta, such abnormally firm attachment of the placenta might be anticipated because of poorly developed decidua in the lower uterine segment. [27]

1.6 Diagnosis of placenta previa:

PP should always be suspected in women with uterine bleeding during the latter half of pregnancy. The possibility of PP should not be dismissed until sonographic evaluation has clearly proved its absence. [1] (TVS) is now well established as the preferred method for the accurate localization of a low lying placenta, establishing (TVS) as the gold standard for the diagnosis of placenta previa, [34](TVS) also has been shown to be safe in the

presence of PP,[35] 60% of women who undergo (TAS) may have a reclassification of placental position when they undergo (TVS).[36]With (TAS), there is poor visualization of the posterior placenta, the fetal head can interfere with visualization of the lower segment, also its accuracy may be adversely affected by maternal obesity, inability to locate the internal cervical os which is critical for correct diagnosis, in addition a full maternal bladder usually helpful in (TAS) but may cause a false –positive diagnosis up to 25% [37] if the bladder is overly distended ,in this situation the cervix would appear artificially elongated & give a normally implanted placenta the appearance of encroachment into the internal cervical OS.

Accuracy rate for (TVS) are high sensitivity 87.5%, specificity 98.8%, positive predictive value 93.3% negative predictive value 97 established vaginal bleeding. Transvaginal sonogram of a complete placenta previa *(PP)*. Note that both the placenta and the internal cervical os *(arrow)* are clearly depicted. *A,* anterior lip of cervix; *P,* posterior lip of cervix. Diagram demonstrating the technique for transvaginal sonography of placenta previa. *T,* transvaginal transducer; *A,* anterior lip of cervix; *P,* posterior lip of cervix. Complete placenta previa is shown completely covering the internal os *(arrow)*. The transvaginal transducer lies within the vagina, about 2 cm from the anterior lip of the cervix. The angle between the transducer and the cervical canal is 35 degrees, demonstrating why the probe does not enter the cervix. [45]

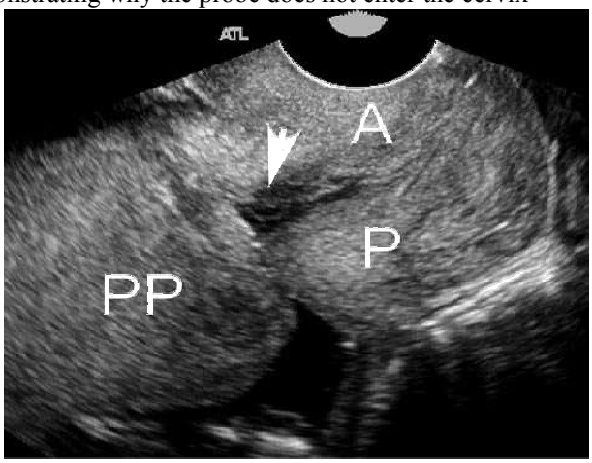

Figure 2. The……

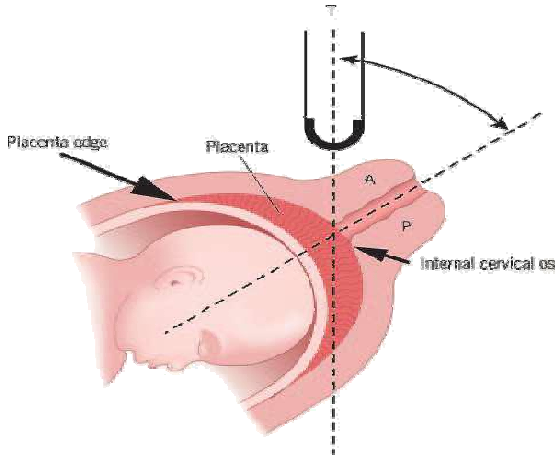

Figure 3. The……

MRI will also accurately image the placenta & is superior to (TAS).[43]It is unlikely that is confers any benefits over (TVS) for placental localization ,but this has not been properly evaluated . U/S are encouraged to report the actual distance from the placental edge to the internal cervical os at (TVA), using standard terminology of millimeters away from the os or millimeters of overlap. A placental edge exactly reaching the internal os is described as 0 mm. [43] , examination for placental location in the third trimester is recommended [44] overlap of more than 15 mm is associated with an increased likelihood of pp at term.[45] distance from the internal os & clinical features such as bleeding because continued changes in placental location is likely. An average migration rate of <1mm per week was highly predictive of abnormal outcome [46]overlap of more than 20 mm at any time in the third trimester is highly predictive of the need for c/s.[47]

1.7 Other causes of antepartum hemorrhage

The causes of APH can be divided into 4 main groups:

1. Placenta previa.
2. Placental abruption.
3. Placenta accrete/increta/percreta.

Others:

-Show, friable cervical ectropion/cervical trauma, local infection of the cervix /vagina, varicosities, vasa previa, coagulation defects. PP & placental abruption together account for 50% of bleeding & represent the greatest threat to the fetus & mother.

1.8 Treatment

A recent study concluded that more than two-thirds of women with a distance of more than 10 mm from the placental edge to the cervical os have vaginal delivery without an increased risk of hemorrhage. [49] C/S for pp was first used in England for the treatment of PP by Lawson Tait in 1898 lower segment c/s. [50] Any woman going to theatre with known pp should be delivered by the most experienced obstetrician & anesthetist available. [51] Women with pp who have had a previous c/s at high risk of having a morbidly adherent placenta & should have been imaged antenatally. When Pl acc. Is felt to be likely consultant anesthetist & obstetrician input are vital in planning & conducting the delivery.

- Assess maternal and fetal health
- Start intravenous infusion of saline or Ringer's lactate using a large bore needle.
- Blood replacement as deemed necessary (based on amount of bleeding and maternal vital signs)
- Monitor intake and output. Insert urinary catheter.
- Continuous fetal heart rate monitoring until active bleeding has stopped.
- Assess the amount of blood loss.
- Lab assessment:
    - CBC, Hgb, Hct, coagulation screen, electrolytes, blood urea, creatinine.
    - Group and cross match 4 units packed red cells (take blood during transfer).
    - Assess uterine tone and presence of contractions.
- Strict bed rest in the lateral position. If the woman is retained in a level II center, the following is also recommended:
- Bed rest until active bleeding has stopped for 2 – 3 days. - Assess and treat anemia
- Consider steroid (betamethasone) administration.
- Daily fetal movement counts and non-stress testing
- Delivery at 37-38 weeks, unless indicated earlier for maternal or fetal reasons. (53)

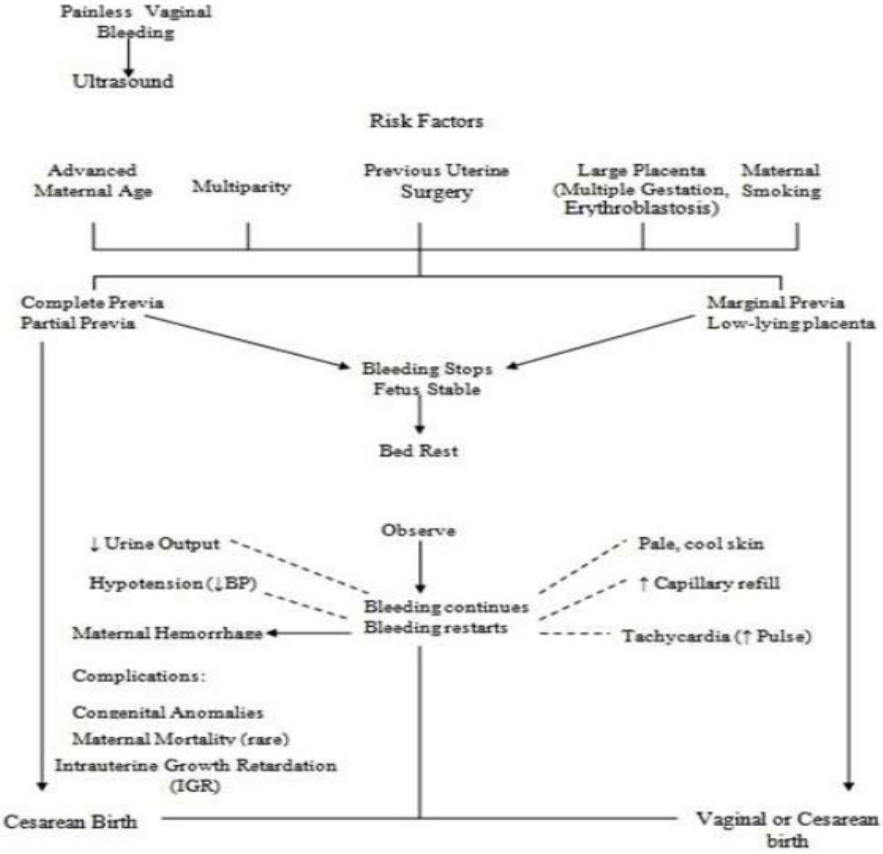

Figure 4. Diagram for the management of PP.

1.9 Complication

-MATERNAL:

PP is a leading cause of postpartum hemorrhage & is potentially a fatal complication for the mother. (50) Other complication includes: disseminating intravascular coagulation, transfusion reactions, surgical morbidity includes emergency hysterectomy. (54)

-FETAL:

Pregnancies complicated by pp are at a higher risk for adverse perinatal outcome: IUGR, prematurity & perinatal mortality. These finding may result from pathological implantation of the placenta that interferes with normal placental function & leads to abnormal fetal growth (55).

2. Aim of Study

To determine the risk factors for the development of placenta previa at Al Azyzia General Hospital.

3. Patients and Methods

3.1 Study Design & Setting:

This study is a case-control study, conducted at the department of obstetrics &gynecology of Al Azyzia General Hospital during the period of July 2015 to March 2016. The collected cases were women with pp, admitted to the labor room. A total of (197) pregnant ladies were included during the period of the study, (66) ladies included in the study group, were (131) women included in the control group.

3.2 Inclusion criteria:

The study group includes: Pregnant ladies who had pp diagnosed ultrasonographically & confirmed during cesarean delivery. Gestational age was estimated based on the first day of the mother's last menstrual period or ultrasonographically if the date was unknown or uncertain.

3.3 Exclusion Criteria:

The study group excludes: Other cases rather than pp like placental abruption, other pregnant with normally situated placenta.

3.4 Control Group: Women in the control group where selected from those who had presented to the delivery room either for normal or caesarian delivery but without pp.

4. Research Plan

The study enrolls (86) women who had pp, (20) women of them excluded because they unfit the criteria, where the control group (131), with normally situated placenta. Detailed history was taken from all pregnant women included in the study. Social & demographic factors like age, educational level, occupations, smoking, parity, and previous C/S or curettage, any history of ante partum hemorrhage during this pregnancy, birth spacing in months, their antenatal care, if they develop any complication such as hysterectomy.

Age is divided into three groups, those who are less than 20 years, those between 20 &34 years& those equal or more than 35 years. Educational level is recorded into four groups, illiterate, primary, intermediate &secondary, college. Occupation is divided into employed, non- employed. Number of surgical evacuation of uterus is divided into three groups those with one evacuation, those with twice & those with three or more evacuations. Number of previous cesarean delivery is divided into three groups, those with one previous scar, those with two repeated scars & those three &more repeated scars. Number of pregnancies is recorded into five groups those with one pregnancy, those with two pregnancies, those with three pregnancies, those with four pregnancies& those with five or more pregnancies. Birth spacing is recorded in months divided into (3) groups, those less than 12 months, those between 12&35 months &those equal &more than 36 months. Antenatal care is recorded into two groups: attended antenatal care, not attended antenatal care. History of smoking taken from patients either smokers or non-smokers. History of bleeding during this pregnancy, those who had history of bleeding & those did not have any history of bleeding. Also, following the cases & controls till after delivery if they develop complications as placenta accrete or ended with hysterectomy or else till discharge.

5. Statistical Analysis

Analysis of data was carried out using the available statistical package of SPSS-18 (Statistical Packages for Social Sciences- version 18 "PASW" Statistics). Data were presented in simple measures of frequency, percentage, mean, standard deviation, standard error of the mean, and range (minimum-maximum values). While different percentages (qualitative data from different groups and from control group) were tested using Pearson Chi-square test (2-test). Statistical significance was considered whenever the P value was less than 0.05.

6. Results

Placenta previa is a major cause of obstetrical hemorrhage. It is associated with severe maternal complications & adverse perinatal outcome. The majority (75%) of the exposure group had major pp, one of them presented with severe vaginal bleeding; emergency caesarian hysterectomy done for her but the patient develops disseminated intravascular coagulation & died. Table (1), show age distribution in groups, women with age group less than 20 years, between20-34 years &35 years and more with statistically significance.

Table (1): Age distribution in both groups.

Age (years)	Placenta previa		Control No PP		P value
	No	%	No	%	
<20	1	1.5	1	0.8	0.051*
20--34	38	57.6	102	77.8	
=>35	27	40.9	28	21.4	
Mean±SD (Range)	31.95-+6.44(17-44)		30.58-+5.68(18-44)		
*Significant p value.					

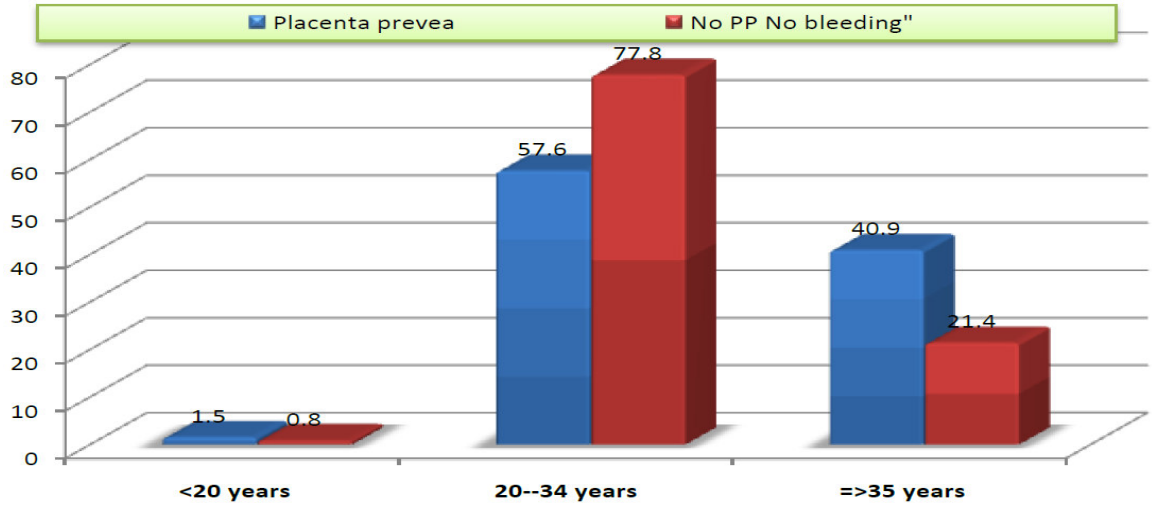

Figure 5. Age distribution in both groups.

Regarding educational level & employment, table (2) show no statistically significant difference between the two groups as shown below. Regarding the evacuation of the uterus or D&C, table (3) show a statistically significant difference between the two groups, p value of less than 0.0001. About history of bleeding during pregnancy, table (4), show that there was a significant difference between the two groups.

Table (2): Educational level& employment in both groups.

Educational level	Placenta previa		Control No PP		P value
	No	%	No	%	
Illiterate	1	1.5	8	6.1	0.720
Primary	25	37.9	56	42.7	
Secondary	35	53.0	60	45.8	
College	5	7.6	7	5.3	
Employment	**No**	**%**	**No**	**%**	**P value**
Job Not employed	61	92.4	118	90.1	0.105
Employee	5	7.6	13	9.9	

P value (0.720), (0.105) respectively were not significant.

Table (3): No. of evacuation of the uterus in both groups.

No of D&C	Placenta previa		Control No PP		P value
	No	%	No	%	
No D&C	11	16.7	81	61.8	0.0001 *
1	23	34.8	29	22.1	
2	15	22.7	15	11.5	
=>3	17	25.8	6	4.6	
Mean±SD (Range)	1.73±1.39		0.63±1.04		
	(0-7)		(0-6)		
*Significant p value.					

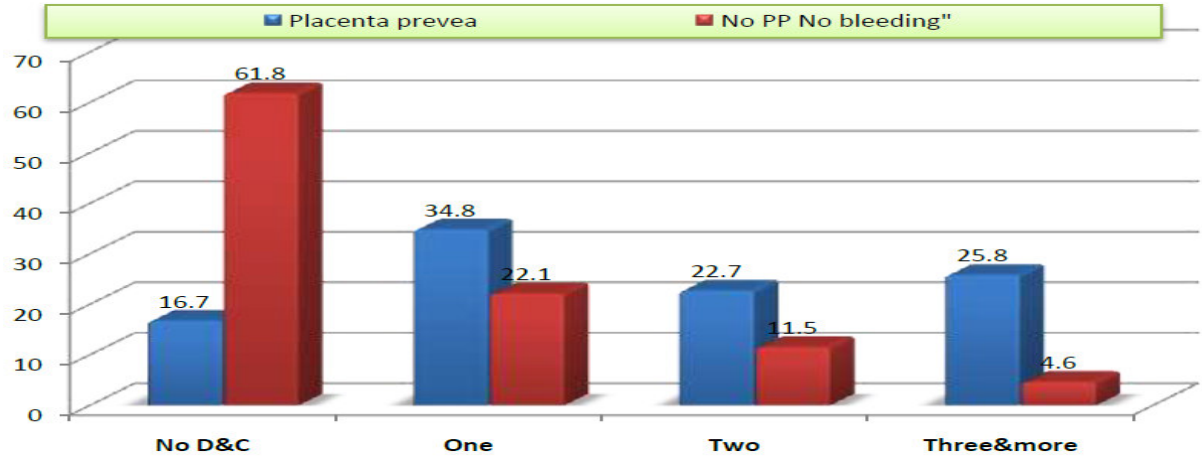

Figure (2): Distribution of Evacuation of the Uterus in Each Group.

Table (4): Bleeding during pregnancy.

Bleeding during pregnancy	Placenta previa		Control No PP		P value
	No	%	No	%	
Yes	41	62.1	12	9.2	
					0.0001*
No	25	37.9	119	90.8	

*Significant p value.

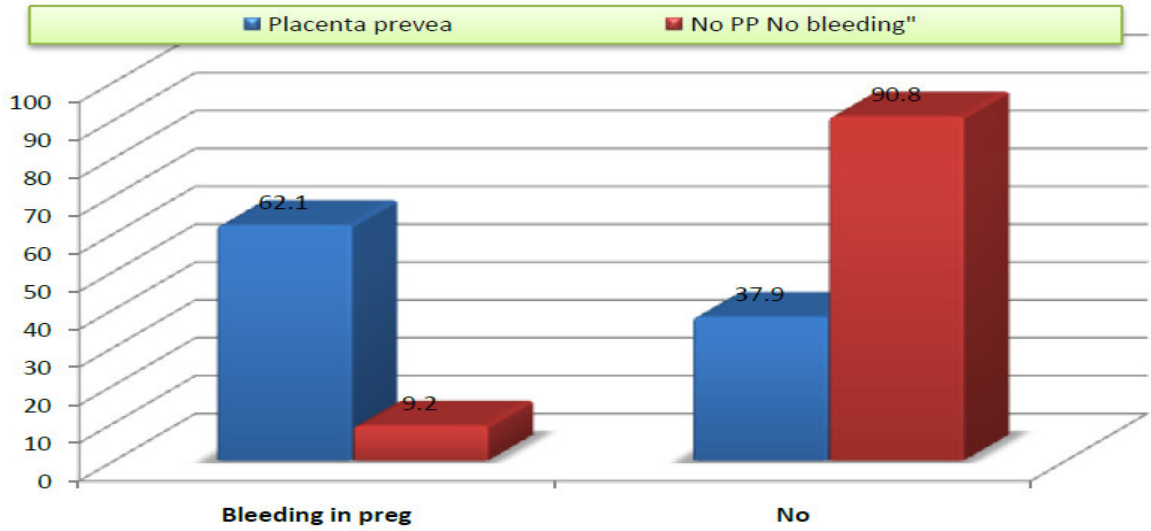

Figure (3): Bleeding during pregnancy in each group.

History of previous delivery by C/S had a significant risk effect on PP.

Table (5): No. of C/S in both groups.

Number of CS	Placenta previa		Control No PP		P value
	No	%	No	%	
No CS	18	27.3	86	65.6	0.0001*
1	13	19.7	33	25.2	
2	9	13.6	5	3.8	
=>3	26	39.4	7	5.4	
Mean±SD (Range)	1.94±1.63 (0-5)		1.34±1.18 (0-4)		
*Significant p value.					

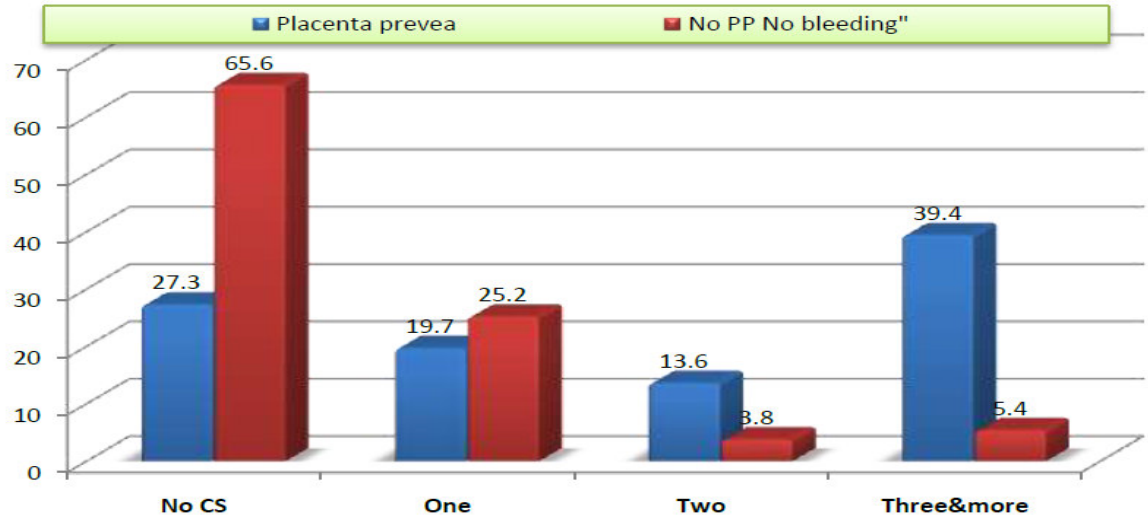

Figure (4): No. of C/S in both groups.

No. of pregnancies in both groups, with significant p value 0.0001.

Table (6): No. of pregnancies in both groups.

No of pregnancies	Placenta previa		Control No PP		P value
	No	%	No	%	
1 Preg	4	6.1	1	.8	0.0001*
2	8	12.1	33	25.2	
3	8	12.1	43	32.8	
4	11	16.7	24	18.3	
=>5	35	53.0	30	22.9	
Mean±SD (Range)	4.92±2.91 (1-16)		3.63±1.69 (1-11)		

*Significant p value.

Inter pregnancy interval presented in months; show no statistical significant with p value 0.55.

Table (7): Spacing in months.

Spacing (months)	Placenta previa		Control No PP		
					P value
	No	%	No	%	
<12	1	1.6	-	-	0.55
12-35	44	69.8	112	86.2	
=>36 months	18	28.6	18	13.8	
Mean±SD (Range)	29.83±14.95		25.58±8.33		
	(12-108)		(14-50)		

P value not significant.

Regarding antenatal care & smoking, there was no statistically significant difference between the two groups as shown in table (8).

Table (8): Antenatal care, smoking.

Antenatal care	Placenta previa		Control No PP		P value
	No	%	No	%	
Yes	34	51.5	57	43.5	0.552
No	32	48.4	74	56.5	
Smoking	**No**	**%**	**No**	**%**	**P value**
Yes	8	12.1	15	11.5	0.988
No	58	87.9	116	88.5	

P value was not significant (0.552), (0.988) respectively.

About complication was more in patient with pp with statistically significance of p value 0.0001.

Table (9): Complications.

Complications	Placenta previa		Control No PP		P value
	No	%	No	%	
Hysterectomy	8	12.1	1	.8	0.0001*
No	58	87.9	130	99.2	

*Significant p value.

7. Discussion

Placenta previa is a major cause of obstetrical hemorrhage. It is associated with severe maternal complication & adverse perinatal outcome, the majority (75%) of the study group had major pp, (8) of them were placenta accrete ended with hysterectomy.

Risk effect of socio-demographic characteristics on severe bleeding in Placenta Previa:

In the current study, we found that age is a risk factor for pp, the majority of the patients (69.7%) were above the age of 30 years**.** Williams MA, et al, (1993) [56] found that age is considered a higher risk factor for pp which is associated with advanced maternal age. Among older women, there may be compromised uteroplacental blood flow. This has been shown by microscopic studies of placentae from older women that have revealed uteroplacental under perfusion & large placental infarcts. Eniola AO, Bako AU, et al. (2002) [5] Also demonstrated the association between increasing maternal age & risk of development of pp. Tai-Ho Hung, et al. (2007) [57] found that the risk of pp increases with advancing maternal age. While Paul Kiondo, et al, (2008) [58] found that the majority (75%) of cases in the study were below the age of 30 years. Age was not found to be risk factor for pp.

In current study that we found 92.4% of the non-employed women develop bleeding; this may be due to that most of women included in the study were housewives. Paul Kiondo, et al, found that patients who were employed were associated with twice the risk of pp with bleeding. [58] Women who are employed spend less time resting; this may predispose them to haemorrhage since bed rest is one way of managing pp. In the current study, we did not found that smoking associated with risk of pp, this may be due to patient sample that were taken. Williams MA, Mittendorf R, et al (1991) [59], found that there is a higher risk of development of pp& cigarette smoking during pregnancy, this has been attributed to the vasoactive properties of nicotine & to the chronic hypoxia associated with carbon monoxide.

Mortensen JT, Thulstrup AM, et al (2001) Thomas M. Brady, et al, (2004) [61], both studies show that maternal smoking is significantly associated with risk of placenta previa. While Cande V. Ananth, et al(1996) [62], Tuzo Vic L, Dielmis J, et al (2003), [63] show that smoking was independent risk factor for placenta previa.

Risk effect of past obstetrical & gynecological history on placenta previa:

This study agrees with the below studies, that the risk of pp increases with previous caesarean deliveries with statistically significant of p value less than 0.0001.Cande V. Ananth, et al(2001) [65] , Faiz A. S. et al(2003) [66] , Darios Getahun, Yinka Oyelese, et al(2006) [13] , Q Yang, SW Wen, et al(2007) [67] , Tai-Ho Hung, Ching-Chang Hsieh, et al(2007) [57] , Paul Kiondo, Julius Wandabwa, et al(2008) All these studies agree that patients who had previous delivery by C/S were associated with an increased risk of pp. Most studies have reported a dose related response pattern of risk factors of pp was found with increasing number of C/S deliveries. [57] previous cesarean delivery include polyp formation, lymphocyte infiltration, capillary dilatation, & infiltration of the endometrial tissue that surround the scar by free red blood cells. [64]

In this study, we found that surgical evacuation of the uterus is a significant risk factor for pp with P value of <0.0001, that agrees with: Cande V. Ananth, et al (2001) [65] , Faiz A. S. Ananth C. V. et al (2003) [66] , Paul Kiondo, Julius Wandabwa, et al. (2008) [58] all those found that history of previous evacuation & or dilatation & curettage of the uterus were associated with risk of pp.

In the current study, we found a short inter pregnancy interval is not a risk factor for pp. In contrast to the result of Wax JR, Seilor A, et al (2000) [42] , Darios Getahun, Yinka Oyelese, et al (2006) [13] , Conde-Aqudelo A, Rosas-Bermudez A, et al (2007) [24] , all reported increased risk of abnormally implanted placentas among pregnancies with short interpregnancy intervals. This is probably explained by the maternal depletion theory; a pregnancy with short interval may deprive the mother from restoring those nutritional elements needed to support a normal pregnancy. [68]

Regarding multiparty, this study agrees with: Faiz A. S. & Ananth C. V. (2003) [66] , Tuzo Vic L, Dielmis J, et al (2003) [57] , Tai-Ho Hung, Ching-Chang, et al(2007) [63] , they show a greater risk of pp with higher parity, this may be due to endometrial scarring at the site of prior placental attachments resulting in lower placental implantation, other possibility may be due to atherosclerotic changes of blood vessels which leads to decreased

uteroplacental blood flow, this in turn leads to large placenta encroaching on the cervical os with repeated pregnancies.

In contrast to Paul Kiondo, Julius Wandabwa, et al (2008), show that parity not found to be risk factors for pp. [58] About bleeding during pregnancy & risk pp, we found that there was a significant risk with p value of 0.0001 this is compatible with the study of Paul Kiondo, Julius Wandabawa, et al (2008) [58] , Lawerence Oppenheirmer, et al (2007) [9], they found that women who develop bleeding during pregnancy are more vulnerable for bleeding later on after adjustment for confounders, this is likely to occur when the lower segment of the uterus begins to form.

About antenatal care, in this study not considered as a risk factor with p value of 0.552, this is may be due to the fact that regular antenatal care require proper ultrasound examination for all women attended the antenatal care which is not done to all & this lead to missing cases, that agrees with Paul Kiondo, Julius Wandabwa, et al (2008) [58] who found that the effect of lack of regular antenatal care not considered as a risk factor for pp[58], In contrast to Nazir Ahmed, Razia Mehboob 2003 [69] who considered the lack of antenatal care was an important risk factor for pp.

Regarding complication as placenta accreta, hysterectomy, our findings consistant with the findings of the following: Ihab M, Usta, et al (2005) [27], Paul Kiondo, Julius Wandabwa, et al (2008).[58]

Conclusion

In the current study, we confirm the role of risk factors in the development of pp in our hospital that's play an important role in the occurrence of pp, we found that increase in the maternal age, evacuation (D&C), previous delivery by C/S, bleeding during pregnancy & multiparty considered important risk factors.

Recommendation

The major objectives of this study were to determine the risk factors for pregnant ladies to develop placenta previa which can be used in the antenatal period to identify mothers at risk, so that we can pick up these women providing them a special card, focusing on the most important risk factors as D&C, repeated C/S, age, multiparty with prompt interventions to deliver the women can be used to reduce the maternal morbidity associated with this condition.

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