

Placenta Praevia and Accreta and its Relationship with Previous Caesarean Section

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ABSTRACT

Objective: A prospective study was undertaken to determine the relationship between placenta Previa, previous caesarian section and placenta praevia accreta.

Setting and duration: A study was conducted in one year from January 2010 to December 2010

Results: Total number of patients who delivered was 4120 out of which 185 patients had previous history of cesarean section (previous 1 or 2 more). Total 42 patients had major degree of placenta praevia (type iii, iv). 28 patients of placenta praevia were those who have no previous caesarean section or unsacred preavuterus and 14 patients had previous caesarean section. Placenta praevia incidence turned out to be 7.56% in cases of previous caesarean section and (0.73%) in cases of unscarred uterus. In patients with placenta praevia and previous caesarean section 9(64.2%) compared with 39(10.7%) were having placenta accreta. There was only one maternal death in placenta praevia with unscarred uterus group.

Key words: Caesarean section, placenta praevia, placenta accreta.

INTRODUCTION

The rate of caesarean section is increasing in most countries, however the long term maternal morbidity and obstetric future of women who have had previous caesarean section need further evaluation.

An attempt has been made to determine the relationship of previous caesarean section with development of placenta praevia and accreta. Bender¹ first suggested that uterine scar could predispose the mother to the development of placenta praevia in subsequent pregnancy. Recent studies by Clark et al² and Rose & Chapman³ have confirmed the significant relationship between placenta praevia and previous caesarean section. Placenta praevia is strongly associated with placenta accreta. The incidence of placenta accreta is as high as 67% in patients with placenta praevia and multiple previous c/s². This association of placenta praevia and accreta with previous caesarean section is a cause of concern, especially in our setup where rate of caesarean sections is increasing because of referral of patient in critical condition and this relationship has further compounded the risk of caesarean hysterectomy with its catastrophic morbidity and mortality.

The sequence of previous caesarean section, placenta praevia, placenta accreta and possible hysterectomy is of great concern in Pakistan, where social preference is for a large family. This phenomenon is further compounded by increasing

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caesarean section rate in Pakistan which is 64.7% in a study done by Haider et al¹⁵.

MATERIAL AND METHOD

A study was conducted between January 2010 to December 2010. Total number of women delivered was 4120, in Nawaz Sharif Social Security Hospital in Gynecology & obstetric department. There were 3835 women who delivered without any previous Cesarean section. while 185 women had previous one or more caesarean section. Out of these 185 women, 105 had previous 1 caesarean section and 80 had previous 2 or more caesarean section.

Inclusion criteria: Patients who fulfilled the following criteria were included in the study

1. Patient with placenta praevia and current delivery by caesarean section.
2. Previous caesarean section and current delivery by caesarean section because of placenta praevia
3. Placenta praevia diagnosed by USG and confirmed at the time of caesarean section intraoperatively.

Exclusion criteria:

1. Cases of previous caesarean section with placenta praevia diagnosed by ultrasonography but intraoperatively placenta was in upper segment
2. Cases of marginal and low lying placenta praevia diagnosed on ultrasonography but delivered vaginally.

Ultrasonography is routinely done for most of the antenatal patients between 16 & 22 weeks of

gestation. Earlier scan would have been performed on patients with history of vaginal bleeding. Patients with placenta praevia were followed by repeat abdominal USG except for those who presented in emergency with heavy per vaginal bleeding giving no time for ultrasonography.

The patients with placenta praevia were admitted to the hospital after 24 weeks of gestation, whenever required because of history of per vaginal bleeding. Maternal and fetal conditions were assessed regularly after admission and on OPD basis. The main intraoperative findings which were noted and filled in proforma were amount of blood loss, intraoperative hypotension (systolic less than 70 mmHg) major artery ligation or hysterectomy during caesarean section or during reexploration. Major complications such as oliguria, injury to bladder and maternal death were analyzed.

Placenta accreta is a general term for morbidly adherent placenta. The diagnosis of placenta accreta is made on the basis of difficulty on removal of placenta from uterine wall, making it possible to remove piecemeal or preventing complete removal and causing severe haemorrhage, even in the hands of experienced obstetricians. The diagnosis, therefore is clinical one, except in case of

hysterectomy, when specimen was sent for histopathology and confirmed the diagnosis of morbidly adherent placenta to the uterine connective tissue or myometrium with the absence of intervening decidua. Three groups of patients with placenta praevia were compared

1. Placenta praevia with no previous C- section.
2. Placenta praevia with prior C-section.
3. Placenta praevia accreta and prior C- section.

RESULTS

During one year period of Jan 2010 to Dec 2010, total 4120 women delivered at NSSH.3835 women with unscarred uterus, while 185 women had previous caesarean section. In a series of 3835 patients 28(0.73%) underwent caesarean section because of placenta praevia but with no history of previous caesarean section. 7.56% (14/185) placenta praevia with previous caesarean section which is higher as compared to placenta praevia and unscarred uterus (table 1). As the number of caesarean section increases, the incidence of Placenta praevia also increases. In my study it is 5.71% in case of previous 1 cesarean section to 10% in case of previous 2 more caesarean section.

Incidence of placenta Praevia and placenta accreta

Deliveries	No	Placenta praevia including Accreta	Placenta Accreta	P - value
Total	4120	42 (1.01%)	12 (28.5%)	0.012
Unscarred uterus	3835	28 (0.73%)	3 (10.7%)	
Previous CS	185	14 (7.56%)	9 (64.2%)	
Previous 1	105	6 (5.71%)	1 (16.6%)	0.124
Previous 2 or more	80	8 (10%)	8 (100%)	

There was a significant association between the outcome and the history of previous section (p -value< 0.005), but the outcome was independent of the number of CS,(p -value > 0.05)

Complications related to placenta praevia (P value 0.003)

Complications	No previous CS	Pervious CS
Haemorrhage	4 (14.28%)	10 (71.42%)
Intraoperative hypotension	2 (7.14%)	6 (42.85%)
hysterectomy	2 (7.14%)	4 (28.57%)
Re-exploration	1 (3.57%)	0 (0%)
Maternal Death	1 (3.57%)	0 (0%)
No complication	18 (64.29%)	3 (21.42%)
Total	28 (100%)	14 (100%)

The risk of placenta accreta also increases with increasing number of caesarean section The range is 10.7%in case of unscarred uterus to 64.24% in case of patient with previous 2 or more cesarean section. Although the incidence of placenta praevia was higher with increased maternal age & parity there was no significant difference in age and parity distribution with in groups of placenta previa, placenta previa with previous c/s and placenta previa accreta. Those having placenta praevia accreta and

previous caesarean section had the lowest mean gestational age ,indicating early onset of ante partum haemorrhage in these cases. Obstetrical hysterectomy was performed in these cases due to severe, uncontrolled post partum haemorrhage. It was performed for 2 cases (2/28--7.14%) of placenta peravia with unscarred uterus and 4 cases (4/9-44.4%) of those having placenta previa with previous CS. There was a significant risk of haemorrhage requiring blood transfusion, intraoperative

hypotension and hysterectomy in a group of placenta previa accreta and prior caesarean section as compared to group of placenta praevia with no prior caesarean section. One maternal death is due to severe post partum haemorrhage in placenta praevia group with unscarred uterus.

DISCUSSION

When placenta is partly or completely implanted in lower uterine segment, it is called placenta praevia⁴. It is one of the main causes of vaginal bleeding in the third trimester. This is not a common pregnancy complications as 1 in every 2500 pregnancies may have placenta praevia⁵ there is strong association with previous caesarean sections^{6,7,8} high parity⁹ advanced maternal age¹⁰ history of previous caesarean section¹¹ and placenta praevia history in previous delivery¹².

The rate of Caesarean section is increasing in most countries, in Pakistan one study by Haider et al shows 64.7%¹⁵. However, long term maternal outcome and obstetric future of women with previous caesarean section need further evaluation^{13,14}.

Placenta praevia is strongly associated with placenta accreta, recent reports suggest a frequency per delivery between 1-2500 and 1-1100^{16,17,18}.

My study showed 7.5% risk of placenta praevia with previous caesarean section. Another study in Ganga Ram Hospital has shown frequency of placenta praevia previous caesarean section to be 21.5%¹⁹. Many studies conducted around the world has shown 2 to 5 fold increase risk of placenta praevia with previous history of caesarean section^{20,21}.

This sequence of previous of caesarean section, placenta praevia, placenta accreta and possible hysterectomy is of great concern in Pakistan, where the social preference is for a large family size. The phenomenon is further compounded by progressive increase in caesarean section rate 9.9% 1985 to 67% in one study in Pakistan. Incidence of placenta praevia accreta with previous caesarean section is 64.24% which is quite high as compared to 10.21% Leung³, 15% by Clark SL²⁵ and 35% by Clark et al² and 16% by Nelson et al²².

The higher incidence of placenta accreta with previous caesarean section in my study is considered to be related to increasing awareness of condition, the diagnostic criteria being clinical and prospective nature of the study made us more conscious about the diagnosis of the condition. Histological documentation of abnormal implantation is desirable, but can not be obtained without

hysterectomy and it was confirmed in all 4 cases of placenta praevia accreta. The risk of placenta praevia accreta with previous caesarean section is well documented and risk increases with increasing number of caesarean section^{24, 25, 26}. My study shows 100% of placenta accreta with 2 or more CS compared with 3(10.7%) in case of unscarred uterus. This is because of complete absence of decidua basalis over the scarred area of uterus. This association of placenta praevia accreta and previous caesarean section is particularly important cause of caesarean hysterectomy, 2(7.19%) in case of placenta praevia with unscarred uterus and 4(28.57%) in case previous caesarean section including placenta praevia accreta.

This is in spite of the fact that obstetric hysterectomy is a procedure which impairs fertility and in Pakistan, trend is towards large family because of social reason and high neonatal mortality rate. The risk of obstetrical hysterectomy is significantly increased because of excessive post partum haemorrhage and presence of placenta accreta²⁷. The overall incidence of hysterectomy for placenta praevia accreta is 50% in Birmingham²⁸, 64% in Kuwait²⁹ and 55% in Italy³⁰.

In my study rate of obstetric hysterectomy is high because of high incidence of placenta accreta with previous caesarean section and high incidence of post partum haemorrhage, low reserve of multiparous patient and less than ideal blood transfusion facilities, low socio economic labour class patients.

Conservative approach leading to disseminated intravascular coagulation is avoided. Conservative approach has high incidence of re-exploration and then obstetrical hysterectomy is always difficult to perform at that stage with poor blood reserve. There is one maternal death of grand multipara because of post partum haemorrhage with uterine atony and intra operative hypotension leading to irreversible shock and death. Placenta accreta is one of the feared complication which increases maternal morbidity and mortality. Five out of 6 maternal deaths in Hibbard's³¹ series of placenta praevia are due to placenta accreta. Sturdee and Rushton³² found the combination of a placenta praevia and previous caesarean section very risky. 37% of patient of placenta accreta had previous caesarean section.

In a series of Clark et al² 82% of patients had placenta praevia accreta with previous caesarean section and they underwent hysterectomy. Another study by Abu-Heija et al reported peri partum hysterectomy in 41.2% of case due to abnormally adherent placentation³³.

CONCLUSION

Placenta pravia is high risk obstetrical condition. Its incidence is increasing because of high parity, increasing maternal age and high incidence of elective and emergency caesarean section. In view of this these women with placenta previa should be managed with appropriate precautions. They need elective caesarean section, an experienced surgical team led by a senior obstetricians, anesthetist, experienced assistants who have the experience to deal with a major surgery including caesarean hysterectomy in collaboration with pathologist/haemologist, blood transfusion, resuscitation and intensive care team. So this obstetrical emergency should be dealt in tertiary care centre which should be equipped with all these facilities.

REFERANCE

- Bender S. placenta praevia and previous caesarean section. *Surg. Gynaecol Obstet* 1954; 98:625-627.
- Clark SL, koonings PP, phelan JP. Placenta praevia / accreta and prior caesarean section. *Obstet Gynaecology* 1985; 66: 89 – 92
- Rose G, chaman MG. Aetiologic factors in placenta praevia – A case controled study. *Br.J obstet gynocol* 1986;93:586 -588
- James D, Bleeding in pregnancy. In Johnson M, chang A, Nelson J editor. *Turnbull obstetrics* 3rd ed. Edinburgh: Harcourt publishers LTD 2001:211- 28
- Frederiksen,M,R. Glassenberg and C Stika 1999 placenta praevia. A 22 year Analysis. *Am J.obstet Gynaecol*,18:1432 – 1437
- Abu – Heija A,F,EL. Jalled and S ziah, 1999,placenta praevia; Effectof age, gravidity ,parity and previous caesarean section. *Gynaecol obstet. Invest*,47;6-8
- Hendricks M.S, YH chow et al 1999 previous caesarean section and abortion as risk factor for developing placenta praevia; *J obstet gynocol Res*,25:137-142
- Gilliam, M,D. Rosenberg and F davis 2002,The likelihood of placenta praevia with greater number of caserean delivery and high parity. *Obstet Gynaecol*,99:976-980
- Zhang J. and D.A. sanitz,1993. Maternal age and placenta praevia: A population based, case control study . *Am. J. Obstet Gynecol* 168; 641-645
- Taipale,P,V- Hiilesmaa and P.ylostalo,1998 Transvaginal USG at 18-23 weeks in predicting placenta praevia at delivery. *Ultra sound Obstet Gynae*, 12:422-425
- Dra-anei A; 2002 perinatal mortality republic of croatia in the year 2001. *Gynaecol. Perinatal*,11:1-13
- Carne JM, vande hof Mc,Dodds L, Armson BA, Liston R,Maternal complication with placenta praevia *Am .J perinatal* 2001,17:101-5.
- Mehboob R, Ahmed N. Fetal out come in major degree Placenta praevia. *Pak J. Med Res.* 2003; 42:3-6.
- Shaheen F, placenta praevia 2year analysis. *Pak J Med.Res.* 2003;42:58 -60
- Haider G, Zehra N,Munir AA, A frequency and indications of caesarean section in tertiary care hospital.*Pak .J ,Med.Sci* 2009; 5: 791-796
- Gielchinsky, Rojansky N, fasouliotis ST,Ezray, placenta accreta – summary of 10 years. A survey of 310 cases of Placenta praevia 2002;23: 210 – 4.
- ACOG Committee on obstetric practice ACOG committee opinion number 266 Jan 2002 placenta accreta, *Obstet Gynaecol* 2002;99:169-70
- Morken NH, Henri ksen H. placenta percreta,two cases and review of the literature. *Eur. J.obstet Gynecol Reprod. Biol.* 2001;100: 112 – 5.
- S. Ayesha, Z fareed , A Samina, Nighat et al; Frequency of placenta praevia with previous C section ,*Pak J Med Sci* 2007;5,42-8.
- Author; Hendricks M (National unit,Hospital Sgp) chow Y H (National University, hospital, Sgp)Title; previous caesarean section and abortion as risk factor for developing placenta praevia. *Journal titles;J Obstet Gynaecol ,journal code y0696 A, ISSN :1341 – 8076, vol.25;no.2 page 137 – 142(1999)*
- Reviewed by the baby centre medi cal advisory board last updated; May 2006
- Nelson TF,Hagberg H. Lyungbald U. Placenta praevia and antepartum haemorrhage after previous cesarean section. *Gynaecol Obstet Invest.* 1989; & 27:88-90
- Leung WC. placenta praevia and previous caesarean section .*Int. J. Gynaecol obstet* 1995 Oct,51, 1: 25.
- Wexler P, Gottes feld KR, Early diagnosis of placenta paevia,*Obstet Gynaecol* 1979;54 :231 – 239
- Fingberg HI, william JW placenta praevia accreta prospective sonographic diagnosis in patients with placenta previa and prior cesarean section. *J ultrasound Med .11 :333 – 343,1992*
- Sing PM,Rodriguesc, Gupta AN,placenta praevia and previous caesarean section *Acta. Obstet, Gynaecol scard* 1981;60:367 – 368.
- Neilson TF, hagberg H. Ijungbald . Placenta previa and antepartum haemorrhage after cesarean section *Gynaeol. obstet. Invest.* 1989(27) 88 – 90.
- Sturdee – Rusten – cesarean and post partum hysterectomy 1968 – 1983 *Br. J Obstet Gynecol* March 1986(93) 270 – 4
- Kasrawi – R et al . Emergency obstetrics hysterectomy in obstetrics practice 5 years review. *Int. J. Gyneol Obstet* 1987 December; 25(6) 437 -40
- Morin A etal Destructive caesarean hysterectomy for obstetric reason and post abortive hysterectomy analysis of 35 cases *minerva – Gynaecol* 1989 Oct;41(10) 497-5
- Hibbard LT,placenta praevia.*Am.J. Obstet Gynecol* 1969; 104: 172 – 176.
- Sturdee DW, Rushton DI 1986 caesarean and post partum hysterectomy 1968 – 1983. *Brit J Obstet Gynecol* 93: 270 – 274.
- Abu – Heija AT, Jallad FF Emergency peripartum hysterectomy at the princess badeea teaching hospital in North Jordan.*J.obstet gynocol Res* 1999 June,25(3); 193 -5.

