



Original Research Article

Volume 4, Issue 6 -2018

DOI: <http://dx.doi.org/10.22192/ijcrms.2018.04.06.014>

## Placenta Previa Accreta -Cesarean hysterectomy by senior surgeons lowers maternal morbidity & mortality

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### Abstract

**Objective-** To assess significant reduction in maternal morbidity & mortality in cases of placenta previa having morbidly adherent placenta, i.e. Placenta previa accreta (PPA) with currently available surgical treatment options especially if done by senior surgeons.

**Methods-** This is a retrospective study of all women with placenta previa having morbidly adherent placenta (accreta) admitted in our unit of the Department of Obstetrics & Gynaecology, Govt. Medical College Amritsar which is a tertiary care centre, over a period of ten years from January 2008 to December 2017. Data was compiled from hospital registers. Collected data was analyzed for maternal morbidity & mortality along with assessment of other related factors.

**Results-** Out of total 10820 births, placenta previa was found in 274 cases ( 2.5 %). A total of 34 cases of placenta previa accreta were identified out of 274 cases of all placenta previa cases during this period giving overall incidence rate of 12.4% in placenta previa cases. In all these PPA cases, cesarean hysterectomy was done by senior faculty. There was only one death in this period (mortality 2.9%).

**Conclusion-** Placenta previa accreta is associated with high morbidity & mortality but if we suspect the gravity of condition antenatally, all cases of PPA especially with previous surgery are managed by cesarean hysterectomy done by senior faculty, then maternal morbidity & mortality is markedly reduced.

**Keywords:** previa, percreta, cesarean hysterectomy, PPA

### Introduction

In labour room & operation theatre, profuse hemorrhage is one of the few life threatening complications of pregnancy causing maternal morbidity & mortality. Placenta previa is the commonest cause. Due to increase in incidence of

cesarean deliveries, chances of placental adhesions over the underlying scar also increase. Placenta may be firmly adherent to uterine wall due to partial or total absence of deciduas basalis or fibrinoid layer. As a result placenta previa accreta (PPA) occurs. PPA is further divided into three types -----

Placenta accreta---- when chorionic villi attach to myometrium, placenta increta where villi invade myometrium & placenta percreta where villi invasion involvement is upto serosa & other abdominal organs like bladder anteriorly & rectum and colon posteriorly etc. Practically all three types are grouped as "placenta accreta". Total placenta accreta is when whole placenta is involved while focal placenta accreta is when one lobule or part of lobule is involved [1]. Use of transvaginal sonography (TVS) allows precise localization of placental edge & cervical os. [2]

PPA in anterior position poses greater risk during surgery in the form of torrential haemorrhage & its complications like increased risk of maternal and infant morbidity & mortality. The incidence of cesarean hysterectomy in such cases is very high.

Association between prior cesarean delivery & placenta previa demonstrates that joint effect of parity & prior cesarean delivery is greater than that of either variable alone. [3]

However proper antenatal diagnosis of this condition helps to plan proper arrangements of blood and component therapy, elective O.T.& senior surgeons for operative delivery. Modern options, like classical cesarean to take out baby & doing hysterectomy without separating placenta results in best outcome. The complications like massive blood transfusions, maternal as well as neonatal morbidity & mortality are markedly reduced.

This study was conducted to emphasize the importance of confirmatory diagnosis of placenta previa accreta antenatally, proper preoperative arrangements & planned surgery by senior surgeons resulting in drastic decrease in maternal morbidity & mortality.

## Material and Methods

A retrospective study was conducted in our unit, Department of Obstetrics and Gynaecology, Govt. Medical College Amritsar over period of 10 years from January 2008 to December 2017 on females having placenta previa and accreta both. Data was collected from medical records of hospital. Data analysis regarding demographic features, previous surgery on uterus, maternal and fetal morbidity & mortality was done. Diagnosis about accretism was either preoperative, that was diagnosed on grayscale ultrasound & confirmed by MRI in some or operative in which clinical diagnosis was made during surgery or post-operative, that is on histopathology done on hysterectomy specimen. Data was analyzed with respect to age, parity, gestation, any previous surgery or abortions, presentation, placental location, blood transfusion, hospital stay & various maternal as well as neonatal complications. In all cases, cesarean hysterectomy was done by senior surgeon.

Neonatal outcome was assessed in the form of maturity, apgar score, NICU admission & neonatal mortality.

## Results

During ten year time period, total births were 10820. Out of which 274 cases (2.53%) were diagnosed with placenta previa. 34 females were detected to have placenta previa accreta making incidence of PPA 0.31 % of total births. Amongst placenta previa cases, 12.4 % cases found to be of placenta accreta also.

Mean age of females was  $28.85 \pm 3.95$  years. The mean parity was  $2.15 \pm 1.10$ .

18 women were <30 years while 16 were > 30 years. Overall previous cesarean section (CS) rate was 73% cases of total cases of placenta accreta.

**Table 1 -Demographic Data**

Features	No. of patients n=34	Percentage
Age <30 years	18	52.9
>30 years	16	47.1
Parity 0	0	0.0
1	12	35.3
2	10	29.4
3 or more	12	35.3
Surgery 0	4	11.8
1 CS	11	32.2
2 CS	8	29.4
3 or more	6	17.4
D&C	1	2.9
Both CS & D&C	4	11.8
Time of diagnosis		
Pre-operative	28	82.4
Intra-operative	3	8.8
Post -delivery	3	8.8

Cases in our study having one, two, three or more CS was 32.2%, 29.4%, & 32.2 % respectively.

1 (2.9 %) case had D & C while 4 cases (11.8%) had both CS and D&C. (Table 1)

Diagnosis of PPA was pre-operative in 28 (82.4%) cases, operative in 3 (8.8%) cases while 3 (8.8%) cases were diagnosed postoperative by HPE report of hysterectomy specimen.(Table 2) 21 cases (61.7%) were having placenta accreta , 3 (8.8%) cases placenta increta while 10 (29.4%) were with placenta percreta. (Table 3)

**Table 2 -Placental localization**

	No of patients n=34	% age
Anterior	30	88.2
Posterior	3	8.8
Central	1	2.9

**Table 3 – Type of accretism**

Type of accretism	No of patients n=34	% age
Placenta accreta	21	82.4
Placenta increta	3	8.8
Placenta percreta	10	29.4

One female presented in shock at 13.5 weeks with h/o attempted MTP along with h/o previous D&C. After resuscitation attempted evacuation of products of conception failed & resulted in profuse bleeding. So emergency hysterectomy was performed.

Another patient presented with 26 weeks, twin pregnancy in state of shock after expulsion of fetuses on the way to hospital .Placenta was partial accreta .But risk of leaving partial placenta in situ was not taken & hysterectomy done.

In both these cases, HPE confirmed placenta accreta.

**Table 4 -Clinical presentation of patients**

Presentation	No of patients n=34	% age
Antepartum haemorrhage	7	20.58
Elective surgery	24	70.56
Retained placenta	3	8.82

In our study, as none of the cases of PPA was primigravida, early decision of hysterectomy was easy one. Shock developed in 4 (11.8%) cases that responded well to immediate blood transfusion.

5 (14.7 %) cases required ICU shifting, out of these 4 were shifted to the ward after 24 hrs while one patient with massive transfusion required inotropic drugs, intubation & developed DIC later on.

Profuse bleeding during surgery was there in 6 cases out of total 8 cases of placenta percreta. 4-6 units of blood ( $4.79 \pm 1.63$  units) were required per case except in one, in which 11 units were infused along with 13 FFP. This case of only mortality was undiagnosed placenta accreta (percreta) admitted with diagnosis of G3P2L2 with previous

2 cesarean sections with placenta previa (posterior) on recent scan produced by patient in emergency labour room. However on surgery, placenta was anterior & percreta. Leashes of vessels were going to base of bladder that required partial excision of bladder. Torrential haemorrhage from bladder base involved by placenta percreta resulted in shock. That patient died on day 4 due to DIC probably as a consequence of massive transfusions.

Otherwise in all other cases of placenta accreta, due to preoperative arrangements of blood and blood components, outcome was good. Hospital stay was not prolonged.

Bladder repair due to bladder injury was done in 6 (17.6%) cases. (All these cases were of placenta percreta) (Table 5)

**Table 5-Maternal complications**

	No of patients n=34	% age
Shock	4	11.8
ICU transfer	5	14.7
Blood transfusions	4-6 ( on average)	
Bladder injury	6	17.6
DIC	1	2.9
Prolonged hospital stay	0	0.0
Death	1	2.9

Mean gestational age was  $33.71 \pm 5.32$  weeks. Neonates with > 37 weeks constituted 15 (44.1%) cases, 28-37 wks-gestation was observed in 15 cases (44.1%) & neonates with gestation <28 week were 4 (11.7%). Mean birth wt was  $2.37 \pm 0.84$  kgs. Out of 31 live neonates, 8 (23.5%) neonates required ICU admission. Neonatal

mortality occurred in 7 (20.6 %) . Prematurity was the main culprit responsible for it. (Table 6) out of total 34 babies, 22 were males & 12 were females (one case was of incomplete abortion but another case was with twin pregnancy. So, total number of neonates remained 34.)

**Table 6 -Neonatal outcome**

	Number (n=34)	% age
<b>Birth weight</b>		
<2.5 kg	10	29.4
➤ 2.5 kg	24	70.4
<b>Gestation</b>		
< 28 weeks	4	11.7
28-37 weeks	15	44.1
➤ 37 weeks	15	44.1
<b>Sex of babies</b>		
Male	22	64.7
Female	12	35.3
NICU admission	8	23.5
Still births	3	8.8
Neonatal mortality	7	20.6

## Discussion

As the incidence of placenta accreta is increasing with time due to increase in cesarean section rate & placenta previa, these two are important risk factors. Early preoperative diagnosis in suspected women is the key to save women's life. [4]

Prior uterine surgery, curettage in addition to cesarean section have all been associated with abnormal placentation but more ominously placenta previa has been associated with high rate of placenta accreta.[5] Incidence of abnormally adherent placenta (accreta & percreta) has increased 10 fold in the past years and it is due to deficiency of decidua basalis at scar site.[6]

In our study placenta accreta was observed in 21 (82.4% )cases, placenta increta in 3 (8.8%) cases & placenta percreta in 10 (29.4% ) while Jwaih et al found this incidence 75-78% , 17 % & 5-7% respectively .[7] However according to Miller DA et al, placenta accreta occurs in approx. 1 in 2500 deliveries.[8] Among placenta previa , incidence of PPA is nearly 10 % . In this high risk group, advanced maternal age and previous cesarean section are independent risk factors. In our study incidence of PPA is 12.4% which is almost comparable. Another study shows higher figures 28.39% [9]

Sonographic determination of placental position where its location beneath uterine incision is very important to predict the maternal outcome in placenta previa patients & in such cases, close attention should be paid for massive haemorrhage.[10] For ultrasound for placental localization, the positive predictive value reported is 98% whereas negative predictive value as 100 % [11]

If diagnosis is not certain before delivery, all patients with previous cesarean section should be managed in properly equipped centres, paramedicals should consider patient transfer to a tertiary care centre. Preoperative counseling should include discussion of potential need for hysterectomy, risk of profuse haemorrhage, possible maternal death.

In our study, 88.2 % women had anterior placenta, 8.8 % had posterior & 2.9 % had central placenta. Anterior placenta previa is more common in patients with two or more prior cesarean sections as compared to no prior cesarean & is more dangerous than posterior previa causing excessive blood loss, massive transfusions placenta accreta & hysterectomy.[10]

Incidence of placenta accreta per lac women giving birth was 314.2 /100000 in our study while in Australia it was 38.8/100000.[12] Higher rate in our study may be due to reason that our institute being the tertiary care centre. Results regarding sex ratio in our patients show more males born to placenta accreta patients as compared to females but study by James W H showed more female fetuses as risk factor. [13] They reported more male babies in placenta previa & abruptio placenta while more female babies in placenta accreta & extrauterine pregnancies. They held different sex hormones responsible for placental pathology.

To enhance patient safety, it is important that delivery be performed in O.T. by expert team of obstetrician, urologist & surgeon. An obstetrical surgeon or gynaecological oncologist as well as urological and interventional radiological consultants should all be available. [14] In a report from U.K., attempts for partial or total placental removal prior to hysterectomy were associated with twice as much as blood loss .[15]. So with obvious percreta or increta, hysterectomy is usually the best course, and the placenta is left in situ. This is also recommended by The Royal College of Obstetricians. When woman is already bleeding, conservative management of placenta accreta is unlikely to be successful and risks wasting valuable time.(16)

However, Shabana A. has tried new stepwise surgical approach in placenta percreta along with uterine repair during cesarean section in 71 patients & claimed uterus conservation successfully in 91.5 % women.[17]

Sentilhes L et al also considered conservative treatment in young women who wanted future pregnancy & agreed to close follow-up monitoring but otherwise they agreed that cesarean hysterectomy was the reference standard treatment of placenta accreta.[18]

Overall mortality in placenta accreta quoted in literature is 7-10 % while a critical review done in 20 cases of placenta accreta in 2012, mortality was found to be 30% .[4] which is quite high. That might be due to the fact that their cases were dealt as emergency without having scans and proper arrangements & diagnosis of accreta was unexpected. Miller DA et al reported maternal mortality around 9.5%.[8] In our study most of cases were diagnosed preoperatively, dealt with proper arrangements of blood units and components & done by senior surgeons even in odd hours. That really reduced the mortality to 2.9 % only. Prenatal diagnosis and adequate pre-delivery planning, particularly in high risk population, may be indicated for the reduction of adverse outcomes in placenta accreta.[19] Alchalabi H et al recommends that all placenta previa and previous cesarean are assumed to be morbidly adherent, and should be managed in properly equipped centres.[9] Maternal mortality rate amongst morbidly adherent placenta in this study is 4.3 % which is slightly higher than ours. However Walker MG et al reported zero mortality in 33 patients of adherent placenta supporting the fact that increasing use of multidisciplinary team was associated with a significant reduction of morbidity & mortality.[20]

Pri-Paz S. et al also supported this by reporting a case of cesarean hysterectomy having complication of placenta percreta who required emergency thoracotomy.[21]

Using national data on Medicare beneficiaries in the US, study found that patients treated by older surgeons had lower mortality than patients treated by younger surgeons.[22]

**Conclusion:** Confirmatory preoperative diagnosis, meticulous arrangements, decision of cesarean hysterectomy, surgery performed by senior faculty & collective efforts by inter-departmental involvement, definitively lowers the mortality rate drastically in cases of placenta previa accreta cases.



**Source of funding:** Nil

**Conflict of interest:** None declared

## References

1. Obstetrical hemorrhage. In: Cunningham FJ, Leveno KJ, Bloom SL, Spong CY, Dashe JS, Hoffman BL, Casey BM, Sheffield JS, Williams Obstetrics. 24<sup>th</sup> edition. New York: McGraw-Hill; 2014:780-828.
2. Silver RM. Abnormal placentation, placenta previa, vasa previa & placenta accreta; *Obstet & gynaecol*, 2015; 126 (3): 654-68.
3. Gilliam M, Rosenberg D, Davis F. The likelihood of placenta previa with greater number of cesarean deliveries & higher parity; *Obstet & Gynaecol* 2002; 99 (6): 976-80.
4. Aggarwal R, Suneja A, Vaid N B, Yadav P, Sharma A, Mishra K. Morbidly Adherent Placenta: A Critical Review. *The J of Obst & Gynaec of India* 2012; 62 (1):77-81
5. Wu S, Kocherginsky M, Hibbard J U. Abnormal placentation; twenty- year analysis. *Am J Obstet Gynecol*. 2005 May; 192(5): 1458-61.
6. Heller DS. Placenta accreta & percreta. *Surg Pathol Clin*. 2013; 6(1):181-97
7. Jwarah E, Wilkin D J. Conservative management of placenta accreta. *J Obstet Gynecol*. 2006 May; 26 (4) : 378-9.
8. Miller DA, Chollet JA, Goodwin TM. Clinical risk factors for placenta praevia-placenta accreta. *Am J Obstet Gynecol*. 1997 Jul; 177 (1): 210-4.
9. Alchalabi H, Lataifeh I, Obeidar B, et al. morbidly adherent placenta previa in current practice: prediction and maternal morbidity in a series of women who underwent hysterectomy. *J Matern Fetal Neonatal Med*. 2014; 27(17):1734-7.
10. Jang DG, We JS, Shin JU, Choi YJ, Ko HS, Park IY, Shin JC. Maternal outcome according to placental position in placenta previa. *International J of Med Science*. 2011; 8 (5) : 439-44.
11. Rani PR, Haritha PH, Gowri R; Comparative study of transperineal and transabdominal sonography in the diagnosis of placenta previa. *J Obstet Gynaecol Res*. 2007 Apr; 33 (2): 134-7.
12. Grace Tan SE, Jobling TW, Wallace EM, McNeilage LJ, Manolitsas T, Hodges RJ. Surgical management of placenta accreta: a 10 year experience. *Acta Obstet Gynecol Scand* 2013; 92: 445-50
13. James W.H. Sex ratios of offspring and causes of placental pathology. *Human Reproduction*, 1995 June; 10(6):1403-6
14. Eller AG, Bennett MA, Sharshiner M, Masheter C, Soisson AP, Dodson M, Silver RM. Maternal morbidity in case of placenta accreta managed by multidisciplinary care team compared with standard obstetric care. *Obstet Gynecol*. 2011 Feb; 117(2 Pt 1):331-7.
15. Fitzpatrick KE, Sellers S, Spark P, Kurinkzuk JJ, Brocklehurst P, Knight M. The management & outcome of placenta accreta, increta & percreta in the U.K.; a population-based descriptive study. *BJOG* 2014 Jan; 121(1):62-70; Discussion 70-1.
16. Royal College of Obstetricians & Gynaecologists (RCOG). Placenta previa, placenta accreta & Vasa previa: Diagnosis and management (Green-top Guideline No 27). London: RCOG, 2011.p.26.
17. Shabana A, Fawzi M, Refaie W. Conservative management of placenta percreta: a stepwise approach. *Arch Gynecol Obstet*. 2015; 291(5):993-8.
18. Sentilhes L, Goffiner F, Kayem G. Management of placenta accreta. *Acta Obstet Gynecol Scand*. 2013 July; 92(10):1125-34.
19. Balayla J and Bondarenko HD. Placenta accreta and risk of adverse maternal and neonatal outcomes. DOI 10.1515/jpm-2012-0219- J. Perinat. Med. 2013 Mar; 41(2):141-9.
20. Walker MG, Allent L, Windrim RC, Kuchura J, Pollard L, Keating S et al : Multidisciplinary management of invasive placenta previa. *J Obstet Gynecol Can* . May 2013; 35(5):417-25.

21. Pri-Paz S, Devine PC, Miller RS, Flood PD, Laifer- Narin SL, Wright JD. Cesarean hysterectomy requiring emergency thoracotomy: a case report of a complication of placenta previa requiring multidisciplinary effort. J Reprod Med.2012 Jan-Feb; 57(1-2):58-60.
22. Tsugawa Tusuke, Jena Anupam B, Orav E John, Blumenthal Daniel M, Tsai Thomas C, Mehtsan Winta T, Ruth L Newhouse et al. Age and sex of surgeons and mortality of older surgical patients: observational study. BMJ 2018; 361:k 1343.

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How to cite this article:

Preetkamal Bedi, Davinderpal, Nisha Bhagat, NS Neki. (2018). Placenta Previa Accreta -Cesarean hysterectomy by senior surgeons lowers maternal morbidity & mortality. Int. J. Curr. Res. Med. Sci. 4(6): 88--95.  
DOI: <http://dx.doi.org/10.22192/ijcrms.2018.04.06.014>