

# A small change in practice leading to significant reduction in per operative blood loss and maternal death

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## Abstract

**Aims and objective:** Placenta previaaccreta is becoming an increasingly common complication of pregnancy because of increasing rate of caesarean section combining with increasing maternal age. Conventionally we used to practice manual separation of placenta if it fails to separate spontaneously with oxytocics. This had led to torrential per-operative haemorrhage obscuring the field of operation and giving much less time to do hysterectomy / ligation of vessels. This technique was associated with very high maternal mortality and morbidity. Our aim was to save the life of the mother in this condition. **Material and method:** We have analyzed the cause of death of placenta previa cases, case sheet of caesarean hysterectomy (due to placenta previa) cases and case sheet of all placenta previa cases managed in ICU/HDU. It had been found out that per-operative torrential haemorrhage following manual separation of placenta was the reason behind. So we changed our strategy and caesarean hysterectomy was done without manually separating placenta and analyzed case records. Then we compared it statistically with previous technique. **Conclusion:** Results of this comparative retrospective analysis showed significant reduction in maternal mortality and morbidity by newer technique.

**Key Word:** Placenta previaaccreta, post C.S. placenta previa, caesarean hysterectomy.

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## INTRODUCTION

Number of adherent placenta previa cases is gradually increasing over the past fifty years. Its incidence is approximately 1-12.2 per 1000 pregnancies with highest prevalence among Asian women.<sup>1</sup> Major degree placenta previa is a life threatening complication of pregnancy because it is frequently associated with antepartum haemorrhage(APH),post partumhaemorrhage (PPH) and per-operative haemorrhage. It is associated with high perinatal mortality and morbidity due to low birth weight, preterm delivery and accidental injury of vasa previa.

Maternal mortality and morbidity are also high due to antepartum and postpartum haemorrhage, DIC, multi-organ failure, morbid adherent placenta and infection on retained bits of tissues in the lower segment. Now-a-days it has become the leading cause of caesarean hysterectomy. Incidence of placenta accreta increases with the number of previous caesarean section. Risk of placenta accrete is 2% among women with placenta previa. It is 39-60% with previous two or more prior caesarean section. Risk is 88% of the women having concomitant placenta previa and prior caesarean section.<sup>2,3</sup> Other risk factors are submucousmyoma, Asherman's syndrome, advanced maternal age, uterine scar of prior myomectomy or hysterotomy, grand multiparity, smoking, chronic hypertension. Placenta previaaccreta is becoming an increasingly common complication of pregnancy because of increasing rate of caesarean section combining with increasing maternal age. Conventionally we used to practice manual separation of placenta if it fails to separate spontaneously with oxytocics. This had led to torrential per-operative haemorrhage obscuring the field of operation and giving much less time to do hysterectomy/ligation of vessels.

This technique was associated with very high maternal mortality and morbidity. Now-a-days we stopped practicing manual separation in case of major degree adherent placenta previa; instead we are waiting for 10 to 15 minutes with intravenous oxytocics injection for spontaneous separation of placenta and go for total hysterectomy with placenta in situ.

## MATERIAL AND METHOD

We have analyzed the cause of death of placenta previa cases, case sheet of caesarean hysterectomy (due to placenta previa) cases and case sheet of all placenta previa cases managed in ICU/HDU. It has been found out that most of the deaths were due to per-operative torrential haemorrhage leading to irreversible shock. Then we discussed it with the obstetric surgeons who performed these surgeries. It has been found out that in most of these cases torrential hemorrhage starts with manual separation of placenta or removal of adherent placenta in pieces. Lower uterine segment responds poorly with oxytocics and sinuses remain open and massive haemorrhage starts obscuring the field of operation. Performing total hysterectomy and/or ligation of vessels are very difficult in this situation. Patient goes into irreversible shock. They need more than 10 unit blood and blood products transfusion and ICU admission. To avoid this life threatening condition we changed our strategy. Classical caesarean section is done for these cases and we stopped practicing manual separation of adherent placenta in cases of major degree placenta previa. We wait for 10-15 minutes following delivery of baby giving 10 unit oxytocin and 0.2 mg methergin intravenous, with continuous infusion of upto 40 unit oxytocin in 500ml infusion bottle. If it is not separated we start doing total hysterectomy with prior consent (before starting caesarean section) as a life saving measure.

**Inclusion criteria:** Adherent type of Placenta previa admitted under our care and managed by operative intervention.

**Exclusion criteria:** Placenta previa not adherent to uterus, adherent placenta delivered vaginally. All these patients were admitted with antepartum haemorrhage (APH) without prior diagnosis of adherent placenta. Diagnosis was made at operation table and confirmed by histology.

## RESULT

It is a comparative analysis between a conventional method with newer technique of managing adherent placenta previa cases. We managed 20 such cases out of this 12 cases were managed by conventional method. While analysing the case records of these cases we found out that there was a very high maternal mortality rate, requirement for massive blood transfusion was 100% and

operative time is also very high (table-1). To avoid these we brought some changes in our technique and analyzed there records (table-2). Finally all these variables were coded and entered into MS Excel. The variables were expressed in proportions. Chi square test was done to find out the association of the difference in between two modes of management with related variables. STAT CALC software was used for the analysis. (P less than 0.05 was considered significant) (table-3).

**Table 1:** Profile of patients under previous approach (N=12)

Variables	Frequency (%)
<b>Age(years)</b>	
<30	9 (75.00)
>30	3 (25.00)
<b>Previous history of Caesarean section</b>	
No	2(16.66)
Yes	10(83.33)
<b>Gravida</b>	
Multi	11(91.66)
Primi	1(8.33)
<b>Per and post operative blood transfusion&gt;08 units</b>	
Yes	12 (100.0)
<b>caesarean hysterectomy done</b>	
Yes	8 (66.66)
No	4(33.33)
<b>Urinary tract injury</b>	
Yes	3 (25.00)
No	9 (75.00)
<b>Operative time &lt; 2hour</b>	
Yes	2 (16.66)
No	10 (83.33)
<b>Maternal death</b>	
Yes	7 (58.33)
No	5 (41.66)

**Table 2:** Profile of patients under new approach (N=8)

Variables	Frequency (%)
<b>Age(years)</b>	
<30	5 (62.50)
>30	3 (37.50)
<b>Gravida</b>	
Multi	8 (100.0)
<b>Previous history of Caesarean section</b>	
Yes	8 (100.0)
<b>Per and post-operative blood transfusion&gt;08units</b>	
Yes	3 (37.50)
No	5 (62.50)
<b>Caesarean hysterectomy done</b>	
Yes	8 (100.0)
<b>Urinary tract injury</b>	
Yes	2 (25.00)
No	6 (75.00)
<b>Operative time &lt; 2hour</b>	
Yes	6 (75.00)
No	2 (25.00)
<b>Maternal death</b>	
Yes	0 (0.0)
No	8 (100.0)

**Table 3:** Comparative analysis between two approaches

Variables	Previous approach (N=12), Frequency	New approach(N=8), Frequency	Statistics
<b>Age(years)</b>			
<30	9	5	
>30	3	3	OR=1.80, CI(0.18-19.10), $\chi^2=.01$ ,P=.642
<b>Previous history of caesarean section</b>			
No	2	0	
Yes	10	8	OR=1.80, CI(1.19 -2.72), $\chi^2=.02$ ,P=.494
<b>Gravida</b>			
Multi	11	8	
Primi	1	0	OR=.00, CI(.00 – 28.99), $\chi^2=.04$ ,P=1.000
<b>Per and post-operative blood transfusion &gt;8unit</b>			
Yes	12	3	
No	0	5	$\chi^2=6.94$ ,P=.003
<b>Caesarean hysterectomy done</b>			
Yes	8	8	
No	4	0	OR=0.00, CI(0.00 -2.23), $\chi^2=1.58$ ,P=.116
<b>Urinary tract injury</b>			
Yes	3	2	
No	9	6	OR=1.00, CI(.09 -12.39), $\chi^2=.28$ ,P=1.000
<b>Operative time &lt; 2hour</b>			
Yes	2	6	
No	10	2	OR=.07, CI(.00-.85), $\chi^2=4.59$ ,P=.019
<b>Maternal death</b>			
Yes	7	0	
No	5	8	OR=2.60, CI(1.31 -5.17), $\chi^2=4.84$ ,P=.014

As per statistical analysis this comparative analysis is showing that newer technique is better in respect to maternal death, operative time and need for massive blood transfusion. The conventional technique was associated with high maternal mortality and morbidity. And the cause was haemorrhagic shock, cardiac arrest, DIC, pulmonary oedema etc. In an attempt to reduce per-operative haemorrhage we stopped the practice of manual removal of placenta. We did caesarean hysterectomy with placenta in uterus. In addition we did bilateral ligation of internal iliac vessels. And the analysis is showing significant reduction of maternal mortality, morbidity and also operating time.

## DISCUSSION

Major degree adherent type placenta previa in post caesarean pregnancy is a life threatening obstetric condition. This particular type of cases is associated with high maternal mortality and morbidity. It is better to manage these cases as very high risk cases. They can be diagnosed early in mid-trimester and should be kept under close surveillance. They are to be admitted around 34 weeks of gestational age and be prepared for elective caesarean section as soon as lung maturity is attained by the baby. Prior consent for caesarean hysterectomy is to be taken. In our hospital these patients are most of the time getting admitted in emergency as referred case

(sometimes unbooked case) from other hospitals with antepartum haemorrhage without prior diagnosis as adherent placenta. Therefore, prior planning and multidisciplinary approach is a quite impossible in this scenario. As per ACOG guideline these cases are to be managed by multidisciplinary team consisting of maternal fetal medicine specialist, obstetric surgeon, general surgeon, gynaecologic oncologist, anaesthesiologist, neonatologist, interventional radiologist and urologist.<sup>4</sup> Grayscale ultrasonography is sufficient to diagnose placenta previa accretas cases with a sensitivity of 77-87% and specificity of 96-98%. TVS is safe and allows more complete examination of lower segment. Features are irregular shaped placental lacunae (at 15-20 wks), loss of retroplacental clear space and thinning of myometrium.<sup>5,6,7</sup>. Management of placenta previa cases with hysterectomy is associated with high morbidity even in case they are managed in quaternary perinatal referral center<sup>8</sup>. There are few articles on management of these cases conservatively keeping placenta in uterus followed by methotrexate injection, antibiotics and later curettage, although results were not satisfactory in terms of maternal mortality and morbidity.<sup>9,10</sup>. There are few exceptional case reports of success in preserving uterus.<sup>11,12</sup> Also there are reports of managing these cases with the help of intervention radiology by arterial embolization technique.<sup>13</sup>. Conservative approach of managing these cases need to be studied among large number of cases as

a multi-centric trial. These cases need to be admitted and managed with prior planning in a center with ICU, NICU, facility for adequate blood and product transfusion and multi-disciplinary team having expertise in managing placenta previaaccreta cases. But in our cases most of the patients had been admitted in obstetric emergency with acute haemorrhage.<sup>14,15, 16</sup> Majority of them did not have proper antenatal checkup because of poor socioeconomic background. Managing these cases in emergency is really challenging. Conventional technique of caesarean section and manual removal of adherent placenta was associated with increasing mortality. After analyzing the case records of all these cases we took prior consent of caesarean hysterectomy, baby was delivered by classical caesarean section we would wait for 15-20 minutes for spontaneous separation of placenta with oxytocic injections if it appears to be adherent the decision of doing hysterectomy without attempting manual removal of placenta was taken. This simple technique has helped us to reduce maternal mortality and morbidity. To save the life of the mother from severe uncontrolled haemorrhage following manual removal of placenta prior decision was taken for caesarean hysterectomy. Attempt to keep the uterus for future fertility was endangering the life of the mother with placenta previaaccreta.

## CONCLUSION

placenta previaaccreta is a serious obstetric problem. Its incidence is gradually increasing in last 20 years because of increasing rate of caesarean section and maternal age. It is associated with high maternal and perinatal mortality and morbidity due to massive antepartum haemorrhage, DIC, multi-organ failure, septicemia, preterm delivery. These cases are to be managed with prior planning by multi-disciplinary approach. When we diagnose these cases for the first time after delivery of baby in emergency caesarean section prompt decision should be taken for caesarean hysterectomy without manual separation of placenta because it reduces maternal mortality and morbidity significantly.

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