

**Case report****Morbidly Adherent Placenta at Extreme Prematurity: Can Major Haemorrhage and Hysterectomy be Prevented?**

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**Abstract**

Morbidly adherent placenta with spontaneous rupture of membrane at extreme prematurity poses poor pregnancy outcome. Various issues on different management modalities still remain perplexed and individual consideration is vital. Two cases of morbidly adherent placenta with symptomatic per vaginal bleeding and spontaneous rupture of membrane at severe prematurity were reviewed and discussed. We found that, active intervention by termination of pregnancy and methotrexate therapy at early gestation can prevent the need of hysterectomy following major obstetrics haemorrhage.

**Keywords:** Hysterectomy, methotrexate, morbidly adherent placenta, placenta accreta, termination, pregnancy.

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**Introduction**

Morbidly adherent placenta namely placenta accreta is a nightmare to any obstetricians. Although the incidence of placenta accreta varies with the average incidence of approximately 1 in 7000 (1), it is associated with major obstetric hemorrhage requiring massive transfusion, Caesarean hysterectomy and to the extreme of maternal mortality. Ureteric and bladder injury may complicate, especially in torrential bleeding, where life saving procedure is the top precedence (2).

Risk of placenta accreta increases with the number of previous Caesarean scars, being approximately 25% with one scar, and up to 67% with four or more prior Caesarean section scar

(3). Myomectomy, uterine curettage and infection are possible risk factors other than placenta praevia itself, contributing to 10% of all cases. It is more likely if the placenta praevia is located anteriorly with previous Caesarean scars. It poses a major challenge in the antenatal diagnosis, especially when the investigations are inconclusive and largely depends on the clinical suspicion. Ultrasonography and magnetic resonance imaging (MRI) would be the adjunct tools in highly suspected morbidly adherence placenta (4). Loss of sonolucency at the placental bed with poor demarcation of myometrium overlying the placenta and presence of irregular lacunae are the suggestive features. Doppler ultrasonography reveals increased vascularity of the bladder and uterine interface (5,6,7).

Uterine conservation by leaving the placenta in-situ, curettage and/or oversewing of the placenta bed has shown to be effective to retain fertility(7). Nevertheless, leaving placenta in-situ is also associated with the risk of infection and overwhelming sepsis, bleeding requiring blood transfusion and to the extent of relaparotomy for sequential hysterectomy. Stringent monitoring and follow up is required and largely requires patients' compliance and acceptability. To date, there is no general consensus on the guidelines for monitoring such cases.

Could this nightmare be prevented or at least be minimised? Termination of pregnancy solely based on clinical suspicions of morbidly adherence placenta is definitely not ethically acceptable. Whether this could be considered on the grounds of prevention of maternal morbidity and mortality is another contentious issue since there is a scarcity of reported cases.

### Case report 1

A 28-year-old, in her second pregnancy at 21 weeks period of amenorrhoea, with one previous Caesarean section presented with per vaginal bleeding. The pregnancy was dated at 12 weeks gestation, progressed well till 16 weeks when she had recurrent per vaginal bleeding. She first presented with minimal per vaginal bleeding and was diagnosed as threatened miscarriage and was managed conservatively. Unfortunately, she was readmitted three days later for another episode of bleeding, requiring one unit of packed cell transfusion as her haemoglobin dropped to 8 g/dL with symptomatic anaemia. At 17 weeks gestation, she had another episode of excessive per vaginal bleeding again with haemoglobin of 6.2 g/dL, requiring four units of blood transfusion. An obstetric scan revealed fetal parameters corresponding to her dates with low lying placenta. Even with this major consecutive haemorrhage, no definitive plan had been discussed.

Following this she remained asymptomatic for one month, until at 21 weeks pregnancy where at that point of time, she presented with vaginal spotting and leaking liquor. She was not pale,

haemodynamically stable and afebrile. No evidence of abruptio placenta, and uterus corresponded to the dates. Scan revealed a viable singleton fetus in breech presentation at parameters of 21 to 22 weeks pregnancy with oligohydramnion. Placenta was low lying, covering the cervix. Lacunae signs were present, with loss of delineation between placenta tissue and myometrium. The Doppler ultrasound was suggestive of morbidly adherent placenta.

The couple was informed on the findings and risk of massive haemorrhage, requiring hysterectomy. Contemplating termination of pregnancy in view of extreme preterm prelabour rupture of membrane with recurrent bleeding from morbidly adherent placenta was the issue at that point.

After two days in the ward, she developed another episode of sudden massive per vaginal bleeding associated with contractions. She was in a state of hypovolemic shock and was resuscitated with colloid and crystalloid before taken to the operation theatre for hysterotomy with possible hysterectomy.

At laparotomy, the lower segment was not well formed with engorged vessels at the bladder base and uterine angles. Hysterotomy was performed delivering a 450 gm female fetus, with no respiratory effort, who expired after one hour of life. As partial separation of the placenta occurred, with the thought of conserving the uterus in mind, a short attempt of removal of the placenta was performed digitally but it failed. Some placental tissues bulk was extruded into the internal os of cervix posterior laterally and the placental bed started to bleed profusely.

Due to a significant drop in blood pressure with massive bleeding, complicated with disseminated intravascular coagulopathy, conservative approach was not permitted in this patient. Therefore, a subtotal hysterectomy was performed as the patient was critically haemodynamically unstable. Intraoperatively, she lost six liters of blood which was corrected with seven units of blood, two units of platelet, four units of fresh frozen plasma, and six units of cryoprecipitate. Another course of DIVC regime

was given immediately postoperative. She recovered well after being observed in the intensive care unit for 36 hours. Histology report confirmed placenta accreta.

### Case report 2

A 34-year-old, in her second pregnancy with one previous dilatation and curettage, was then at 22 weeks gestation following spontaneous conception after three years history of unexplained subfertility, presented with per vaginal bleeding. This pregnancy dated at six weeks and her pregnancy progressed well until the day of admission. Following that, she had the spontaneous leaking liquor.

Upon assessment, she was not pale with stable haemodynamic status. The uterus was smaller than dates with evidence of oligohydramnios and rupture of membranes was confirmed. Obstetric ultrasound confirmed anhydramnion, low lying placenta with evidence suggesting placenta accreta such as prominent lacunae sign and loss of plane between placental tissue and the myometrium.

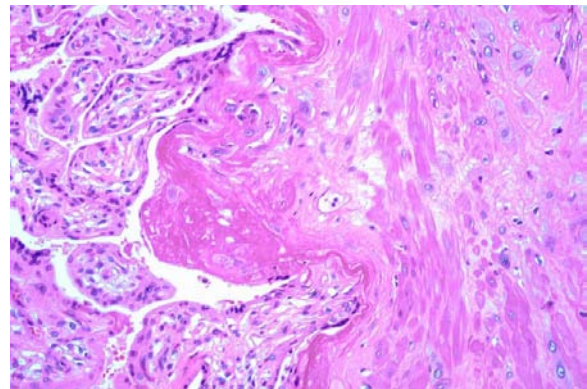
As the prognosis was poor, with possible lungs hypoplasia, and limbs deformity, she was given the option of termination of pregnancy, which she was keen on. Given the history of low lying placenta with suspected accreta, the best mode of termination of pregnancy was a crucial issue. The risk of procedure failure, bleeding, infection, needing surgical intervention, namely hysterectomy were highlighted during discussion.

Fetocide with intracardiac potassium chloride injection followed by systemic intramuscular methotrexate was administered for one course. Two days following the procedure, she passed out placenta tissues and 300gm of fetus. She required curettage for the retained tissue but the completeness was not achieved due to the adherence and was left in-situ. She was administered antibiotics and recovered well, and the serial serum beta hCG dropped to pre-pregnancy level four weeks later.

One year later, the couple wanted another pregnancy. As a result of successful preservation of the uterus from hysterectomy due to placenta accreta, the woman had a normal pregnancy currently at 28 weeks with no placenta praevia.



**Fig 1:** Macroscopic cross section of the uterus with gross extrusion of placental tissues into the myometrium and extending into the endocervical area.



**Fig 2:** Sections show placental villi adhering to the underlying myometrium without an intervening layer of deciduas. The chorionic villi are also adhering to the cervical wall.

### Discussion

As expected, morbidly adherence placenta is associated with major obstetric haemorrhage and increased maternal morbidity. Two illustrated cases revealed similar presentation with suspected morbidly adherent placenta at extreme prematurity with different approaches of management. Active intervention allays the possibility of hysterectomy, where fertility is of controversial concern.

In the first case, the suspicion of placenta accreta arose when ultrasound scan revealed lacunae signs and loss of demarcation between placental tissue and myometrium at 21 weeks pregnancy when the visualization of the signs were more likely. Dilemma on the diagnostic capability is still a major issue especially at extremely early gestation because of the presence of other risk factors and stratification of the definite risk. A previous study reported cases of three previous Caesarean sections that had incomplete miscarriage at 10 weeks gestations, with heavy bleeding which was not responsive to bimanual compression, curettage and oxytocin infusion, requiring a hysterectomy (8). The pathologist reported it as placenta percreta.

Issue regarding termination of pregnancy should be discussed earlier after adequate counseling to avoid consequences of massive haemorrhage needing hysterectomy and jeopardizing women's health. This is ethically supported by Clinical Opinion, American Journal of Obstetrics and Gynaecology, Dec 2009, whereby maternal condition or treatment of such a condition results in an increased risk to the woman's health or life should she continue her pregnancy, or complications that threaten the woman's health or life and salvage of the fetus is clinically hopeless-justifying termination of pregnancy (9). In addition to morbidly adherence placenta, both illustrated cases had early rupture of membrane where fetal outcome is theoretically very poor.

To date, there is scarce evidence in the treatment of this condition during early pregnancy (7,8). Other concern would be the possible risk of bleeding even during the procedure in view of the low lying placenta. However, a study by Daisuke Nakayama et al (2007) found that there was no statistical difference in the mean intraoperative blood loss between medical and surgical termination of pregnancy in placenta praevia (10).

More so, these cases having spontaneous leaking at extreme prematurity poses poor prognosis to the fetus, where termination of pregnancy is more justified, on top of the risk of maintaining pregnancy with possible accreta needing

hysterectomy. Fetocide with injection of potassium chloride and subsequently systemic methotrexate for regression of decidual function could be the option, if only the life threatening condition concerning morbidly adherent placenta was highlighted in the earlier case. It was proven to be successful in the second case where uterus was well preserved. Methotrexate was essentially required to expedite the placental involution (1). By administering intra-cardiac injection of potassium chloride alone, the regression of placental function will be delayed to achieve avascular, non-viable product of conception, allaying risk of bleeding.

Bilateral internal iliac artery ligation was considered in the first case, to reduce the bleeding but it was not practical as it would require more time when her life was at stake. Even, with initial intention of conserving the uterus with digital evacuation of the placental tissues or trimming of the placental bulk, it was never a realistic accurate approach at that situation of 'adrenaline surge'. With the placental tissue encroached into the cervix and tightly adhered at the posterior lateral uterine wall, it was later discovered that the possibility of previous Caesarean section was complicated with extended downward uterine tear which is supported by earlier researchers (3).

In conclusion, termination of pregnancy and systemic methotrexate would be an option in highly suspicious cases of morbidly adherence placenta at extreme prematurity to avoid massive obstetric haemorrhage and hysterectomy. However, proper evaluation and counseling is mandatory, and decision should be made on case-to-case basis.

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