

## Case Report

# Placenta accreta treated with planned caesarean hysterectomy

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### ABSTRACT

Caesarean hysterectomy is considered the gold standard treatment for placenta accreta. In young women who want the option of future pregnancy and agree to close follow-up monitoring, conservative treatment is a valid option. Several key points of both cesarean hysterectomy and conservative treatment remain debatable, such as timing of delivery, attempted removal of the placenta, and use of temporal internal iliac occlusion balloon catheters, ureteral stents, prophylactic embolization, and methotrexate. In cases of placenta percreta with bladder involvement, conservative treatment may be the optimal management. Regardless of the chosen option, the woman and her partner should be warned of the high risk of maternal complications related to an abnormally invasive placenta. Here we are reporting a case of planned caesarean hysterectomy in antenatally diagnosed placenta accreta.

**Keywords:** Placenta accreta, Cesarean hysterectomy, Antenatal diagnosis, Antenatal MRI

### INTRODUCTION

Morbidly Adherent Placenta (MAP) is a rare condition where placenta fails to separate spontaneously due to an abnormally firm adherence to the uterine wall. However, incidence has increased from 1 in 2500 deliveries (1985) to an estimated 1 in 533 deliveries (2002) – owing to the increasing rate of Caesarean Sections.<sup>1</sup> Morbidly Adherent Placenta is a leading cause of intractable postpartum hemorrhage requiring emergency peripartum hysterectomy-other complications including Disseminated Intravascular Coagulation; bladder, bowel and ureteric trauma; Acute respiratory distress syndrome and Acute Tubular Necrosis.

### CASE REPORT

A 30 years Gravida 3 Para 1 Living 1 Abortion 1, married since eight years, a housewife, belonging to middle class background, with 36.3 weeks by date and 36.5 weeks by scan presented to our labour room at 8 in the evening with complaint of bleeding per vagina since half an hour.

She was referred to our hospital from a private nursing home at 30 weeks, after being antenatally diagnosed as a case of placenta accreta on MRI. Patient was known case of secondary infertility since 5 years and had undergone three failed cycles of ovulation induction with Intrauterine Insemination. She had past history of fibroids for which open myomectomy was done (anterior wall intramural fibroid) after 1st child. Her first (spontaneous) conception was full term normal delivery. Second conception (spontaneous) terminated in a spontaneous complete abortion. Gravida 3- current (spontaneous) conception. Antenatal period till third trimester was uneventful. At 30 weeks, a routine ultrasound suggested a partially adherent placenta, but not low-lying. Doppler flows supported. An MRI was done for further evaluation showed placenta anterior, partially on normal uterine myometrium and from myometrium to outer serosal lining suggestive of placenta accreta/increta. Antenatal fetal surveillance with weekly Antenatal visits, Ultrasonography with Doppler studies and Non Stress Test kept till 37 completed weeks. Plan of action after 37 weeks post patient for an Elective Lower segment

Cesarean section SOS Caesarean hysterectomy as patient and relatives were not willing for medical management after explaining all the risk and consequences. However, on admission at 36.3 weeks, patient presented to the labour room with Bleeding per Vagina. Patient was immediately shifted to the Operation Theatre for an Emergency Lower Segment Cesarean Section SOS Caesarean Hysterectomy with four units of cross matched blood and two wide bore IV lines. Abdomen was opened by midline vertical incision. A 3.2 kg live baby was delivered by routine Lower Segment Caesarean section. Placenta and membranes did not separate spontaneously. Manual removal of placenta was not attempted. Uterine wall was thinned out with the placental surface seen very close to the serosal surface. Omental and bowel adhesions were present anteriorly, adhesiolysis was done. An intraoperative decision to proceed with Obstetric Hysterectomy was taken. Bilateral cornua and uterine arteries were clamped and ligated using the double clamp technique. While clamping the pedicles, the pelvic colon had to be dissected off the uterus on the left side. The transverse lower segment uterine incision was then extended laterally and posteriorly; to deliver the uterus with placenta and membranes in-situ; thus a Subtotal Hysterectomy was performed (Figure 1 and 2). Total estimated blood loss was 1600 ml. Two units Pack Cell Volume was given intra-operatively and 1 unit postoperatively. Patient tolerated the procedure well. Post-operative recovery period was uneventful. Repeat Complete Blood Count on day 3 showed haemoglobin of 9gm/dl, single dose parenteral iron given. Baby and mother were discharged on day 5 and suture removal done on day 11. Histopathology report later confirmed Placenta Accreta. Postoperative follow up until six weeks was kept; both baby and mother were doing well with no complaints.

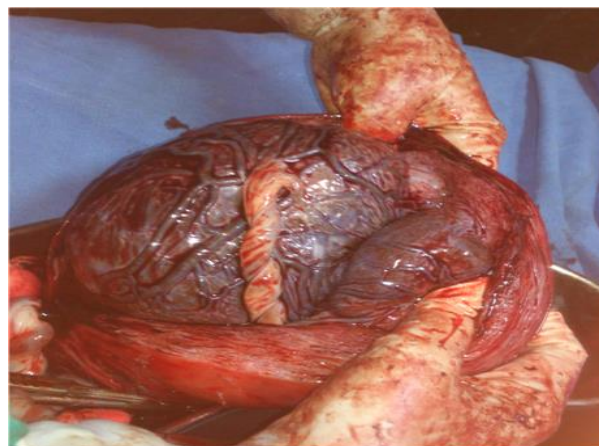


**Figure 1: Subtotal hysterectomy with placenta *in-situ*.**

## DISCUSSION

Role of prenatal identification of placenta accreta: Prenatal identification of placenta accreta is essential in

order to manage optimal delivery circumstances for these patients.<sup>2</sup> The key role of this in the management of patients with placenta accreta was highlighted by Warshak et al.<sup>3</sup> These authors reported that patients with a pre-delivery diagnosis of placenta accreta for whom a cesarean hysterectomy with no attempted removal of the placenta was planned at 34-35 weeks gestation, required fewer units of packed red blood cells and tended to have a lower estimated blood loss than those with no pre-delivery diagnosis.<sup>3</sup> This decrease in maternal morbidity for patients with a pre-delivery diagnosis of placenta accreta has also been reported by others.<sup>4</sup> Another advantage of prenatal identification is the possibility to plan the delivery in a suitable center with a multidisciplinary team and adequate equipment and resources including a maternity-oriented intensive care unit (ICU), an embolization unit with interventional radiologists, a blood bank capable of managing massive transfusion requirements, and the availability of other technical skills (urologists, vascular surgeons). It makes intuitive sense that expertise and experience are useful when managing difficult and somewhat uncommon problems. This has been demonstrated by Eller et al. who found that maternal morbidity is reduced in women with placenta accreta who delivered in a tertiary care hospital with a multidisciplinary care team in comparison with those managed in standard obstetric care facilities.<sup>4</sup>



**Figure 2: Placenta firmly adherent to uterus.**

The optimal timing of delivery for the patients with placenta accreta remains controversial. Whatever the gestational age chosen, practitioners have to plan an organization to include the unexpected occurrence of possible cases of acute bleeding requiring an emergency cesarean section. In a large multicentre trial, 23.9% (27/113) of women with placenta accreta in whom cesarean section was planned had an emergency delivery.<sup>5</sup> O'Brien et al. reported that after 35 weeks, 93% of patients with placenta accreta experienced hemorrhage necessitating delivery.<sup>6</sup> In order to decrease this risk of emergency delivery, Warshak et al. proposed that patients with a highly suspected placenta accreta should be delivered by cesarean hysterectomy at 34–35 weeks.<sup>3</sup> Finally, an analytical decision model showed that

the preferred gestational age at which to deliver these individuals at high risk is almost certainly at or beyond 34 weeks, but not later than 37 weeks.<sup>7</sup> Management of placenta accreta: There are four basic options for management of placenta accreta: the extirpative method, the cesarean hysterectomy, conservative treatment and the one-step conservative surgery which is an alternative conservative technique. Whatever the option chosen, when placenta accreta is suspected before delivery in a woman with an anterior placenta previa, it is recommended to perform a vertical fundal uterine incision to avoid the placenta and reduce the risk of massive postpartum hemorrhage (PPH).

1) The extirpative method: This procedure consists of performing a forcible manual removal of the placenta delivery in an attempt to obtain an empty uterus. The technique is associated with a higher rate of massive postpartum hemorrhage and subsequent peripartum hysterectomy than the conservative approach.<sup>8,9</sup> Therefore, this option should be abandoned when other procedures are available.<sup>10</sup>

2) Cesarean section hysterectomy: This procedure consists of performing a hysterectomy after the birth of the child without attempting removal of the placenta when placenta accreta is strongly suspected antenatally or after an attempted placental removal when the diagnosis of placenta accreta is not made until during delivery. This option is currently recommended by the American College of Obstetrics and Gynecology as well as various authors, and is considered the gold standard treatment for placenta accreta.<sup>6,7,11-13</sup> The maternal mortality rate of cesarean hysterectomy seems to be relatively low. Among 95 deaths after 1,461,270 births between 2000 and 2006, only one death secondary to placenta accreta had been reported in the United States.<sup>14</sup> Nevertheless, mortality rates as high as 7% have been reported to be associated with placenta percreta.<sup>5</sup> Surprisingly, there are very few case series which have assessed maternal morbidity after cesarean hysterectomy. The most methodologically sound studies have only recently been published.<sup>3,4,15,16</sup> One of the most interesting is the study of Eller et al., who found, in a series of 76 cases of cesarean hysterectomy for placenta accreta a 42.1% transfusion rate ( $\geq 4$  red blood cells), 28.9% cystotomy rate, ureteral injury in 6.6% of the women, while infectious complications occurred in 33.3% and in all major morbidity among 59% of the women. In spite of some methodological flaws<sup>17</sup>, it appears that maternal morbidity is significantly reduced when no attempt is performed to remove the placenta.<sup>4</sup> Warshak et al. described morbidity of cesarean hysterectomy for placenta accreta at a similar level to what Eller et al.<sup>3,4</sup> observed. In that series of 62 cases of cesarean-hysterectomy, performed without attempting to remove the placenta, the average estimated blood loss, number of red blood cells transfused, and operative time was 2344 mL, 4.7 and 194 minutes, respectively, while the rates of bladder injuries, ureteral injuries and neonatal Intensive

Care Unit referrals were 23%, 8% and 72%, respectively.<sup>3</sup> The main advantage of cesarean hysterectomy (without attempted removal of the placenta) is probably to limit the risk of bleeding in order to reduce maternal morbidity, although this still remains high.<sup>3,18</sup> Its major drawback is the loss of fertility, which may seem particularly unwarranted when placenta accreta is not confirmed histologically (this was the case in 28% of cases of prenatal suspicion of placenta accreta in the study of Eller et al.<sup>4</sup> Moreover, there is a lack of consensus regarding several detailed key points of the cesarean hysterectomy strategy.

3) Conservative treatment: This option consists of delivering the child, tie and then cut the umbilical cord at its base to leave the placenta in place adhering either partially or totally to the myometrium, and to close the hysterotomy. Conservative treatment can also be performed following a vaginal delivery when the placenta is not delivered and no plane of cleavage is found between the uterus and the placenta, but only if this attempt to remove the placenta was careful, without force or insistence. Conservative treatment avoids a hysterectomy in about 75-80% of cases but is associated with a risk of transfusion requirements, infection and severe maternal morbidity.<sup>8,9,19,20</sup> In addition, it requires long-term monitoring. Until recently, only a very limited amount of data regarding maternal outcome after conservative management was available, based only on case reports and short case series from individual tertiary-care institutions.<sup>8,9,20</sup> Some authors have proposed the use of methotrexate to hasten the placental resolution.<sup>19</sup> Its efficacy for this indication has never been demonstrated and only case reports and very short case series with no control group have been reported.<sup>21</sup> The RCOG does not recommend its routine use.<sup>22</sup> The low rate of placental cell turnover compared to what is observed in early pregnancy suggests a much lower efficacy of methotrexate in late compared to early pregnancy. In addition, methotrexate exposes the patient to the risk of neutropenia or medullary aplasia; even with a single dose in a young patient for the treatment of ectopic pregnancy.<sup>23</sup> These types of side-effects can have a dramatic impact in a patient with an intrauterine placenta with a 30% risk of infectious complications.<sup>19</sup> Finally, the only case of maternal death after conservative treatment was secondary to a cascade of complications (bone marrow suppression, sepsis, renal failure) attributed to an intra-umbilical cord administration of methotrexate.<sup>19</sup> For these reasons, we would like not to use methotrexate in cases of conservative treatment.

4) The one step-conservative surgery: This alternative conservative procedure has been mainly described by one author.<sup>24-26</sup> It consists of resecting the invaded area together with the placenta and performing the reconstruction as a one-step procedure.<sup>25</sup> The main stages of this alternative technique achieved through a median or transverse suprapubic incision are a) vascular disconnection of newly-formed vessels and the separation

of invaded uterine from invaded vesical tissues; b) performing an upper-segmental hysterectomy; c) resection of all invaded tissue and the entire placenta in one piece with previous local vascular control; d) use of surgical procedures for haemostasis; e) myometrial reconstruction in two planes and f) bladder repair if necessary.<sup>26</sup> This procedure does not appear to alter the subsequent obstetrical outcome. Palacios-Jaraquemada has reported 45 pregnancies following a one step-procedure for placenta accreta. Of these, 44 were uneventful and only one was complicated by a recurrence of placenta accreta.<sup>25</sup> Preventive arterial embolization, Internal iliac occlusion balloon catheters, Ureteral stents all this help to reduce the blood loss and thus help in decreasing the mortality.

In the case of a prenatal suspected placenta accreta, the extirpative method must now be abandoned. It seems reasonable to plan delivery at approximately 35-36 weeks of gestation. The advantages and disadvantages of cesarean hysterectomy and conservative management should be clearly exposed to the patient and the partner, who must be involved in deciding on the chosen option. Considering the present state of knowledge, it seems reasonable to propose a cesarean hysterectomy if the patient has no desire for a future pregnancy is at a higher reproductive age and is parous. In these latter cases, preoperative ureteral stent placement as well as prophylactic embolization before hysterectomy may be considered in order to reduce maternal morbidity, whereas the benefit-harm balance is against the routine use of internal iliac occlusion balloon catheters. In contrast, if the patient wants the possibility of another pregnancy are young and nulliparous, conservative treatment with no adjuvant methotrexate therapy should be proposed.

## CONCLUSION

Keeping in mind the high maternal mortality and morbidity of Morbidly Adherent Placenta, there is a pressing need for antepartum diagnosis and planned management. The high risk population for Morbidly Adherent Placenta includes previously scarred uterus (Cesarean Section/ myomectomy/ hysterotomy), Asherman's syndrome and Dilatation and Curettage. The rate of Morbidly Adherent Placenta with previous one, two, three, four and five Cesarean Section is 3%, 11%, 40%, 61% and 67% respectively. "Placenta Accreta mindedness"- a higher index of suspicion in high risk patients with readiness to resort to hysterectomy sooner rather than later is required. Intra-operative bleeding is rarely a problem till manual removal of placenta is attempted.

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