International Journal of Life Sciences, Biotechnology and Pharma Research Vol. 13, No. 12, December 2024 Online ISSN: 2250-3137
Print ISSN: 2977-0122

DOI: 10.69605/ijlbpr_13.12.2024.127

CASE SERIES

Conservative Management of Morbidly Adherent Placenta: A Case Series

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Received Date: 26 October, 2024 Accepted Date: 30 November, 2024

ABSTRACT
Morbidly adherent placenta refers to a range of disorders characterized by the abnormal adherence of all or part of the placenta to the uterine wall. The rise in incidence of morbidly adherent placenta observed in recent years could likely be attributed to the growing rates of caesarean deliveries. This condition can lead to severe obstetric haemorrhage and is one of the leading causes of obstetric hysterectomy.We report aninteresting series of cases involving placenta accreta in patients who wish to preserve their future fertility and were managed using a conservative approach where placenta was left in situ and methotrexate was used to aid the involution on placenta.

Key words: Morbidly adherent placenta, Placenta accreta spectrum, Methotrexate, Medical management

INTRODUCTION
Morbidly adherent placenta characterised by abnormal trophoblast invasion of part or all of the placenta into the myometrium of the uterine wall. Also known as the placenta accreta spectrum, it refers to the range of pathologic adherence of the placenta, including placenta increta, placenta percreta, and placenta accreta. [1] It is associated with increased maternal morbidity and mortality, which can occur due to severe and sometimes life-threatening haemorrhage. This often requires blood transfusions and hysterectomy at the time of delivery or during the postpartum period. [2] The trauma and scarring of myometrial tissue are key factors that predispose individuals to morbidly adherent placenta, often resulting from caesarean sections, dilatation and curettage (D&C), and other surgical injuries to the myometrium. According to a retrospective study, the incidence of placenta acreta was 8.3/10,000 deliveries, but an increasing trend was observed with an increase of 120% over the 12-year interval.[3] This increase is probably a consequence of the increasing caesarean section rates.

The antenatal diagnosis of the morbidly adherent placenta spectrum is essential, as optimal outcomes are achieved when delivery is conducted at a tertiary maternal care facility prior to the onset of labour or the occurrence of bleeding. However, morbidly adherent placenta cases are often asymptomatic during pregnancy, and the diagnosis is usually established during caesarean section or after delivery following unsuccessful attempts to remove the placenta. In cases where future fertility is not a consideration, obstetrical hysterectomy has been the preferred strategy. A comprehensive review of peripartum hysterectomies conducted by the UK Obstetric Surveillance System (UKOSS) identified morbidly adherent placenta as the underlying cause in 38% of the cases.[4] For women who wish to preserve their fertility, conservative approaches aimed to avoid hysterectomy by leaving the placenta in situ are described in the literature.[5] However, sufficient evidence in favour of such approaches is still lacking. We hereby present a series of cases of morbidly adherent placentas that were managed conservatively in our medical institute from 2019 to 2024.

CASE SERIES
Case 1
A 30-year-old G3P0LOA2 mother presented at 38 weeks of gestation presented with labour pain. She delivered a live male baby weighing 2.8 kg vaginally, but the placenta did not expel even after two hours of delivery. A diagnosis of retained placenta was made, and she was rushed to the operation theatre, where manual removal of the placenta was tried under

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general anaesthesia. Almost two-thirds of the placenta could removed by insinuating fingers in the plane between the placenta and the myometrium while the other segment fails to detach. Further attempts to remove the placenta using a sponge-holding process in piecemeal were tried, but anticipating chances of morbid adherence of the remaining portion of the placenta with myometrium procedure were abandoned. Uterotonics with methergine and oxytocins were used to achieve and maintain uterine contractions. An urgent ultrasound scan with doppler study was done, which revealed a placental mass measuring 5 x4 cm adherent to the anterior wall withloss of the normal hypoechoic retroplacental zone in the myometrium below the placental bed and presence of placental lacunae.

Since the patient was haemodynamically stable and expressed a desire for future pregnancy, a conservative management approach was planned, which involved leaving the placental remnants in situ and administering methotrexate. Baseline investigations, including serum beta-hCG, a complete blood count, and liver and renal function tests, were done.

The patient received methotrexate (50 mg/m²) intramuscularly on the first and eighth days of treatment while being monitored as an inpatient under antibiotic coverage. She was discharged on the ninth postpartum day with instructions to return on the fourteenth day for further ultrasound and serum beta-hCG testing. However, she presented again on the thirteenth day postpartum with secondary postpartum haemorrhage (PPH). An urgent scan revealed a placental mass occupying the lower portion of the uterus, just above the internal os. Surgical evacuation of the placental mass was performed, and uterotonics were administered to control the bleeding. A repeat scan following the procedure confirmed an empty uterine cavity. The patient did not experience any further episodes of bleeding and resumed her menstrual function 10 weeks after delivery.

Case 2

A 25-year-old primi para with IUFD at 30 weeks of gestation delivered a stillborn male baby at a rural hospital and was referred to our centre with a diagnosis of retained placenta. The patient was promptly taken to the operation theatre for the manual removal of the placenta under general anaesthesia; however, the procedure was unsuccessful. Since the patient did not experience any haemorrhage and remained hemodynamically stable, we decided to abandon the procedure. An MRI study confirmed the diagnosis of placenta accreta, revealing a significant placental tissue mass measuring 12 × 9 cm in the fundo-anterior region of the uterus.

In view of her desire for future childbearing and since there was no active vaginal bleeding, it was decided to conserve her uterus and to treat her medically with methotrexate leaving the placenta in situ. She received four doses of methotrexate (1 mg/kg per day), administered intramuscularly on days 1, 3, 5, and 7, along with folinic acid at 0.1 mg/kg on days 2, 4, 6, and 8. To prevent infection as a precaution, ceftriaxone and metronidazole were also initiated and continued for 7 days.

The progress of placental involution was followed by repeating ultrasound with Doppler study and serum beta-hCG on Day 14 after the initiation of methotrexate. The ultrasound showed a reduction in placental tissue size to 9 x 7 cm, with multiple areas of cystic degeneration and decreased colour flow. Additionally, serum beta-hCG levels had declined by more than 50%. As a result, the administration of further methotrexate was postponed, and a repeat scan along with serum beta-hCG testing was scheduled for Day 21. However, the patient presented on Day 18 with vaginal bleeding and reported the expulsion of the placental mass (Figure 1). An urgent ultrasound was performed, which revealed an empty uterine cavity.

Case 3

A 30-year-old primigravida was referred from a subdivisional hospital with preterm labour at 35 weeks of gestation. She delivered a live-born male baby vaginally at our hospital. Controlled cord traction was attempted for placental delivery but failed while the cord snapped, and the placenta was retained for more than 1 hour. An attempt was made to remove the placenta under general anaesthesia manually. While nearly the entire placenta was removed, a segment or cotyledon was still attached. We tried to remove the remaining placental tissue using ring forceps, but we were concerned about the potential for morbid adherence of the remaining placental portion. Consequently, we decided to avoid further attempts at removal. USG confirm the presence of a placental mass measuring 4 x 3 cm attached to the anterior wall of the uterus with colour flow. A conservative management using methotrexate in an attempt to attempt to preserve future fertility was planned. She received two doses of methotrexate (50 mg/m^2) intramuscularly 1 week apart. After 2 weeks of delivery, a repeat scan reveals placental tissue measuring 3 x 3 cm with absent flow on the doppler. She received orally mifepristone 200 mg, followed by a dose of 800 mcg of misoprostol, administered 48 hours later. The next day, the patient expelled a fleshy mass, and an ultrasound revealed minimal remnants remaining in the uterine cavity. As a result, gentle uterine curettage was performed under antibiotic coverage. During a follow-up after six weeks, the patient reported no additional postpartum complications and uterine involution was complete.

Case 4

A 35-year-old woman, who is a P1L1, was referred from the district hospital with a diagnosis of retained placenta following a vaginal delivery at 40 weeks of

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gestation. At the time of admission, she was hemodynamically stable and showed no signs of active vaginal bleeding. An ultrasound revealed that the entire placenta adhered to the anterior wall of the uterus. Subsequent MRI findings confirmed placenta accreta, indicating that placental tissue was invading the myometrium. While the option of hysterectomy was discussed, the couple expressed a preference for conservative management. Methotrexate chemotherapy was administered intramuscularly at a dosage of 1 mg/kg on days 1 and 3, accompanied by folinic acid rescue therapy every other day. On the fifth day, she experienced torrential vaginal bleeding, leading to haemorrhagic shock. She was promptly resuscitated with crystalloid infusion and blood transfusion, followed by an emergency hysterectomy as a life-saving measure. She received three units of packed red blood cells during the perioperative period. Her postoperative course was uneventful, and she was discharged in stable condition on the sixth postoperative day.

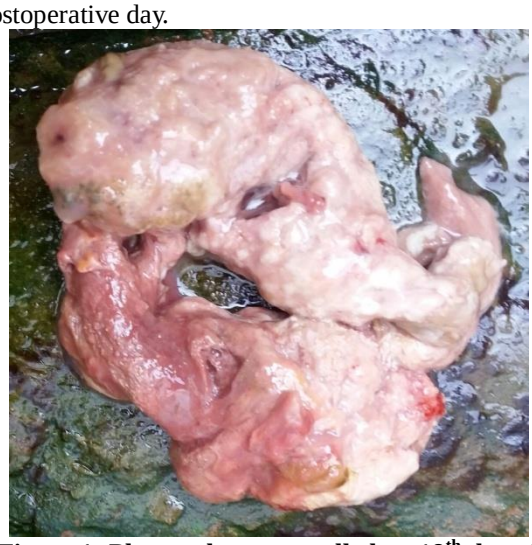

Figure 1: Placental mass expelled on 18th day of treatment

DISCUSSION

Morbidly adherent placenta, also referred to as placenta accreta spectrum, is a potentially life-threatening condition, with hysterectomy being the standard treatment. The consideration of conservative or expectant management approaches where the placenta is left in situ should be evaluated on an individual basis, taking into account the patient's hemodynamic status and her desire for future fertility. The use of methotrexate in the expectant management of the placenta accreta spectrum is supported by some authors, who suggest that it may expedite placental involution and resorption.[6] In this case series, we reported 4 cases where methotrexate was used to manage morbidly adherent placenta. All four patients had a diagnosis of morbidly adherent placenta after delivery only. However, proper screening utilizing Doppler ultrasound could detect placenta accreta syndrome, particularly in high-risk groups, enabling antenatal diagnosis of this condition, which provides an opportunity to optimize management and outcomes.[1] None of the four cases has obvious antenatal risk factors for the morbidly adherent placenta, like previous caesarean sections or a history of uterine surgeries. None of our cases had life-threatening postpartum haemorrhage at presentation and were haemodynamically stable. Since all patients were keen to preserve their uterus to retain childbearing potential, we chose conservative management after detailed counselling about the risks, benefits, and efficacy of leaving the placenta in situ and utilizing methotrexate to hasten placental involution and resorption. This conservative approach successfully avoided hysterectomy in three out of the four cases of morbidly adherent placenta. However, one case necessitated an emergency hysterectomy as due to the development of a life-threatening secondary postpartum haemorrhage.

There is limited evidence on the efficacy and safety of expectant or conservative management of morbidly adherent placenta, and most of the available literature is from retrospective case reports. Available literature suggests that conservative management by leaving the placenta in situ in selected cases can lower the risk of subsequent hysterectomy from 85% to 15%.[5,7] In addition to leaving the placenta in situ, investigators have employed adjunctive measures to diminish blood loss and hasten placental reabsorption, such as uterine devascularization with uterine artery balloon placement, embolization or ligation, and postdelivery methotrexate administration.[1] Of several methods, adjunct use of methotrexate is a relatively simple approach, with some case reports showing that it could lead to rapid placental involution. Methotrexate is assumed to affect the placental tissue by diminishing its vascularization, which may result in placental necrosis and, consequently, expedited placental involution. Currently, there is no established protocol regarding the appropriate dosage and duration of methotrexate administration. Some studies reported the use of methotrexate at a dose of 50 mg/m² intramuscularly, administered weekly or biweekly, while a few other studies mentioned multiple doses of methotrexate (1 mg/m² per day for 3-4 days in a week). [8–10] The decision regarding the necessity for additional treatment cycles in earlier studies was based on observations of placental involution and a decrease in placental vascularity as measured by Doppler ultrasound. In some reports, serial measurements of serum beta-HCG were also utilized. Most case reports indicated the use of antibiotic coverage as a prophylactic measure to prevent infection. Previous case reports indicate that with methotrexate, placenta expulsion was observed within 10 to 15 days of treatment, while in some cases, progressive resorption could take approximately 6 months.[8–10] A prospective study by Lin et al. reported that 33.3% of patients had spontaneous expulsion after methotrexate treatment, and 45.5% required additional dilation and curettage

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to evacuate the uterus. [8]They also reported subsequent pregnancies in 42.1 % (8/19) patients. Several studies have indicated a significantly elevated risk of recurrence of morbidly adherent placenta in subsequent pregnancies, with reported rates ranging from 13.3% to 22.8%.[11,12] Persistent vaginal bleeding and infection were identified as significant complications in a prospective study.[8] Further,administration of methotrexate poses risks of haematological and renal toxicities. Additionally, breastfeeding is contraindicated during this treatment period.

Due to the limited evidence supporting its efficacy, the conservative management of morbidly adherent placenta remains classified as investigational. In this case series, conservative management proved successful in three out of four instances of morbidly adherent placenta in patients who presented with retained placenta following vaginal delivery. However, these findings should be interpreted with caution until future well-designed prospective studies corroborate them.

CONCLUSION

Our case series emphasizes the potential of conservative management as an alternative to the conventional approach of hysterectomy for women with morbidly adherent placenta who desire to preserve their uterus. However, expectant management should be reserved for carefully selected cases of placenta accreta spectrum, following thorough counselling regarding the associated risks, uncertain benefits and efficacy.

Conflict of Interest: None to declare
Source of funding: Nil

Authors Contribution

JC and DK acquired data/records and drafted the paper. JC revised the manuscript critically. The final manuscript was read and approved by both authors.

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