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Case Report

Fertility preservation by conservative approach in a primiparous woman with placental adherence

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ABSTRACT

Placenta accreta spectrum (PAS) describes a group of disorders in which all, or part of the placenta remains adherent to the uterine wall. Early identification of risk factors, accurate diagnosis and treatment in accordance with the resources available are essential and can help in reducing maternal morbidity and mortality. In the absence of risk factors, placental adherence is a rare entity, and conservative management becomes essential, especially in primiparous women to preserve future fertility. A primigravida in her late twenties presented in labour at 35 weeks of pregnancy to deliver a live baby of 2200 gm. The placenta did not separate with uterotonics and multiple attempts at manual removal of placenta under general anaesthesia. Medical management to conserve the uterus was decided, and two doses of methotrexate (50 mg) were given intramuscularly a week apart. Placental products were expelled after 2 months and the patient resumed her normal menses. She conceived spontaneously 8 months later. PAS is a possibility, though rare, in low-risk primigravidae and preparedness to confront such situations is of utmost importance. Intramuscular single dose or multiple dose methotrexate can be considered as a viable option in stable patients who wish to retain their fertility.

Keywords: Adherent placenta, Methotrexate, Post-partum complications

INTRODUCTION

Placenta accreta spectrum (PAS) describes a group of disorders in which all, or part of the placenta remains adherent to the uterine wall. The adherence may be superficial or deep, and is categorised as accreta, increta and percreta based on the degree of adherence.[1] Adherent placenta can cause life threatening postpartum haemorrhage and is a leading cause of obstetric hysterectomy, associated with significant morbidity and mortality.[2] Early identification of risk factors, accurate diagnosis and treatment in accordance with the resources available are essential and can help in reducing maternal morbidity and mortality. Risk of morbidly adherent placenta is 1 in 400 deliveries according to the fetal medicine foundation (UK). History of previous caesarean deliveries, previous uterine procedures, placenta previa and high parity pose a high risk for PAS. In the absence of risk factors, placental adherence is a rare entity, and conservative management becomes essential, especially in primiparous women to preserve future fertility.[3]

CASE REPORT

A primigravida in her late twenties, presented to our obstetric care unit at 35 weeks of pregnancy with complaints of pain abdomen and leaking per-vaginum. She had no significant past medical or surgical history and was booked with regular antenatal visits at our hospital. Obstetric examination revealed a live fetus in cephalic presentation, with good uterine contractions at admission. Previous prenatal ultrasonography revealed an anterior placenta with no features of previa. She underwent spontaneous preterm vaginal birth to deliver a live baby of 2200 gm. There was an unexpected delay noted in the delivery of placenta with no signs of placental separation

even 45 minutes after the delivery of the baby, despite administering uterotonics as well as intra-umbilical oxytocin.

The patient was shifted to the operation theatre and manual removal of placenta (MRP) was attempted under General anaesthesia, but no plane of cleavage could be identified. As the patient was hemodynamically stable, with no active bleeding, the attempt at MRP was temporarily deferred. Ultrasonography was performed the next day, which showed retained placenta in the left upper endometrial cavity, with an approximate size measuring 9×6.7×8.4 cm. Peripheral Doppler flow signals were noted around placenta, along with scattered internal Doppler flow signals (Figure 1). Thinning of the myometrial interface was noted. A second attempt of MRP was done under anaesthesia, at the patient's request on the second postnatal day, but was unsuccessful again.

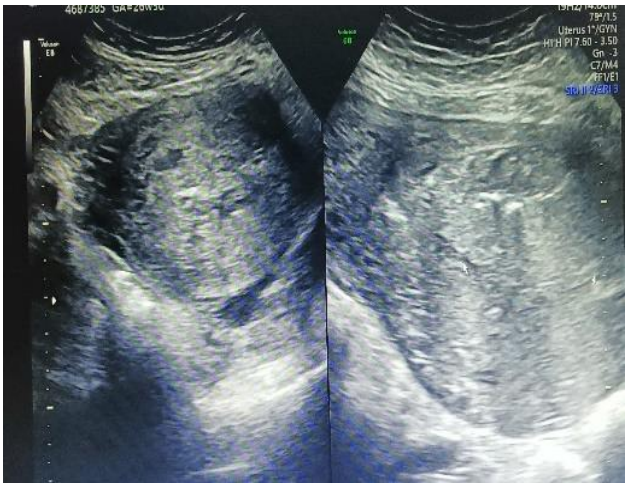

Figure 1: Pelvic ultrasonography performed on postnatal day 1 showing retained placenta.

The patient was anxious to retain her fertility, multiple options were discussed and medical management with injection methotrexate was decided upon. Investigations were performed (Table 1) prior to the procedure and antibiotic coverage was given to prevent puerperal infection due to the retained placenta.

Table 1: Baseline investigations performed after delivery.

Investigations	Value	Normal range
Hemoglobin	9.6 g/dL	12-16 g/dL
Total count	13×10^9/L	$4\text{-}11\times10^9$/L
Baseline b-HCG	15,492 IU	0-5 IU
Aspartate transaminase	14 U/L	5-40 U/L
Alanine transaminase	11 U/L	7-55 U/L
Serum creatinine	0.76 mg/dL	0.6-1.1 mg/dL

b-HCG: Beta subunit of human chorionic gonadotrophin; L-Litre; dL-decilitre; U-unit; IU-International unit; mg-milligram

Methotrexate (50 mg) was injected intramuscularly on postpartum day 4. She was closely monitored and serial b-HCG was done. On postnatal review a week later, b-hCG showed a rise in value to 17,280 IU and ultrasonography indicated retained placental products with a reduction in size to 5.5×6.4×5.6 cm and no internal vascularity (Figure 2).

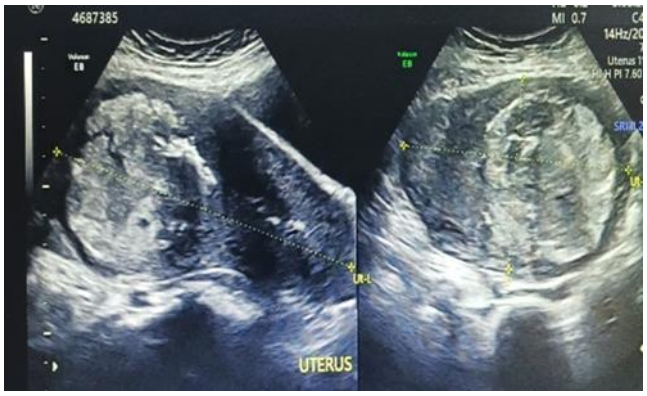

Figure 2: Ultrasonography on postnatal day 11 indicating retained placenta with significant reduction in size.

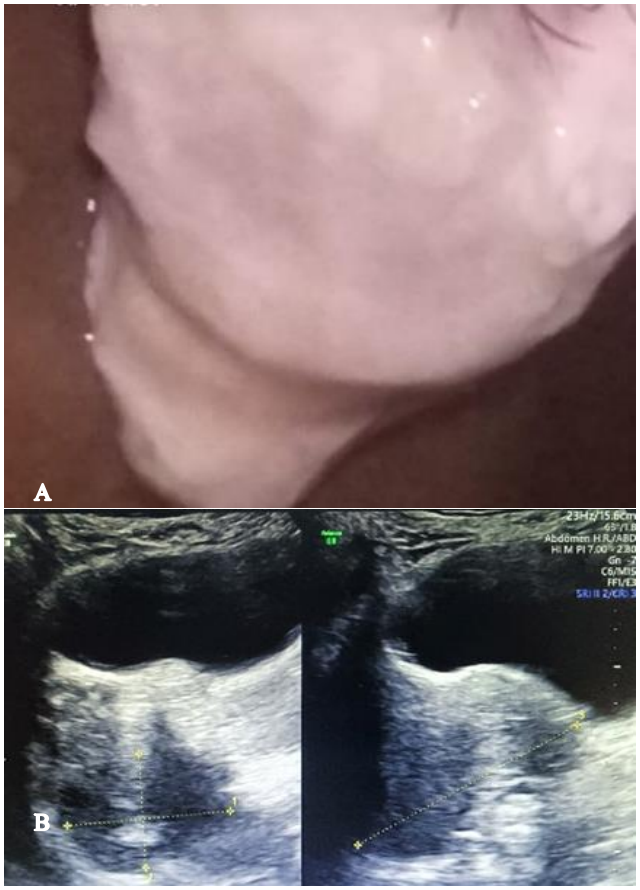

Figure 3 (A and B): Patient presented with expulsion of placental products after two months. Gross appearance of the same is depicted in and pelvic ultrasonography after expulsion revealed minimal retained products.

A second dose of methotrexate 50 mg was given intramuscularly on postnatal day 11. Weekly b-hCG was done thereafter, indicating a falling trend in b-hCG (Table 2). Two months later, the patient came to the Out-Patient clinic with history of passage of a fleshy mass, which grossly resembled a placenta. Sonography revealed an endometrial thickness of 5 mm and a small hyperechoic lesion in the lower uterine cavity measuring 2.5×1.4 cm with no increased vascularity (Figure 3). On further regular follow-up, she had no menstrual complaints and successfully conceived naturally 8 months after placental expulsion.

Table 2: Serial b-HCG monitoring.

Serial monitoring of b-HCG postnatally	Value (IU)
Day 2	15,492
Day 11	17,280
Day 18	5101
Day 25	986
After 2 months	4.8

b-HCG: Beta subunit of human chorionic gonadotrophin.

DISCUSSION

When PAS is diagnosed antenatally, a multidisciplinary plan of action is kept at hand prior to delivery. The hospital should ensure the presence of senior obstetricians, anaesthetic team, surgical team, interventional radiologists as well as have an established infrastructure and strong nursing leadership accustomed to managing high-level postpartum haemorrhage, as well as have access to a blood bank capable of employing massive transfusion protocols.[4]

Unexpected PAS, especially in low-risk primigravidae, can be a frightening situation due to the risk of severe post-partum haemorrhage and possibility of hysterectomy. In cases where the mother is vitally stable with no undue bleeding, conservative procedures can be performed when MRP fails. The ACOG obstetric consensus (2018) describes options like expectant management, focal surgical/hysteroscopic excision of the placenta, use of uterine devascularisation techniques, uterine artery embolization (UAE), high-intensity focussed ultrasonography and use of Methotrexate injections for uterine conservation.[1] The triple-p procedure has also been tried successfully, where suturing around accreta area is done after resection.[9]

A number of cases have been reported where morbidly adherent placenta (MAP) in primigravidae have been successfully treated with UAE thereby preserving the uterus, but the fertility rates after UAE remain inconclusive.[3,5] Recent literature shows the success of using Injection Methotrexate (single or multiple doses) in managing a stable case of adherent placenta.[6-8] There have also been reports in literature where hysterectomy had to be performed in primigravidae with torrential bleeding due to undiagnosed placenta percreta.[10]

Main goals of management in this patient were to decrease the risk of maternal morbidity including blood loss, coagulopathy, operative injuries, and to preserve fertility. Conservative management is possible in circumstances where there is no serious risk to life, and the patient is willing to go through a prolonged follow-up process, understanding the complications of the same. The index case in this report, following treatment with two doses of Methotrexate, successfully expelled the placenta two months after delivery. She conceived spontaneously eight months later and is currently carrying a healthy pregnancy with regular prenatal follow-up.

CONCLUSION

PAS is a possibility, though rare, in low-risk primigravidae and preparedness to confront such a situation is of utmost importance. Intramuscular single dose or multiple dose Methotrexate can be considered as a viable option in stable patients who wish to retain their fertility.

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