

# Single Dose Methotrexate in Successful Evacuation of Second Trimester Placenta Accreta

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## Abstract

Morbidly adherent placenta is a serious and life-threatening condition. High index of suspicion for placenta accreta can save patient from undergoing hysterectomy. Timely and appropriate treatment modality is key in reducing morbidity of the patient Reporting herewith a case of 22-24 weeks intrauterine fetal demise in a primigravida patient who was diagnosed with Placenta accreta. Ultrasonography and MRI confirmed the diagnosis. Primigravida with no live issue, no active bleeding and stable vital parameters favored the option of conservative management in the form of “single dose methotrexate regime”. Patient was then given Injection methotrexate 50 mg IM on day 1. Regularly monitored with CBC(complete blood count),LFT(Liver Function Test),KFT(kidney Function Test), beta HCG, USG and pelvic doppler. On day 7 piecemeal removal of complete placenta accrete was successful under USG guidance.

**Keywords:** Placenta accreta, methotrexate, USG, HCG.

## Introduction

Morbidly adherent placenta is a condition in which, due to myometrial invasion by chorionic villi, all or part of the placenta adheres to the uterine wall. This may occur when the deciduas basalis and the Nitabuch layer are either primarily deficient or secondary compromised<sup>(1)</sup>. Abnormal trophoblast invasion has been associated with up regulation of the endothelial vascular growth factor (VEGF) and angiopoietin-2 and down regulation of the VEGF-R and Tie-2 receptors<sup>(2)</sup>.

Adherent placenta complicates approximately 1

in 2500 deliveries and the risk of placenta accreta is approximately 0.1% with previous one caesarean section and close to 0.4%, 0.7%, 2-2.2% and nearly 3.5% with previous two, three, four and five or more cesarean section respectively. The wide range of complications may include severe postpartum hemorrhage, postpartum curettage, perforation of the uterus, shock, infection, fertility loss, and even death. In developing countries the most common treatment is hysterectomy<sup>(3)</sup>. Some studies have, however, identified specific therapies<sup>(4)</sup>, which resulted in the survival of the uterus and fertility. Reported treatments include methotrexate medical therapy<sup>(5)</sup>, uterine embolization, and expectant management.<sup>(6,7)</sup> Life-threatening hemorrhage, embolism, damage to neighboring organs with secondary injury, transfusion-related complications, reoperation and multi-organ failure are only a few of placenta accreta's potential implications, making optimal clinical management highly essential.

Here is the case report of adherent placenta in a 22-

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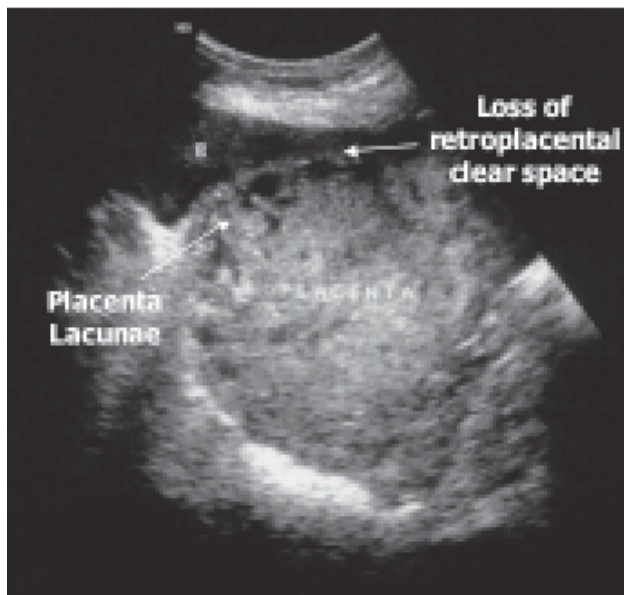
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24 weeks intrauterine fetal demise (IUID) which was treated conservatively with single dose methotrexate.

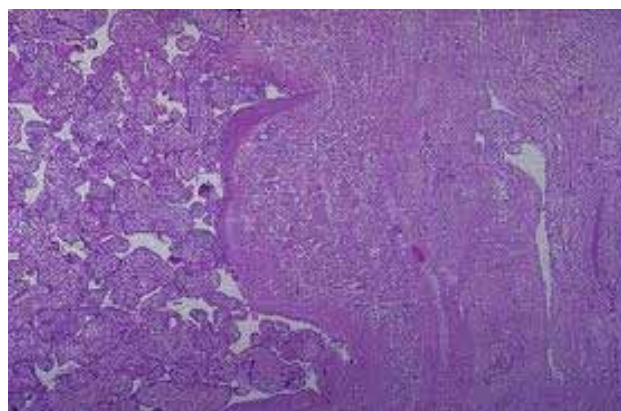
**Case Report:**

**Clinical profile:** A 26 years old primigravida woman with 26 weeks of gestation age presented in the ANC OPD for routine checkup. On general examination, vitals were stable. Per abdominally, uterus was relaxed, and uterine height was corresponding to 22 weeks. However, on auscultation fetal heart sound was absent. Ultrasonography confirmed intrauterine fetal demise of 22-24 weeks.

Patient was hospitalized and induction of labour was done with tablet Misoprostol 50 ug, repeat dose every 4 hours. After 4 doses, abortus was delivered. However, Placenta was not delivered spontaneously and there was no active bleeding. Patient was administered injection Oxytocin (20 units) over 1-2 hours, followed by second dose of injection Oxytocin (20 units) after a gap of 2 hours. Despite 40 Units of Injection Oxytocin, there was no separation of placenta. Urgent ultrasonography showed completely retained placenta with loss of the hypochoic space between uterus and placenta at some places and extension of placenta into superficial part of myometrium suggestive of Placenta Accreta. MRI was done which confirmed the presence of focal placenta accreta.



**Image 1: Ultrasonography suggestive of placenta accreta**



**Image 2: Histopathological feature of placenta accreta**

**Management:** After the detailed discussion and explaining management options to patient and her relative, a decision was taken for conservative management of Placenta accreta. Primigravida with no live issue, no active bleeding and stable vital parameters favored the conservative management of the case.

The Serum beta-HCG was 4,080mIU/mL. After taking informed written consent, single dose injection methotrexate 50 mg intramuscular was given to the patient. Alternate day Complete Blood Count(CBC), Kidney Function Test (KFT), Liver Function Test (LFT) was done. The patient was followed up regularly with clinical, laboratory and ultrasonography investigations. On Day 3, repeat beta HCG was 1,430mIU/mL (Table 1).

Review USG with color Doppler was done on day 6 which showed reduced placental perfusion and gradual signs of detachment in the affected area. Patient and relatives were explained the risk of bleeding, sepsis and spontaneous expulsion and was given option for dilatation and curettage with due risk. After the consent of patient and relatives, under USG guidance piecemeal removal of placenta was done. Complete removal of placenta with no active bleeding was ensured on USG. Patient was monitored for post operatively for any complications. As post-operative, patient was stable without any complications, patient was discharge after 48 hours. Weekly follow ups were advised. Serum beta HCG was repeated at 4 weeks (<5 mIU/mL). The couple was counselled and advised to avoid conception for 6 months.

**Table 1: Lab profile of patient with placenta accreta**

| Parameter       | DAY 0     | DAY 1                        | DAY 3 | DAY 5 | DAY 7                 | Day 10    |
|-----------------|-----------|------------------------------|-------|-------|-----------------------|-----------|
| bHCG (mIU/ml)   | 4080      | 2035                         | 1430  | 1260  | 980                   | 910       |
| Hb (gm%)        | 13 gm     | 11gm                         | 11 gm | 10 gm | 10gm                  | 10        |
| Platelets (Lac) | 2         | 1.9                          | 1.8   | 1.8   | 1.7                   | 1.6       |
| TLC             | 8300      | 9800                         | 11000 | 9600  | 8700                  | 8800      |
| Blood Urea      | 28        | 26                           | 30    | 27    | 28                    | 26        |
| Sr Creatinine   | 0.8       | 0.7                          | 0.8   | 0.8   | 0.9                   | 0.9       |
| Sr Bilirubin    | 1.0       | 0.9                          | 0.8   | 0.8   | 0.8                   | 0.8       |
| SGOT            | 18        | 20                           | 18    | 20    | 20                    | 21        |
| SGPT            | 24        | 28                           | 21    | 22    | 22                    | 18        |
| Remarks         | Diagnosis | Inj methotrexate<br>50 mg IM |       |       | USG guided<br>removal | Discharge |

### Discussion

Methotrexate has been identified as an adjuvant therapy for preservative placenta accreta management<sup>(8)</sup>. Tong, *et al* pioneered the conservative form of systematic methotrexate administration<sup>(9)</sup>. The outcome differs widely from placenta removal at 7 days to progressive resorption in approximately 6 months<sup>(10)</sup>. Methotrexate is suspected to function by causing placental necrosis and speeding up a more rapid placenta involution. This contradicts the assumption that methotrexate operates on rapidly dividing cells, as the proliferation of trophoblasts does not occur at term. There is no consensus on the appropriate dosage, duration, or route of administration. In this patient methotrexate was administered in single 50 mg intramuscular dose and follow-up to ensure placental tissue resolution was done with a combination of clinical evaluation, ultrasound examination, and serum beta HCG assay. USG is useful for assessing placental involution and combined with Doppler color imaging to assess placental vascularity<sup>(9,10, 11)</sup>.

### Conclusion

The case described here shows that in selected patients diagnosed with placenta accreta during peripartum, even after vaginal birth, conservative expectant management with methotrexate is possible. With patients closely monitored, conservative management tends to be a healthy alternative to extirpative management and is a reasonable choice in well-selected, haemodynamically stable patients desirous of potential reproductive function of adherent placenta.

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**Source of Funding:** Self.

**Conflict of Interest:** nil.

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