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CASE REPORT

Methotrexate as Conservative Management for Morbidly Adherent Placenta (MAP): A Case Report

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ABSTRACT

Abnormal placental invasions continue to be a major problem in obstetrics and gynecology. It is a major cause of obstetric hemorrhage, with a high risk of mortality and morbidity. Morbidly Adherent Placenta (MAP) has become more common in recent years as a result of a variety of risk factors. Despite being highly sensitive and specific, routine pregnancy ultrasound can miss MAP diagnosis. As a result, other imaging modalities must be used in such doubtful cases. Furthermore, MAP is commonly treated with surgical interventions such as hysterectomy, which has a severe psychosocial impact on all child-bearing women-while using methotrexate for placenta in situ in MAP remains controversial to this day. Few studies have been conducted due to a lack of standard protocols. As a result, in our case, we propose an underutilized MAP conservative treatment called "methotrexate," which was successfully used in our patient to manage her adherent placenta with good outcomes and minimal side effects. We hope that by encouraging more research into the use of methotrexate for MAP, we can avoid hysterectomy and preserve fertility to the greatest extent possible.

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Introduction

Morbidly Adherent Placenta (MAP) is a broad term that encompasses all types of abnormal placental invasions. It is well known that depending on the degree of invasion, it could be accreta, increta, or percreta [1]. However, MAP is strongly linked to massive obstetric hemorrhage, which leads to high maternal mortality and morbidity rates. Unfortunately, MAP has accelerated dramatically in recent years for a variety of reasons, previous C-section delivery is a major the predisposing risk factor [1]. Many studies found a strong relationship between cesarean deliveries and MAP rates. Myometrial tissue trauma or previous scars, such as dilatation and curettage, myomectomy, and postpartum endometritis, also play a role. An early and accurate diagnosis will allow for the best management plan for both the mother and the fetus. As a result, we can reduce the complications as much as possible. Unfortunately, MAP diagnosis is difficult. Transabdominal and vaginal ultrasound with doppler is the first line of imaging. Despite their high sensitivity and specificity, there are still concerns about their diagnostic accuracy. Other imaging modalities, such as MRI, can detect the MAP accurately but require additional research because it is not used as the first line of imaging.

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The MAP quandary is in the management approaches. For optimal health safety for the mother and newborn, a multidisciplinary team must be involved. Whether to use a surgical techniques or a conservative approach is determined by the patient's preferences and health circumstances. Depending on the degree of placental invasion, surgical management can include a variety of procedures, including a total hysterectomy. Our case report focuses on the conservative management of MAP. We present a case of undiagnosed severe MAP in early pregnancy at 16 weeks, with a dead fetus that was successfully expelled with medical management, but the retained placenta and scar, which was on the verge of dehiscence, were managed with multiple doses of methotrexate therapy. As a result, the main goal of our case is to propose the underutilized "methotrexate" MTX as an effective management option for MAP because not enough studies have been done as a treatment option for MAP up to this point. MTX is used to treat nearly all medical pathological and autoimmune diseases. However, a number of potential side effects have been proposed, such as the possibility of inducing placental necrosis or causing long-term neonatal and infant serious outcomes [2,3].

Case Report

G11P6, a 37-year-old woman, had four prior abortions. Her medical history is insignificant, and she is not taking any medications other than antenatal vitamins. Alternatively, her surgical history was remarkable, with two prior cesareans and two D&Cs. Her obstetric history was marked by four missed abortions. At the time of presentation for this pregnancy, she was asymptomatic but pale, with a history of vaginal bleeding. An ultrasound in the out-patient clinic revealed a single 15-week-old fetus. There was no fetal heart activity detected, and it was her fourth missed abortion. As a result, she was admitted for a medical abortion. Misoprostol was administered in two doses according to FIGO classification as 400 mcg in 2doses as 6hours apart keeping view of her previous surgeries. The placenta was kept, and the fetus was expelled with mild blood clots. Physical examination revealed that she was vitally stable, that her abdomen was soft, and that she was experiencing mild vaginal bleeding. All lab tests were carried out as directed by gynecologists. Transvaginal Ultrasound (TVUS) displayed outstanding characteristics. The endometrium was echogenic and thickened in the fundal region, measuring 1.92 cm; there was a retained placenta overlying the previous cesarean scar, which is very thin and vascular on doppler scan, with the possibility of placenta accreta; and there was echogenic material seen within the cervical canal but no significant free fluid. We recommended an MRI for greater diagnostic accuracy and to rule out any adherent placenta. Meanwhile, the patient was given IV antibiotics, thromboprophylaxis & two units of packed red blood cells.

MRI revealed a heterogeneous faintly enhancing area near the superior aspect of the uterine defect could indicate associated placenta increta (Figure 1). Conception remnants obliterated the uterocervical cavity. With a small amount of free pelvic fluid. The patient was given Methotrexate (MTX) injections to after calculating the dose with help of pharmacist according to body surface area as her weight was 80.8 kg so she received 90mg as 3doses to preserve the uterus and all the baseline investigations as liver function test and renal function tests were done before giving MTX . As a result, the placenta remained in place. According to the body surface area calculation, she received the first dose of methotrexate injection. She was then discharged with weekly follow-up for the second and third doses of MTX, as well as b-hCG and ultrasound scan monitoring. Following the completion of the three MTX doses, b-hCG dropped dramatically from 5393.4 Miu/ml at the time of presentation to 10.4 Miu/mL. Her hemoglobin level remained constant at around 11.5 g/dL. Furthermore, the ultrasound revealed the process of placental collapse.

Discussion

ArulKumaran S, et al. [4] was first to describe the use of MTX in advanced gestation in 1986. In their case report, the placental mass was successfully expelled after 11 days of systemic methotrexate administration with no signs of placenta could be visualized on ultrasound examination of the uterus. However, only a few cases of MTX being used conservatively in early pregnancy have been reported [4,5]. Conservative management has shown a high rates of maternal morbidity, in a systematic review performed by Matsuzaki S, et al. [6]. The side effect profile of MTX varies markedly according to MTX dose. Doses are classified as high > 500 mg/m^2, intermediate 50-500 mg/m^2 & low dose is < 50 mg/m^2. The observed side effects are rarely life-threatening, commonly like nausea, stomatitis, soreness of the throat, fever & headache. Specifically, MTX in MAP may cause

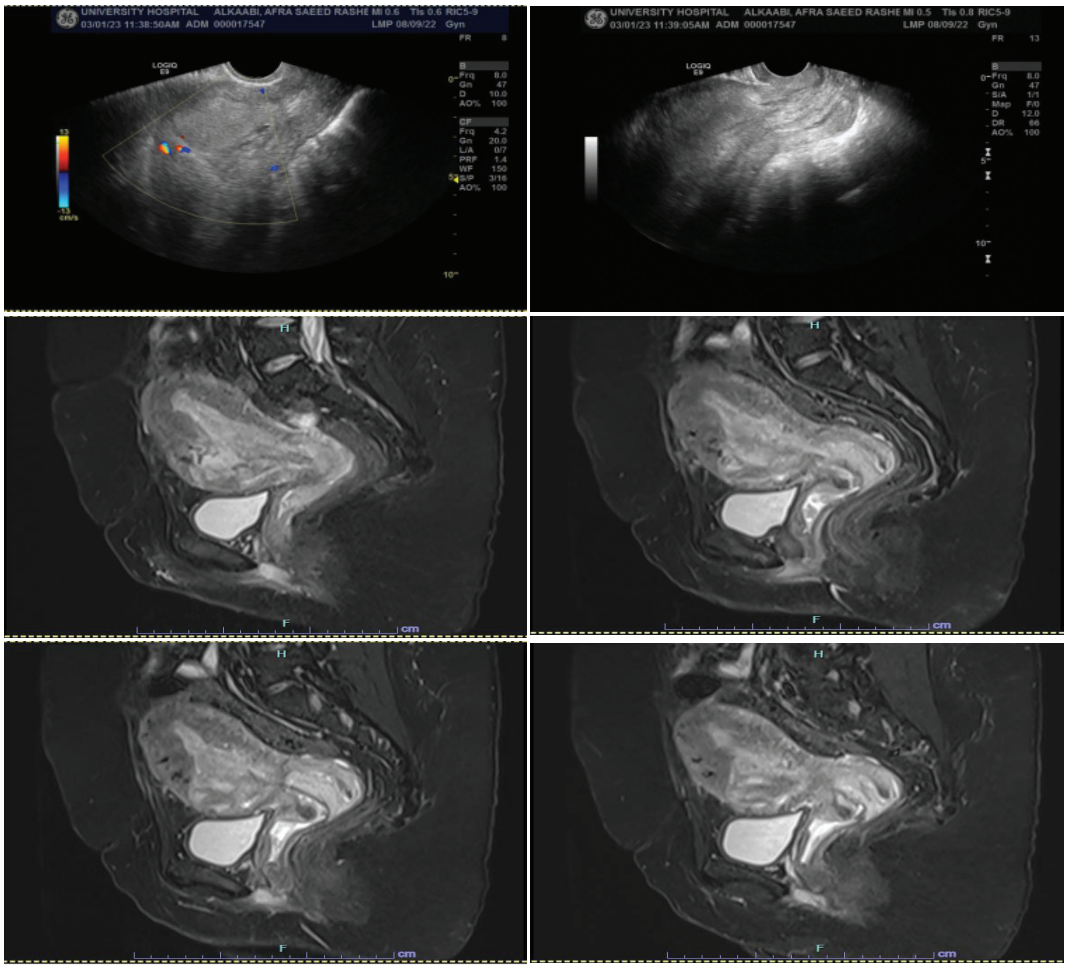

Figure 1 MRI findings.

blood loss of 1000-2000 mL, as reported in many cases. A case report found that MTX transfers into the mother's breast milk, but the detected levels were relatively low, 0.11%. However, caution must be taken regarding giving it to breastfeeding mothers [7,8].

In our presented case, methotrexate successfully managed our issue of MAP. A study was conducted by Sentilhis L, et al. [9] on 167 cases with placental adherent. 22% of them underwent hysterectomy due to conservative management failure, at the same time, 131(78.4%) women were treated conservatively. In a retrospective analysis by chunhua zhang, et al. 54 cases diagnosed with placenta increta were treated with methotrexate via two different routes of administration; intravenously & locally multi-point injection under ultrasound guidance. The results found that local multi-point MTX administration under ultrasound guidance is a better alternative for those who want to preserve fertility [7].

The administration of methotrexate serves to facilitate devitalization of the molar pregnancy, thereby facilitating its removal with greater ease. This conservative approach also has the advantage of preserving fertility by avoiding the need for hysterectomy and enabling a more traditional cesarean section, should that be required. However, it is important to note that if the products of conception are removed without accurate diagnosis and management of the MAP, there is a risk of excessive hemorrhage, which could necessitate the need for hysterectomy. Diagnosing a morbidly adherent placenta during pregnancy provides the opportunity for multidisciplinary planning with the goal of minimizing maternal and neonatal health risks and reducing the chance of mortality [10]. The utilization of methotrexate as a conservative management strategy for Morbidly Adherent Placenta (MAP) has been underexplored within the field of obstetrics and gynecology. Despite the increasing prevalence of MAP, there remains a dearth of protocols specifically addressing the utilization of conservative approaches,

such as methotrexate, in the management of early gestational molar pregnancies

Conclusion

The findings of our case study indicate that successful conservative treatment for MAP does not appear to jeopardize the patient's subsequent fertility, but the risk of recurrence in future deliveries is high. As a result, additional research is required to identify uniform diagnostic criteria and management strategies in order to achieve the best results.

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Ethical approval

Informed consent was obtained from the patient herself with the agreement of the obstetrics & gynecology department for publication with confidentiality.

Disclosure

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