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Case Report

Management of Live Cesarean Scar Pregnancy by Systemic Methotrexate and local Potassium Chloride Injection, Long Period but Successful Management: A Case Report

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Abstract

Cesarean scar pregnancy (CSP) is a rare form of ectopic pregnancy in which the gestational sac embedded in the previous cesarean scar. Although it can be accompanied by life-threatening complications, there is no global agreement about the optimal treatment for this condition. Our patient was a 31 years old woman, with the history of two previous cesarean deliveries who was admitted due to a sonogram's report of a live incisional ectopic pregnancy. Her vital signs were stable and she did not agree with operative intervention. Medical management includes Two- doses of Methotrexate and local potassium chloride injection was scheduled. Negative serum B-hCG (2.7 mIu/ml) was achieved two months later without any related treatment complication on follow up. The ultrasound resolution of ectopic pregnancy was achieved 4 months later.

Medical treatment of Cesarean scar pregnancy (CSP) is a less invasive method with satisfactory results that can be considered in correctly selected patients.

Keywords: *Caesarean Scar Pregnancy; Methotrexate; Potassium Chloride; Medical Management*

Introduction

Nontubal ectopic pregnancy is the implantation of an embryo outside the uterus or fallopian tubes. Sites include a caesarean scar (the healing of an incision in the uterus after caesarean section), cornea of uterus, ovary, cervix and the abdomen [1].

Cesarean scar pregnancy (CSP) is a rare and unique type of ectopic pregnancy which was first defined in 1978 [2]. This is a late serious complication of cesarean section (CS) and refers to implantation of a gestational sac in the scar of a previous CS. The estimated incidence of CSP is reported to be 1:2226 - 1:1800, occurring in 1.15% of women with previous cesarean deliveries and accounts for 6.1% of all ectopic pregnancies after cesarean deliveries [3].

There are five current management strategies in treatment of Cesarean scar pregnancy: expectant management, medical therapy, surgical intervention, uterine artery embolization, or a combination approach. Each treatment has various levels of success and depends on surgeon skill, availability of facilities, patient clinical presentation and patient desire [4].

In this study, we report a successful medical management of cesarean scar pregnancy, which responded well to two doses of Methotrexate and local potassium chloride injection.

Case Report

A 31-year-old women was admitted to Qaem university teaching Hospital (Mashhad, Iran) due to sonogram's report of a live incisional ectopic pregnancy. She had twice had a cesarean delivery and this was her third pregnancy. The gestational age was 7 weeks + 2 days, based on LMP. Ultrasound (US) examination revealed a gestational sac contains yolk sac and fetal pole embedded in the cesarean scar and a thin myometrium of 1.5 mm. Gestational age based on CRL was 6 weeks + 6 days.

The patient was counseled about the risk and benefits of both medical and surgical treatment. The patient refused operative intervention and she signed the Consent form in which all benefits, disadvantages, and complications of medical management were mentioned. Therefore, medical treatment with Methotrexate was scheduled. Complete Blood count and liver and renal function tests were normal.

At this time, the serum hCG level was 105300, so 5 MEq KCL was injected into the gestational sac and the first dose of methotrexate at the dosage of 50 mg/m^2 was injected. We started checking the serum hCG level serially. Ultrasound examination on the next day, revealed the lack of fetal heartbeat. The second dose of MTX (50 mg/m^2) was injected 3 days after the first dose in which the serum hCG level was 93692. The patient was discharged from the hospital after 12 day with good general condition and the serum hCG level of 47000. In consecutive checks in the following days, the serum hCG levels was declining and the serum hCG level was 620, one month after the first dose of MTX. Finally after 2 months, negative titer was achieved and it dropped to 2.74. The ultrasound resolution of ectopic pregnancy was achieved 4 months later.

Discussion

Cesarean scar pregnancy (CSP) is a rare type of ectopic pregnancy which its possible risk factors are not well clarified. Some possible independent risk factors are maternal age older than 35 years, gravidity higher than 3 (especially higher than 5), more than two induced abortions (especially more than five), an interval of less than 5 years (especially less than 2 years) between the current pregnancy and the last CS, history of induced abortions after CS and retro position of the uterus [3]. The optimal treatment for Cesarean scar pregnancy (CSP) is unclear [5]. Several methods have been defined for the management of cesarean scar pregnancy. Surgical intervention include wedge resection of ectopic pregnancy via laparotomy or laparoscopy, medical intervention include local injection of 5 mEq potassium chloride into sac to cease cardiac motion in viable ectopic pregnancies, local or systemic methotrexate (has been adapted for unruptured ectopic pregnancies with competitive inhibition of folate-dependent steps in nucleic acid synthesis, effectively kills the rapidly dividing ectopic trophoblast) and combination of uterine artery embolization and uterine aspiration are current strategies for this condition [4,5]. Each method has various levels of success and depends on different factors like surgeon skill, patient clinical presentation, desire for further fertility and patient desire [4].

Medical management in the form of systemic methotrexate ± local KCL injections is a method that only can be used in patients who are clinically stable and have no contraindications to methotrexate [4]. Although this method may require further treatment with medication or additional surgery, in one study a good and high success rate has been reported [5]. Ammar A., *et al*. in a retrospective study of 33 cases of cesarean scar pregnancies that were managed medically reported the Overall success rate of 77.8% for medical management of CSP. In

their study, the success rate differ between viable CSP who received combined local potassium chloride plus systemic methotrexate with a success rate of 66.7% and non-viable CSP which had a success rate of 100% and just received systemic methotrexate [5].

In a Cohort study, out of 11 patients who had a CSP in the study period, 6 patients were treated with multi-dose methotrexate protocols (4 patients received intra-gestational KCl), and 5 had single dose methotrexate with 1 patient requiring adjunct uterine artery embolization. Of patients managed with multi-dose methotrexate, two required additional methotrexate and one had hysteroscopic resection (under laparoscopic guidance) for a persistent gestational sac (day 17). In patients with single dose methotrexate, three required additional methotrexate and two patients had D&Cs for retained products of conception [6].

In another study out of Twenty-seven cases of CSP who were identified during the study period, 14 patients (51.85%) were treated with systemic methotrexate (MTX), Three (11.1%) intra-sac and systemic MTX, and Two (7.4%) intra-cardiac potassium chloride (KCl) along with systemic MTX, five (18.51%) cases had expectant management. One case initially treated with Laparotomy Wedge resection, and one case treated with uterine artery embolization (UAE) and systemic MTX. A total of 20 (74.07%) patients were treated successfully with first-line treatment. Seven (25.92%) patients needed additional second line treatment. Among them, only one case had surgical intervention and the mean β -hCG resolution time was 60.85 days (range, 28 - 95 days) [7].

In a case series that published in 2012, 19 out of their 26 patients received medical management in the form of MTX inside the gestational sac as well as intra-muscular, and they all achieved complete resolution with no complications [8].

In one recent prospective cohort study intragestational sac KCl plus MTX is mentioned as a highly effective approach for the management of viable CSP despite high initial HCG values [9].

Despite all the studies done, still there is no global agreement about the best-preferred type of management. Treatment of CSP should be individualized based on risk factors and should be tailored to the patient's clinical presentation.

Conclusion

Using the medical treatment option in the form of systemic methotrexate + local KCL injections is a less invasive method with satisfactory results and acceptability in live ectopic pregnancies. This method has low complications rate with the benefits of preserving future fertility.

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