Case Report

iMedPub Journals
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Medical Case Reports
ISSN 2471-8041

2018
Vol.4 No.2:61

DOI: 10.21767/2471-8041.100096

The Failure of Uterine Artery Embolization with Methotrexate Infusion Combined Curettage as Treatment for Cesarean Scar Pregnancy – A Case Report

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Received: March 08, 2018; **Accepted:** March 20, 2018; **Published:** March 22, 2018

Citation: Han X, Fan Y, Yu Y (2018) The Failure of Uterine Artery Embolization with Methotrexate Infusion Combined Curettage as Treatment for Cesarean Scar Pregnancy – A Case Report. Med Case Rep Vol. 4 No. 2:61.

Abstract

The rates of caesarean scar pregnancy have increased. An increasing incidence has been considered most likely related to much higher rates of cesarean section. It is a rare and potentially life-threatening complication of pregnancy because of misdiagnosis. Therefore, it is important to train gynecologists and sonographers in timely diagnosis of CSP and management. Here we present one cases of CSP that were treated in our department by uterine artery embolization with methotrexate infusion combined curettage. She was treated successfully by laparotomy because of profuse bleeding 21 days after UAE.

Keywords: Embryo implantation; Methotrexate infusion; Cesarean scar; Pregnancy

Introduction

Embryo implantation in a previous caesarean scar (CS) resulting in a caesarean scar pregnancy. CSP is rare but potentially catastrophic complication of a previous caesarean section. The first case of a CS ectopic pregnancy was reported in 1978 [1]. It has become an important and serious problem over the last 10 years, as a result of the worldwide increase in cesarean deliveries. Cesarean scar pregnancy is different from tubal, cervical, and other forms of ectopic pregnancy. Diagnosis is generally difficult, and a false-negative diagnosis may lead to major complications, including hysterectomy. The majority of CSPs are case reports or small case series reported in the literature, because of the rarity of the condition. There is no consensus on the preferred mode of treatment [2,3].

Case Presentation

The patient was a 39-year-old uniparous woman in her third pregnancy who was admitted to our department. She had an eventful past history of one LSCS, and one artificial termination of pregnancy with a complaint of genital bleeding that had started two day earlier and amenorrea for two months. Its suspicion of ectopic pregnancy in the cesarean scar from ultrasonography performed at another clinic center two weeks early. There was no treatment. In the examination at the time of admission, she was found to be hemodynamically stable and use of a speculum showed minimal bleeding. The B-HCG assays were 31620 mIU/mL. Transvaginal ultrasonography was performed, which showed a gestational sac of dimensions 1.5 × 0.9 cm in the region of the uterine scar, without an embryo **(Figures 1-4).** It was decided to use systemic MTX treatment combined with mifepristone. The B -HCG assays after MTX doses were 29361 mIU/mL. Because of the patient's declared desire to preserve her reproductive capacity, our team decided to perform local injection of MTX under ultrasound guidance. Because of the rich vascularity of the gestation sac. It could cause scar rupture and extensive hemorrhaging, even hysterectomy. So that we decided to perform UAE with arterial infusion of MTX (20 mg in each embolized uterine artery). The procedure was performed successful. We had curettage ender ultrasound guidance 3 day after UAE with arterial infusing of MTX, which showed that there had been a favorable evolution of the ectopic mass, with diminished size and vascularization. The histologic examination revealed chorionic villi. It was accompanied by a gradual decline in the B -HCG assay(1584 mIU/ml) over the subsequent days and discharged. She admitted to our department because of profuse bleeding from uterine 21 days after UAE. The B-HCG assays were 141 mIU/mL. Transabdominal ultrasonography showed a gestational sac of dimensions 2.0 × 1.7 cm in the region of the uterine scar, without an embryo. She had emergent laparotomy because of profuse bleeding. Wedge resection of the lesion was performed. The B-HCG assays were 41.51 mIU/mL one day after operation. She was subsequently discharged from the hospital in a stable condition.

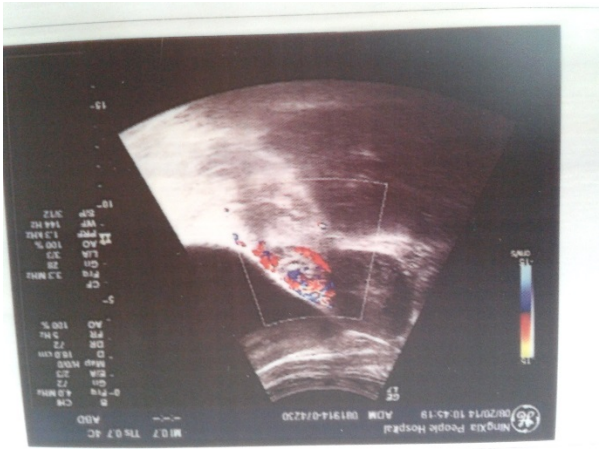

Figure 1 Transabdominal sonogram of the uterus, showing deep implantation of a gestational sac embedded at the site of a previous cesarean scar, without any fetal parts visible in the uterine cavity.

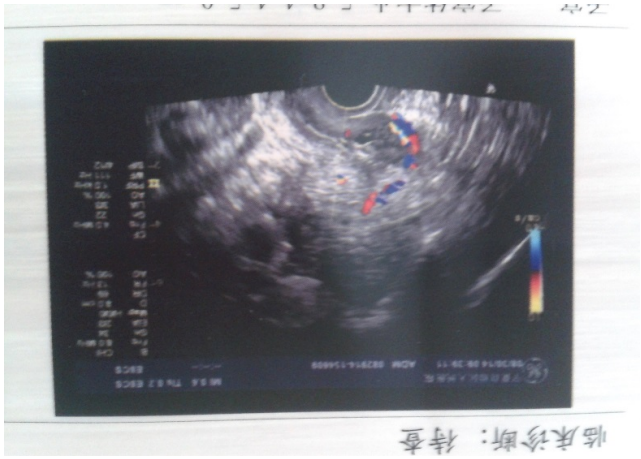

Figure 2 Transabdominal sonogram of the uterus after uterine artery embolism.

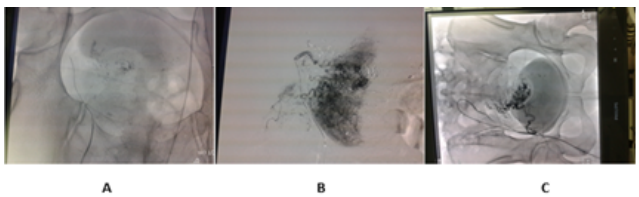

Figure 3 Bilateral uterine angiography before and after uterine artery embolization: a) Uterine arteries were enlarged by means of hypervascular infusion of methotrexate before uterine artery embolization; b) Unilateral occlusion was successfully performed; c) Bilateral arterial occlusion was confirmed after the uterine artery embolization and no extravasation was observed.

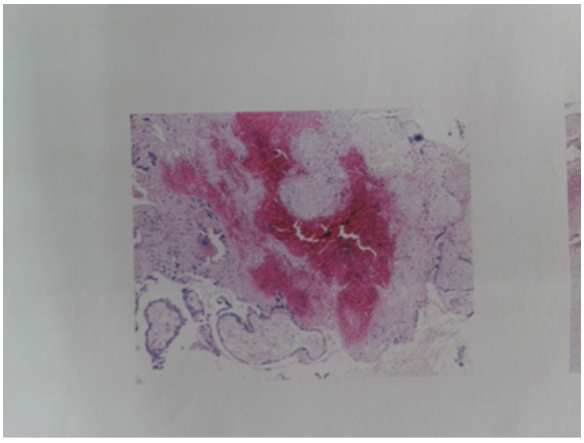

Figure 4 Pathology of curettage.

Discussion

Generally, termination of pregnancy in the first trimester is strongly recommended, as there is a high risk of subsequent uterine rupture, massive bleeding and life-threatening complications. At this gestation, the embryo is soft and fragile; vascularity of the placental bed, depth of placental implantation and risk of invasion of the bladder are all considerably less than those later in pregnancy. Treatment objectives should be to perform feticide prior to rupture, to remove the gestation sac and to retain patient's future fertility. Gestational age and viability, evidence of myometrial deficiency and clinical symptoms at presentation have been considered by various authors to determine the management. This has been successfully reported with local injection of MTX under ultrasound guidance. The MTX can be injected locally to the gestation sac via transabdominal or via transvaginal route. Transabdominal route requires a longer needle, used with caution not to penetrate the bladder wall. It does not require any anesthesia. The transvaginal approach allows for a shorter distance to the gestation sac with minimal risk of bladder injury. Blind uterine curettage as a primary treatment for CSP is therefore insufficient and should be discouraged. The lack of direct visualization, risk of a local haematoma formation and the need for a prolonged b-hCG follow up remain the major drawbacks. Various haemostatic measures have been used successfully as an adjunct to conservative treatment of viable CSPs for the prevention and control of profuse bleeding, such as local injection of vasopressin, intrauterine balloon tamponade by Foley catheter and the UAE technique. The UAE technique used in association with intra-arterial MTX infusion was first described by Yang et al. [4]. Their intention was to infuse the chemotherapy through the uterine arteries and instand not directly into the gestational sac or surrounding endometrium, which could cause scar rupture and extensive hemorrhaging. The objective in this type of treatment is to place the chemotherapy in direct contact with the embryo, thereby reinforcing the ischemia and trophoblastic degeneration that is promoted by embolization.

Studies have shown that local MTX infusion can be performed using higher doses of the drug without greater side effects compared to the systemic treatment using the same dose. Moreover, systemic absorption of MTX may be limited by deficient vascularization of the fibrous scar tissue [5-8].

Conclusion

In conclusion, although it has been indicated in the literature that UAE with local MTX infusion is a promising form of treatment, randomized controlled studies are still required in order to assess the real advantage of the procedure and to better evaluate the associated complications.

There are still some doubts regarding the intra-arterial dose that is recommended for treating ectopic masses in cesarean scars. In our case uterine artery embolization with methotrexate infusion combined curettage may be the preferred mode of treatment. But it failed in our case. Now day we have to rely on 'good practice points' based on anecdotal case reports and small case series. More research is required in this subject. So that setting up multicenter collaboration would encourage robust evidence-based studies essential for making recommendations for practice.

Acknowledgment

This paper is supported by the Natural Science Foundation of Ningxia Province (Grant no. NZ11146).

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