

# FERTILITY PRESERVING SURGICAL MANAGEMENT OF METHOTREXATE-RESISTANT CESAREAN SCAR PREGNANCY

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Implantation within the fibrous tissue of a cesarean scar is considered to be the rarest form of ectopic pregnancy, and it constitutes a life-threatening condition [1,2]. It comprises 6.1% of all ectopic pregnancies in cases with a history of at least one cesarean delivery [3]. The clinical presentation varies from light and painless vaginal bleeding to moderate abdominal pain [4]. Many asymptomatic pregnancies may still be easily misdiagnosed, leading to uterine curettage, followed by massive hemorrhage and emergency hysterectomy [5]. Although there are several interventions, such as dilatation and curettage (D&C) under ultrasound guidance, local or systemic injection of methotrexate (MTX), hysteroscopic removal of the ectopic pregnancy, uterine artery embolization, laparotomy or laparoscopic excision, currently used for maintaining uterine integrity, none have been universally accepted or found to be completely reliable [1,2,6-8,10,11,12,13]. Here, we present our experience in the management of a case of cesarean scar ectopic pregnancy.

A 40-year-old, gravida 3, para 1, woman presented to our hospital with vaginal bleeding and noncramping pain following D&C for inevitable abortion at another hospital. Her obstetrics history revealed one lower transverse cesarean section performed 2 years previously because of fetal death *in utero* at 37 weeks of gestation and two D&Cs after the cesarean section. She had suffered massive vaginal bleeding that required blood transfusion during and after that procedure. She was required to stay at that hospital for 3 days. After she was discharged, she had intermittent vaginal bleeding until the second postoperative week. On transvaginal Doppler ultrasonographic examination at our hospital, a solid tumor 5 × 6 cm in diameter was observed in the

lower part of the uterine cavity, extending from the anterior cervicoisthmic region of the uterus to the bladder (Figure 1A). Magnetic resonance imaging revealed a 60 × 56 mm bulging mass with a smooth surface and heterogeneous signal intensity, which had a heterogeneous contrast pattern after injection of contrast solution in the cervicoisthmic region of the uterus (Figure 1B). The result of a human chorionic gonadotropin (hCG) test showed a level of 68 mIU/mL. These results led to the suspected diagnosis of cesarean scar pregnancy. As the patient had no living child, we administered 75 mg of MTX (1 mg/kg) intramuscularly to preserve future fertility. One week later, β-hCG levels were 48 mIU/L. A second dose of 75 mg of MTX was administered intramuscularly. β-hCG levels were 14 mIU/L and <5 mIU/L, 1 week and 2 weeks later, respectively. Although β-hCG levels decreased, the tumor persisted on transvaginal Doppler ultrasonographic examination. Minilaparotomy was then performed. No blood was found in the abdominal cavity. Frozen pathology led to the diagnosis of cesarean scar pregnancy. Wedge resection of the ectopic pregnancy was carried out, and the uterus was preserved for future fertility (Figure 2). A microscopic examination of the mass confirmed the diagnosis of cesarean scar pregnancy (Figure 3). The patient was discharged on the third postoperative day after an uneventful recovery. Six weeks later, ultrasonographic examination showed a normal uterus.

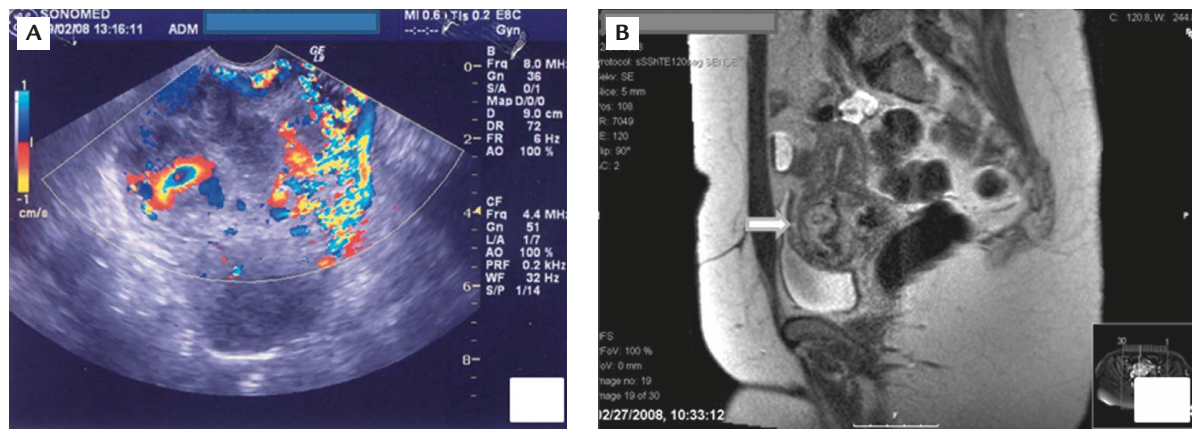
Cesarean scar pregnancy may carry a high risk of uncontrollable bleeding requiring hysterectomy, because the defective myometrium and uterine cervix are less capable of fibromuscular contraction to control the bleeding [3,9]. Gestational age and viability, evidence of myometrial deficiency, the woman's wish to preserve fertility and clinical symptoms at presentation are considered to determine management [3,6,10].

The present case was challenging as the diagnosis was not straightforward. The patient was initially misdiagnosed for inevitable abortion because of the profound bleeding and had undergone D&C at another hospital.

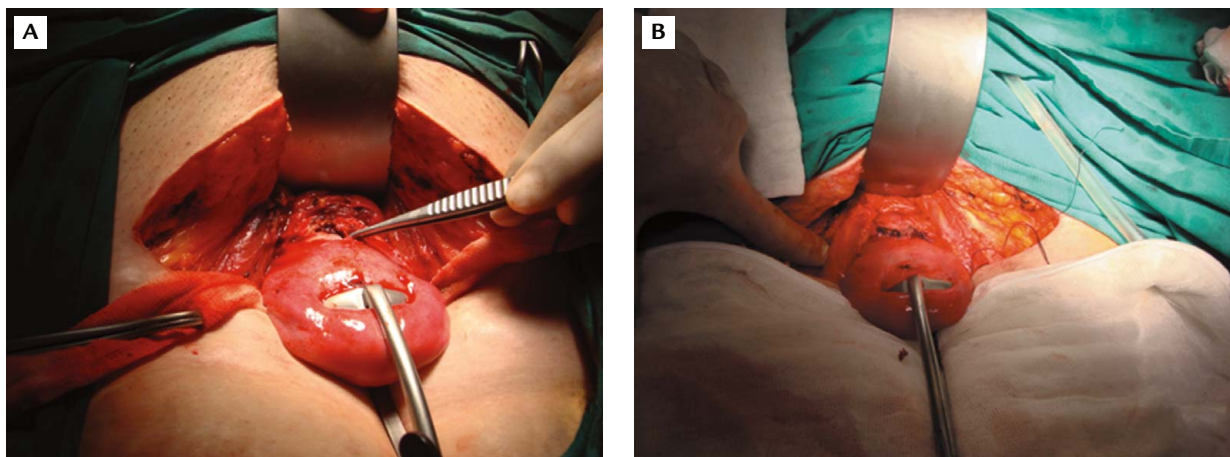


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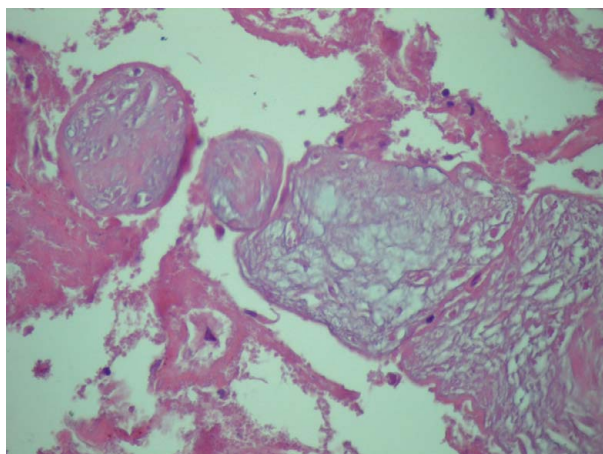
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**Figure 1.** (A) Ultrasonographic evaluation of the mass. (B) Magnetic resonance image shows the location of the mass (arrow).



**Figure 2.** (A) A wedge resection made through the cervicoisthmic region. (B) The appearance of the uterus after complete revision.



**Figure 3.** Necrotic chorionic villi in the fibrous mass (hematoxylin and eosin, 200×).

She had massive bleeding, which required blood transfusion during and after the procedure. Implantation in the uterine scar can cause serious bleeding after an otherwise uncomplicated dilatation and evacuation procedures [5,14]. D&C has been shown to be complicated by severe hemorrhage in 76.1% of the patients

undergoing this procedure [4]. Magnetic resonance imaging and vaginal sonography are also used as a diagnostic procedure [15].

Conservative treatment of cesarean scar pregnancy with local and systemically administered MTX has been reported recently [15–18]. These conservative treatments avoid unnecessary laparotomy and preserve the patient's fertility. Lai et al [16] and Lam et al [14] reported cases of cesarean scar pregnancy treated with MTX that required laparotomy because of excessive bleeding. Deb et al [19] have described a patient treated by MTX because of cesarean scar pregnancy. Despite rapid normalization of serum  $\beta$ -hCG levels, the patient remained symptomatic and the ultrasound appearance suggested incomplete trophoblast resorption. Surgical intervention had to be carried out. In the present case, MTX was administered intramuscularly as the patient wanted to preserve her fertility.  $\beta$ -hCG levels were decreased and normalized after the second treatment of MTX, but the mass persisted on ultrasound examination and laparotomy had to be performed as in the case of Deb et al [19].

Since all MTX treatment failures require surgical intervention to remove the gestational tissue and control the massive bleeding, most clinicians believe that primary surgical treatment by laparoscopy, laparotomy and hysterotomy immediately upon confirmation of the diagnosis of cesarean scar pregnancy is the best option. Laparotomy has, in most cases, become the first choice for surgeons who have no training in or have no adequate equipment for complex laparoscopic procedures; however, it requires a larger surgical wound, longer hospitalization, and longer recovery time.

In the present case, we performed minilaparotomic wedge resection of the ectopic mass. Laparotomic wedge resection of ectopic pregnancy is one of the preferred management for women wishing to preserve fertility. It avoids residual trophoblasts being left *in situ* and removes the microtubular tracts, and therefore, reduces the risk of recurrence [3].

In conclusion, obstetricians should not rule out cesarean scar ectopic pregnancy in patients with a previous cesarean scar presenting with massive bleeding during or after D&C, as the incidence of cesarean scar ectopic pregnancy operations has increased as a result of the increase in cesarean deliveries.

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