

Full length article

The Treatment of Cesarean Scar Pregnancy with Uterine Artery Embolization and Curettage as Compared to Transvaginal Hysterotomy



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ABSTRACT

Objectives: To investigate the outcome and menstrual status in patients after treatment of cesarean scar pregnancy (CSP) by transvaginal hysterotomy or uterine artery embolization combined with uterine curettage.

Study design: A retrospective cohort study. An analysis of CSP patients was performed using records from Shanghai First Maternity & Infant Hospital affiliated with Tongji University for the period between July 16, 2014 and January 22, 2016. Twenty-seven patients were treated with transvaginal hysterotomy and in this group, 49 patients received uterine curettage after UAE. The clinical information on these patients and clinical outcomes especially the status of menstruation were reviewed.

Results: There was only one complication in transvaginal hysterotomy group, while 3 cases of villus residue occurred in UAE group. Nineteen patients (70.4%) in transvaginal hysterotomy group self-assessed their menstrual volumes, which had no remarkable changes; 6 patients (22.2%) felt that their menstrual volumes had decreased. Thirty-five patients in UAE group (71.4%) reported that their menstrual volumes decreased ($P < 0.05$). The range of pictorial blood loss score was 55–82 in transvaginal hysterotomy group and 9–74 in UAE group, and the mean pictorial blood loss score was decreased from 68.4 to 65.8 in transvaginal hysterotomy group (a $3.2 \pm 4.4\%$ reduction) and from 66.4 to 38.8 in UAE group (a $41.7 \pm 26.4\%$ reduction) ($P < 0.05$).

Conclusions: Transvaginal hysterotomy appears to be more advantageous than UAE combined with uterine curettage. The menstrual interval and duration changed significantly in UAE group.

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Introduction

Cesarean scar pregnancy (CSP) refers to the implantation of a gestational sac with the myometrium at the site of a previous cesarean scar. As one of the rarest forms of ectopic pregnancies, the incidence of CSP has been reported to be 1 in 1800–2216 pregnancies [1,2]. As an iatrogenic pathological entity, CSP is one of the more serious complications of pregnancies that occur after a prior cesarean delivery. CSP is associated with life-threatening hemorrhages, uterine rupture, the risk of hysterectomy and even maternal mortality [3].

As of 2012, more than 30 treatment methods are reported to be used in managing CSP [4]. Several successful interventions has been reported in recent years, including methotrexate (MTX) administration [5], ultrasound-guided local administration of embryocides [6], uterine artery embolization (UAE), laparoscopic and

hysteroscopy removal [7,8], and transvaginal hysterotomy [9]. Since the first report of transvaginal hysterotomy for CSP [10], there have been several case reports on the outcome of this therapy [11–14]. Because of the rarity of CSP, little is known about outcome and safety of transvaginal hysterotomy and UAE. It is reported that these two methods are safe and effective uterine preservation treatment of CSP [15–17]. However, some physicians are not ready to recommend UAE as a first-choice treatment for women who wish to be pregnant again because some literatures have shown a negative effect of this treatment on fertility and ovarian function [18,19]. Hardeman et al. reported that two years after UAE procedures, secondary amenorrhea was observed in 5% of CSP patients, and finally led to endometrial necrosis [20]. Many studies have evaluated only the efficacy of various therapeutic methods, but few have compared such therapies or their outcomes, such as post-operation menstruation. Additional research is urgently needed to allow gynecologists and patients to make appropriate decisions.

This study aimed to better characterize the outcome of UAE and uterine curettage. We analyzed the feasibility, efficacy, safety and outcomes in contemporaneous patient cohorts who received

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embolization combined with uterine curettage and transvaginal hysterotomy.

Materials and Methods

Patients

This cohort study analyzed data from patients who were diagnosed and treated for CSP at Shanghai First Maternity & Infant Hospital affiliated with Tongji University, China, between July 16, 2014 and January 22, 2016. All patients had the following parameters recorded at baseline: age, age of pregnancy at time of cesarean section, number of cesarean deliveries, menstrual conditions, and clinical characteristics before treatment, such as serum β -hCG and hemoglobin levels, and myometrial thickness. All patients also completed a self-assessment of menstrual flow and a pictorial chart to assess any menstrual blood loss that occurred prior to the procedure (as determined by patient memory) [21,22].

This research was approved by the Ethics Committee of Shanghai First Maternity & Infant Hospital. The type of treatment provided was based on the women's informed consent. All enrolled patients had no contraindications for transvaginal hysterotomy or UAE, including organ failure, blood disease, active infection or known allergy to the contrast agent.

Diagnostic Criteria of CSP

CSP patients were diagnosed by a detailed history, including gravidity, parity, and cesarean section history, physical examination, serum β -hCG and ultrasonography diagnosis. The criteria for diagnosis by ultrasonography was satisfied the following: (1) an empty uterine cavity and endocervical canal; (2) detection of the placenta and/or a gestational sac embedded in the hysterotomy scar; (3) in early gestations (≤ 8 weeks), a triangular gestational sac that fills the niche of the scar; at ≥ 8 postmenstrual weeks this shape may become rounded or even oval; (4) a thin (1–3 mm) or absent myometrial layer between the gestational sac and the bladder; (5) a closed and empty cervical canal; (6) the presence of the gestational sac with or without a fetal pole or heart activity; and (7) the presence of a rich vascular pattern at or in the area of scar [23]. All patients had taken Magnetic Resonance Imaging (MRI) to clarify the diagnosis (Fig. 1). Surgical tissues were identified by histopathology examinations.

UAE Combined with Uterine Curettage

All embolizations were performed by an experienced radiologist. After sterilizing the groin, UAE was performed through a unilateral femoral artery using the Seldinger technique with local anesthesia [24]. Both uterine arteries were embolized with 1 mm

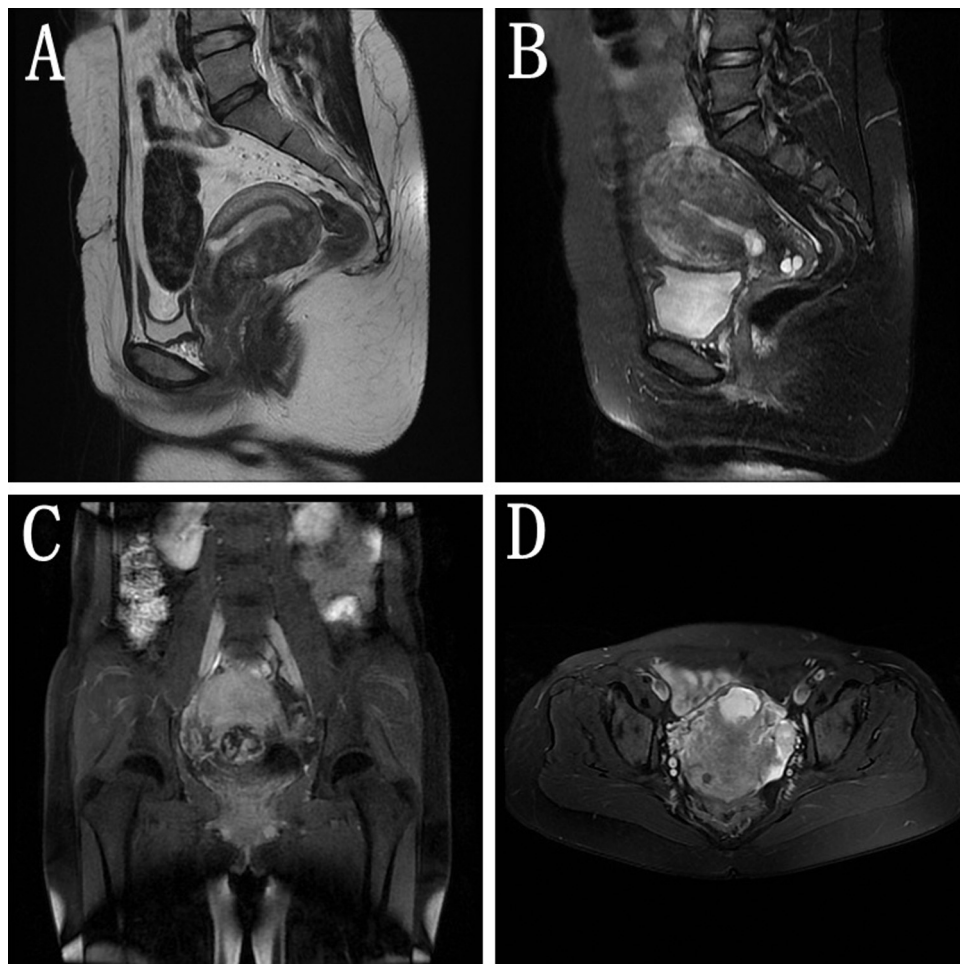


Fig. 1. A~D MRI images of cesarean scar pregnancy.

A – Sagittal view on T2

B – Sagittal view on T2

C – Coronal view on T1

D – Horizontal view on T2.

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