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Cesarean Scar Ectopic Pregnancy: Three Cases Illustrating Divergent Treatment Options Where No Standard Management Exists

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Abstract

Background: Cesarean scar ectopic pregnancies are located within the myometrium of a previous cesarean scar. Although rare, the incidence is increasing and should be considered when evaluating ectopic pregnancies. Management for cesarean scar ectopic pregnancies varies from conservative to surgical, and currently, there is no consensus regarding the optimal management of patients with cesarean scar ectopic pregnancies.

Cases: We managed three patients with cesarean scar ectopic pregnancies within an eight-month period. The first case was treated conservatively with methotrexate and uterine artery embolization. The second and third cases were treated via laparotomy with hysterotomy and laparoscopic assisted vaginal hysterectomy, respectively.

Conclusion: The proper management of patients with cesarean scar ectopic pregnancies is a challenge due to the rare occurrence of the condition. In our experience, we have found that the benefits to a surgical approach include a shorter hospitalization and a lower risk of uterine rupture during treatment.

Keywords: Cesarean scar pregnancy; Ectopic pregnancy; Treatment

Cesarean section is the most commonly performed surgery in the U.S. today. A potential complication of cesarean section is cesarean scar ectopic pregnancy in subsequent pregnancies. In this report, we summarize our experience with three patients with cesarean scar ectopic pregnancies and make recommendations for managing affected patients.

Case 1

A 24-year-old female, para 1021, presented to a nearby Emergency Department complaining of vaginal bleeding. Her obstetric history was remarkable for one cesarean delivery and two elective terminations of pregnancy. Her serum β-hCG was 52,622 mIU/mL. A transvaginal ultrasound demonstrated a seven-week embryo with cardiac activity initially thought to be in the left tube (Figure 1). An exploratory laparotomy was performed and no ectopic pregnancy was identified. Post-operatively, a repeat transvaginal ultrasound showed a viable pregnancy along the left side of the uterus; a cesarean scar ectopic pregnancy could not be excluded. The patient was transferred to our institution for further care.

A pelvic MRI was performed and a cervical versus cesarean scar ectopic pregnancy was suspected (Figure 2). The patient desired future fertility. She was hospitalized and treated with multi dose methotrexate. A subsequent pelvic ultrasound showed the pregnancy was located in the patient's cesarean scar. Due to plateauing hCG values and concern for rupture, the patient underwent bilateral uterine artery embolization and, subsequently, intra-amniotic injection of methotrexate. The patient remained stable and was discharged on hospital day 27. Her β-hCG level was <5 mIU/mL within 8 weeks of discharge from the hospital.

Case 2

A 34-year-old female, para 2212 presented to our hospital complaining of vaginal bleeding and suprapubic pain. Her obstetric history was remarkable for four cesarean deliveries and one

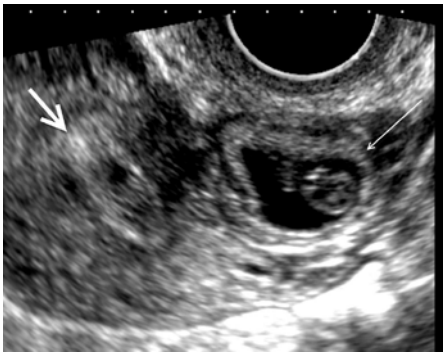

Figure 1: Sagittal ultrasound view of scar ectopic (thin arrow), distinct from endometrial cavity (thick arrow).

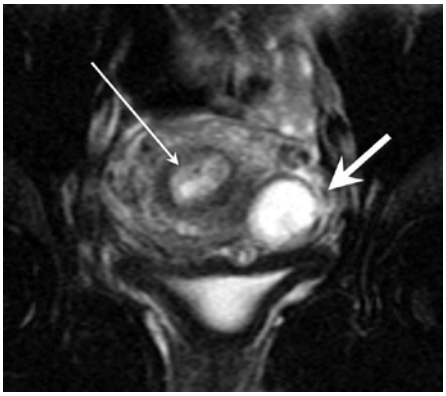

Figure 2: Coronal MRI T2 view of scar ectopic (thick arrow), distinct from endometrial cavity (thin arrow).

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spontaneous abortion. The patient's serum β-hCG level was 83, 665 mIU/mL. A transvaginal ultrasound showed a 4.1 x 3.1 x 2.4 cm complex mass in the left adnexa, consistent with an ectopic pregnancy. At laparoscopy, the tubes and ovaries were normal. However, the lower uterine segment was thin and ballooning; a cesarean scar ectopic pregnancy was suspected. A laparotomy was performed, and the uterus was incised over the ballooning lower uterine segment and products of conception were immediately encountered. The ectopic pregnancy was excised and the hysterotomy incision was closed in two layers. The patient had an unremarkable postoperative course.

Case 3

A 36-year-old pregnant female, para 6117, presented to our hospital for evaluation of abdominal pain and vaginal bleeding. She had undergone one prior cesarean delivery, and her serum β-hCG level was 22,211 mIU/mL. Transvaginal ultrasound showed a 37 x 31 x 26 mm mass consistent with an ectopic pregnancy in the left aspect of the patient's cesarean scar. The mass was located behind the bladder and near the left uterine artery (Figure 3). Hysterectomy was recommended since she did not desire future fertility and because of the location of the ectopic. The patient opted for medical management and received intramuscular methotrexate.

Despite an appropriate decline in β-hCG level, the patient requested definitive surgical treatment for her ectopic pregnancy. She underwent an uncomplicated laparoscopic-assisted vaginal hysterectomy on hospital day 11. Findings at surgery included an ectopic pregnancy in the left side of the lower uterine segment; the fallopian tubes both appeared normal. The patient was discharged home on postoperative day 1, and her postoperative course was unremarkable.

Comments

Cesarean scar ectopic pregnancies are abnormal gestations in which the pregnancy implants within the myometrium of a previous cesarean section scar. The incidence of cesarean scar ectopics is estimated to range from 1:1,800 to 1:2,200 pregnancies; such pregnancies account for 6% of all ectopics [1,2]. Multiple treatment options for cesarean scar ectopic pregnancies have been reported; however, the optimal management of affected patients is uncertain [3-8].

Treatment options for cesarean scar ectopic pregnancies include expectant management, systemic methotrexate therapy, uterine artery embolization, local injection of embryocides, aspiration of the gestational sac, dilatation and curettage, hysteroscopy, laparoscopy, laparotomy, or combinations of these interventions [3-8]. Currently, no one treatment option for cesarean scar ectopic pregnancies has been found to be superior with regard to treatment success and future pregnancy outcome. Among surgical treatment options, dilation and curettage has previously not been recommended. More than one review on cesarean scar ectopic pregnancies has shown that D&C has a high failure rate because of the inability to evacuate all of the ectopic tissue and due to the increased risk of uterine rupture and subsequent hemorrhage [3-6]. However, more recent reports have suggested that D&C should be considered for patients presenting at less than seven weeks gestation [9,10].

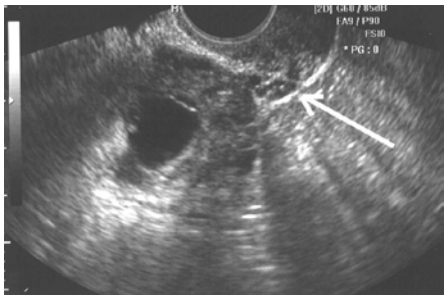

Figure 3: Sagittal view of scar ectopic located in the left aspect of the cesarean scar in close proximity to uterine vessels (arrow).

The objectives of treatment of affected patients include resolution of the cesarean scar ectopic pregnancies prior to rupture and preservation of future fertility if desired. The clinical presentation of the patient, the gestational age at presentation, β-hCG level, size of the ectopic and known contraindications to methotrexate all can help guide treatment decisions.

Based on our experience, we believe patients with cesarean scar ectopic pregnancies should be managed surgically. Our first patient was treated conservatively, had multiple interventions, an extended hospital stay, and was at risk of uterine rupture during treatment. In comparison, our second patient underwent a definitive surgical procedure, had a shorter hospital stay, and was not at risk for uterine rupture during treatment. Our third patient eventually underwent a definitive surgical procedure which limited her hospital stay and which eliminated her risk of a cesarean scar ectopic in the future.

In conclusion, the optimal management of patients with cesarean scar ectopic pregnancies is uncertain. The incidence of such pregnancies is increasing, and practitioners should maintain a high index of suspicion for cesarean scar ectopic pregnancies when evaluating a patient with a pregnancy of unknown location that has had a prior cesarean section. In our opinion, the benefits of immediate surgical intervention outweigh the benefits of conservative treatment. As suggested by Michener and Dickinson, a registry of patients with cesarean scar ectopic pregnancies which includes subsequent pregnancy outcomes may help determine optimal mode of treatment [6].

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