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Short communication

Surgical management of cesarean scar pregnancies – A single tertiary experience

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ABSTRACT

Cesarean scar pregnancies (CSPs) are a rare complication of previous cesarean deliveries. As cesarean section rates continue to increase worldwide, the incidence of CSPs is likely to rise as well. The diagnosis and management of CSPs pose challenging problems to clinicians. Early accurate diagnosis is crucial, as CSP is a life-threatening emergency that can lead to potentially catastrophic consequences such as uterine rupture, hemorrhage, loss of fertility and maternal death. There is no general consensus, however, regarding the best means of management. Various case reports and case series have reported successful outcomes with medical treatment, surgical intervention, interventional radiology, as well as a combination of methods. We present a case series of CSPs managed in our center, a tertiary obstetrics and gynecology hospital. All were treated primarily by conservative and fertility-sparing surgical methods. We have also included a short review of the current literature on this rare but important condition.

Introduction

Implantation of an ectopic pregnancy within a previous cesarean section scar is a rare phenomenon. The exact incidence of cesarean scar pregnancies (CSPs) is reported to be 1 in 1,800–2,216, pregnancies[1,2] but is most likely increasing due to the increased number of cesarean sections (CSs) being performed. In our center, we deliver more than 12,000 babies a year, of which up to 30% are delivered by cesarean section.

Current literature does not seem to show any general consensus for the treatment of CSPs.[1–11] The only conclusion based on case reports and case series suggests that there is little or no role for a conservative "do-nothing" approach to CSPs.[4] Early diagnosis and treatment are important to prevent the possibly catastrophic consequences that may result from this rare but significant late complication of cesarean section. These include, but are not limited to, uterine rupture and/or hysterectomy, with significant morbidity resulting from loss of fertility, disseminated intravascular coagulation, and also maternal mortality.[3,5]

KK Women's and Children's Hospital in Singapore is a tertiary obstetrics and gynecology hospital that performs more than 1,500 laparoscopic operations each year. We have a dedicated "minimally invasive surgery" department with senior staff trained in level 3 laparoscopic and hysteroscopic procedures. The primary aim of our study is to present our surgical experience in the management of CSPs, mainly by laparoscopy, hysteroscopy, suction curettage, and a combination of these methods, in our center within a specified period. Our secondary aim is to review the current literature available for optimal management of CSPs.

Materials and methods

We conducted a retrospective review of the CSPs diagnosed and treated surgically in our center during the period of May 2012 to June 2013. All cases were diagnosed on transvaginal ultrasound by a senior radiologist and confirmed intraoperatively. They were all co-managed by the primary gynecology team and a specialist gyne-laparoscopist in our hospital's minimally invasive surgery unit. Conservative surgical methods – either laparoscopy or hysteroscopy, suction curettage under ultrasound guidance, or a combination of these methods, without requiring laparotomy or hysterectomy – were employed in the management of all our patients.

Conflicts of interest: The authors declare no conflicts of interest.

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Fig. 1. Case 2. Repeated transvaginal scan 3 days after initial presentation (as the patient declined treatment initially) shows a gestational sac with yolk sac and fetal pole at the site of the previous uterine scar.

Data were collected in specially designed datasheets that included information pertaining to age, parity, symptoms at first presentation, previous uterine surgery or cesarean section, seniority of the surgeon performing previous cesarean section, maternal serum *human chorionic gonadotropin* (hCG) levels, and features of scan findings along with follow up details (Figs. 1–5).

A literature search was also performed to look at similar case studies and case series reviews that discussed methods of management of CSPs, particularly surgical methods.

Results and case summaries

Clinical details of the patients are summarized in Table 1. Serum hCG levels are expressed in IU/L. Cases 2 and 4, which had a more complicated course of treatment, are described in more detail.

Case 2

A 30-year-old Chinese woman G3P1 (1 previous 1st trimester abortion and 1 previous Cesarean section for failure to progress 13 months earlier) presented at 5 weeks' amenorrhea having had vaginal spotting for 1 week. She developed mild abdominal pain. She was referred from her private obstetrician, who noted no intrauterine gestational sac despite ßhCG levels rising from 1,574 IU/L to 4,357 IU/L in 48 hours. Clinical examination was unremarkable. A transvaginal scan showed a 6 mm × 5 mm × 5 mm scar ectopic pregnancy.

She was offered intramuscular methotrexate but the patient initially declined treatment and wanted to seek a second opinion at another center. She returned 3 days later. She was asymptomatic. A transvaginal scan was repeated, which revealed a larger sac in the same area measuring 16 mm × 7 mm × 5 mm (Fig. 1). A yolk sac and fetal pole were now visualized. No cardiac activity was noted. Maternal serum ßhCG had risen to 31,153 IU/L. She was re-offered systemic methotrexate and informed of the possibility of failure of medical therapy and need for either a repeat dose of methotrexate or surgical intervention. The option of laparoscopic-guided suction curettage with possible excision of the ectopic pregnancy and uterine suturing was discussed with the patient. She was given methotrexate initially, but eventually underwent laparoscopic-guided suction curettage and excision of the CSP 2 days later (Fig. 2).

Intraoperative findings were that of an 8-week sized uterus that was very anteverted and plastered to the anterior abdominal wall along the lower and mid segment. Both tubes and ovaries appeared normal. There was a small amount of hemoperitoneum, estimated to be 50 mL. There was an area of deficiency, 3 cm × 2 cm, noted at the anterior lower segment with products of conception (POC) seen protruding out of the previous cesarean scar. Adhesiolysis was performed to free up the anterior wall of the uterus. POC were then removed from the area of perforation over the previous cesarean

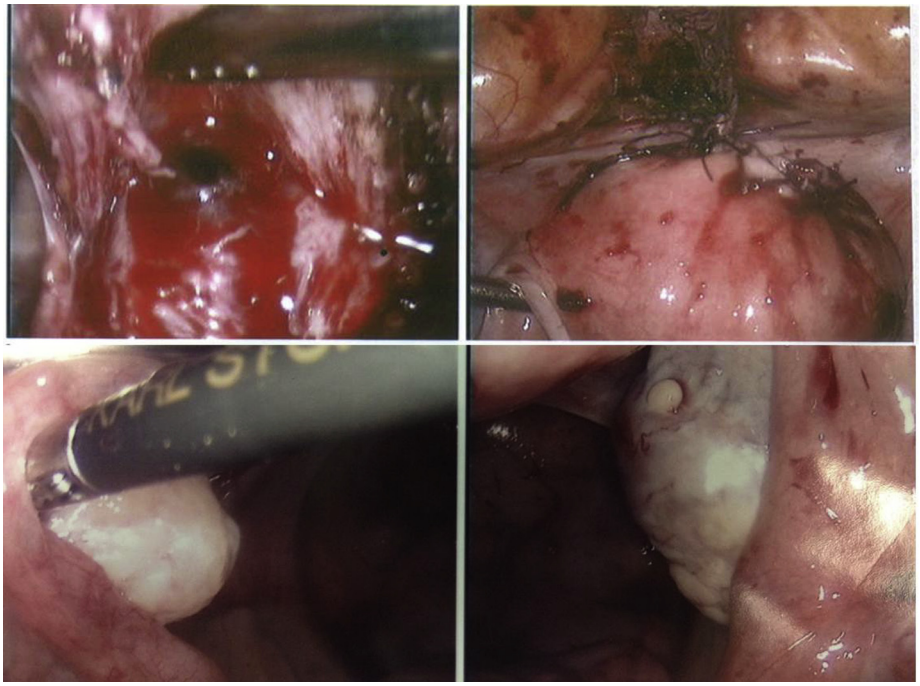

Fig. 2. Case 2. Laparoscopic images showing excision of the cesarean scar pregnancy and the sutured defect on the anterior uterine wall. Interrupted Vicryl-0 sutures were used for closure of the defect. Bilateral tubes and ovaries appeared normal.