

Medical management of early pregnancy failure with misoprostol with rupture of the cesarean section scar pregnancy

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Summary

Purpose: To report a case of ruptured uterus in the first trimester with the use of misoprostol for early pregnancy failure in a woman with unrecognized cesarean section scar pregnancy. **Case:** A 27-year-old woman, gravida 5 para 3+1, presented with abdominal pain and vaginal bleeding. Transvaginal ultrasonography revealed a fetus without fetal heart activity at nine weeks gestation, making the diagnosis of early pregnancy failure. Her previous deliveries were by cesarean section. She was managed medically with misoprostol. Seven hours after misoprostol administration, she developed sudden onset of severe abdominal pain. Repeat transvaginal ultrasonography diagnosed cesarean section scar pregnancy. Laparotomy revealed hemoperitoneum with rupture of cesarean section scar pregnancy. Subtotal hysterectomy was performed. **Conclusions:** Failure to recognize cesarean section scar pregnancy can result in a ruptured uterus in the first trimester with the use of misoprostol for early pregnancy failure. Increased awareness of the unexpected consequences of cesarean section is of paramount importance.

Key words: Misoprostol; Cesarean section scar pregnancy; Rupture uterus.

Introduction

Early pregnancy loss is defined as a non-viable, intrauterine pregnancy with either an empty gestational sac or a gestational sac containing an embryo or fetus without fetal heart activity within the first 12 weeks of gestation [1]. It is one of the most common complications of pregnancy, occurring in 15% of clinically recognized pregnancies. Management options include expectant management, medical treatment, and surgical evacuation [2]. Misoprostol regimens are widely used for medical treatment. Pre-treatment with mifepristone does not increase the success rate of early pregnancy failure treatment; accordingly, current clinical guidelines from the American College of Obstetricians and Gynecologists (ACOG), National Institute for Health and Care Excellence (NICE), and the International Federation of Gynecology and Obstetrics (FIGO) recommend the use of misoprostol-only regimens [1-3]. The guidelines emphasize the importance of ruling out ectopic pregnancy, infection, hemorrhage, severe anemia, bleeding disorders, and medication allergy before treating with misoprostol. Previous cesarean section is not listed as a contraindication.

Cesarean section scar pregnancy, where a gestational sac implants in the scar or the niche of a previous cesarean delivery [4], is a rare (occurring in about one in 2,000 pregnancies of women with a prior cesarean delivery) [5] but

life-threatening complication of cesarean section. It is by definition, not a classical ectopic pregnancy like tubal pregnancy. An increase in reported cases may be due to the increased cesarean section rate, which exceeds 40% in some countries [6], or to improved diagnosis using transvaginal ultrasonography, which is the standard of practice for diagnosis of cesarean scar pregnancies in the first trimester [7]. The authors report a case of rupture uterus in the first trimester with the use of misoprostol for early pregnancy failure in a multiparous woman with cesarean section pregnancy.

Case Report

A 27-year-old woman, gravida 5 para 3+1, presented with abdominal pain and vaginal bleeding, and her vital signs were stable. Vaginal examination revealed closed cervix with minimal bleeding. Transvaginal ultrasonography revealed a fetus without fetal heart activity at nine weeks gestation, supporting the diagnosis of early pregnancy failure. Her previous deliveries were by cesarean section. After admission to the hospital, she was given misoprostol 400 µg orally and 400 µg vaginally per hospital protocol. Seven hours after misoprostol administration, she developed sudden onset severe abdominal pain. Repeat transvaginal ultrasonography showed cesarean section scar pregnancy with thinning of the myometrium between the gestational sac and the bladder (Figure 1). Hypotension and acute hemoglobin decrease prompted an emergency laparotomy. Hemoperitoneum with rupture of cesarean section scar pregnancy was found (Figure 2).

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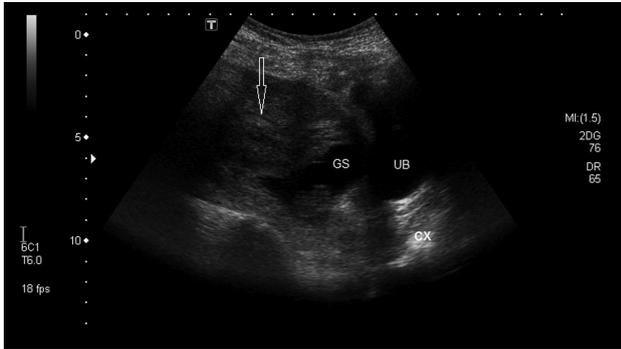


Figure 1. — A gestational sac (GS) is shown in the anterior lower uterine segment at the location of the uterine scar, empty endometrial (arrow) and cervical canals, and thinning of the myometrium between the gestational sac and bladder (UB).

Subtotal hysterectomy was performed. The postoperative course was uneventful and she was discharged home in good general condition.

Discussion

In a meta-analysis of 59 articles, transvaginal ultrasonography accurately diagnosed cesarean scar pregnancies in 94 of 111 cases, with a sensitivity of 84.6% (95% confidence interval 76.3%, 90.5%) [8]. Sonographic features of a cesarean scar pregnancy in the first trimester include an empty uterus and cervical canal, a gestational sac within the anterior portion of the lower uterine segment at the presumed site of the cesarean scar, and a thinned or absent myometrium between the gestational sac and urinary bladder (< five mm in most cases) [7]. Color flow Doppler imaging can show perfusion around the gestational sac, and reveal if trophoblastic tissue has invaded through the scar into the urinary bladder.

Distinguishing a pregnancy implanted on a cesarean scar from a cervical ectopic pregnancy or from a pregnancy failure or miscarriage in progress can be challenging. On ultrasonography, a pregnancy implanted on a cesarean scar can be differentiated by its location in the anterior lower uterine segment, with thinning of the anterior myometrium, rather than in the central location of failed and cervical ectopic pregnancies within the cervical canal, with normal thickness of the overlying anterior myometrium. Short-interval follow-up ultrasound of a miscarriage will confirm that the gestational sac is not fixed in location and not growing in size.

There is a paucity of guidance on the management of known cesarean section pregnancy. In the first trimester expectant management, sonographically-guided potassium chloride or methotrexate injection into the gestational sac, systemic methotrexate, uterine artery embolization, dilation and curettage, hysteroscopic or laparoscopic resec-

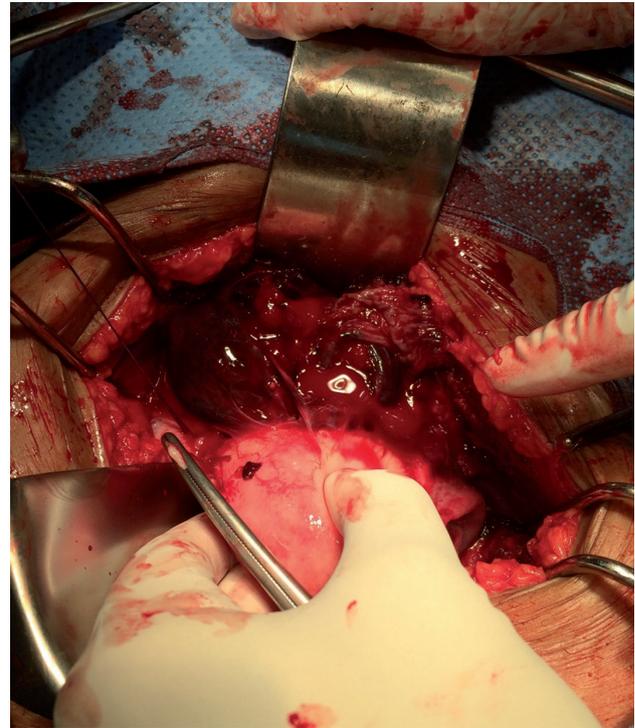


Figure 2. — Rupture at the previous cesarean section.

tion, and hysterectomy depending on the desire of the woman to keep her fertility potential, and experience of the physician, have been reported [4, 9, 10]. A series of 19 patients were successfully treated with a combination of local and systemic methotrexate injections in a simple office procedure [11].

There is inconsistency in the literature regarding the misoprostol dose for early pregnancy failure in the first trimester. FIGO recommends vaginal administration of 800 μg of misoprostol every three hours for a maximum of two doses, or sublingual administration of 600 μg every three hours for a maximum of two doses [3]. In contrast, NICE recommends a single 800- μg vaginal dose, but allows oral administration based on the woman's preference [2]. A study of 488 women who received vaginal misoprostol for early pregnancy failure included 78 with a history of cesarean section or myomectomy [12]. An initial dose of 800 μg was repeated in two days if expulsion was not confirmed. No uterine ruptures occurred in the entire cohort.

The present case documents the occurrence of rupture uterus in the first trimester with the use of misoprostol in a woman with cesarean section pregnancy. Increased awareness of the unexpected consequences of cesarean section is of paramount importance, and ruling out cesarean section pregnancy in cases of early pregnancy failure, being considered for misoprostol treatment, is warranted.

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