



## CASE REPORT / OLGU SUNUMU

# Local treatment with methotrexate of cesarean scar pregnancy: A case report

Sezeryan skar gebeliğin metotreksat ile lokal tedavisi: Bir olgu sunumu

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### Abstract

Cesarean scar pregnancy, is the implantation of a gestational sac within the myometrium at the side of previous cesarean section scar, is a rare type of ectopic pregnancy. Ultrasonography is the first and most important diagnostic method of this condition. Increased suspicion with widespread use of ultrasound lead to the recognition of most cases of Cesarean scar pregnancy in early pregnancy. This allows for rapid interventions and preservation of the uterus and fertility. The use of conservative treatments, including medical treatment, especially with methotrexate, saves from surgeries such as hysterectomy and preserves women's fertility. In this study, we presented a case of cesarean scar pregnancy which was successfully treated with transvaginal ultrasound-guided injection of methotrexate.

**Keywords:** Analgesia; neonate; ultrasonography, interventional; tracheoesophageal fistula.

### Öz

Sezeryen skar gebeliği, önceki sezeryen skarının yanında myometrium içine gebelik kesesinin yerleşmesidir, nadir görülen bir dış gebelik türüdür. Ultrason ilk ve en önemli tanı yöntemidir. Artan şüphe ve ultrasonun yaygın kullanımı çoğu sezeryen skar ektopik gebelik vakasının erken gebelik döneminde tanınmasına neden olur. Bu da hızlı müdahalelere, uterusun ve fertilitenin korunmasına olanak sağlar. Metotreksat ile medikal tedaviyi de içeren konservatif tedavilerin kullanılması, histerektomi gibi ameliyatlardan kurtarır ve kadınların fertilitelerini korur. Bu yazıda 37 yaşında daha önce 3 sezeryan operasyonu geçirmiş sezeryen skar ektopik gebeliği olan hastanın transvajinal ultrason rehberliğinde metotreksat enjeksiyonu ile lokal olarak tedavisi olan olgu sunulmuştur.

**Anahtar kelimeler:** Skar gebelik, metotreksat, sezeryan, ultrason

## INTRODUCTION

Cesarean scar pregnancy is a rare type of ectopic pregnancy, which is diagnosed as developing pregnancy implanted in the myometrium at the side of a previous cesarean section scar<sup>1</sup>. This phenomenon occurs about 0.15% in women with a previous cesarean operation<sup>2</sup>. However, it is seen more common due to the increase in the number of cesarean sections and accounts for 6.1% of all ectopic pregnancies<sup>2</sup>. Other causes of the increase include dilatation and evacuation, myomectomy, operative hysterectomy and more improvement in diagnostic

methods<sup>3</sup>. If the condition is not managed in a timely manner, it leads to significant morbidity and mortality. Continuing pregnancies to high weeks, may cause complications such as placenta accreta and uterine rupture.

Clinical high suspicion of CSP in patients who have had previous uterine surgery and early diagnosis by transvaginal ultrasonography may help initiation and success of conservative treatment, prevention of complications, and preservation of uterus and fertility<sup>4</sup>.

There is no consensus on the treatment protocol for CSP. Various treatment options such as dilation and

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curettage, uterine artery embolization, laparotomy or laparoscopic excision, local or systemic methotrexate, local potassium chlorid, hysteroscopy, hysterectomy have been reported, are depending on the gestational age and clinical characteristics at the time of admission<sup>5</sup>.

In our case, the patient who admitted with the complaint of amenorrhea was diagnosed with scar ectopic pregnancy and was successfully treated without complications with transvaginal ultrasound-guided methotrexate injection without complications.

## CASE

A 37-year-old female patient with gravida 6 parity 3 was admitted to our outpatient clinic with the complaint of amenorrhea. The case had a history of cesarean section fifteen, eight and four years ago, and had undergone salpingectomy for ectopic pregnancy 2 years ago. In the transvaginal ultrasound performed on the same day, crown to rump length (CRL) was measured as 6 mm and was consistent with 6 weeks and 3 days, gestational sac located at the lower uterine segment and at the previous cesarean section scar with a live embryo (figure I). Due to the presence of the live embryo 50 mg/m<sup>2</sup> methotrexate was injected inside the gestational sac with transvaginal ultrasound-guided puncture. A 20 Gauge Cook Medical needle was used. Fetal cardiac activity turned negative after methotrexate using and no bleeding was seen. In the ultrasound examination was performed 3 days after the intracavitary methotrexate application, the presence of a cystic image with irregular borders at the lower uterine segment, measuring 6×3 mm without an embryo. The weekly b-HGG level gradually decreased and the uterus became normal in the control performed 1 month later (figure II).



**Figure 1.** Transvaginal ultrasound shows a gestational sac at the site of the lower uterine segment with an empty uterine cavity.



**Figure 2.** 1 month after treatment with methotrexate transvaginal ultrasound shows normal uterus appearance

## DISCUSSION

Cesarean scar pregnancy (CSP) is a life-threatening condition that, if not detected early, can result high morbidity and mortality<sup>6</sup>. Among all types of ectopic pregnancies, scar ectopic pregnancy is one of the rarest types. The first case was described in 1978 by Larson and Salomon<sup>7</sup>. It occurs as a result of the implantation of the gestational sac into the myometrium and fibrous tissues of the previous uterine scar. CSP tends to be more aggressive in the first and second trimesters due to the risk of bleeding and uterine rupture<sup>8</sup>. The incidence of CSP is increasing all over the world, in line with the increasing trend in cesarean rates<sup>9</sup>. Therefore, the possibility of scar ectopic pregnancy should be included as a distant complication when explaining the complications of cesarean to the patient<sup>10</sup>.

There are two types of CSP, depending on the depth of invasion. The first type implants grow away from the serosal lining and into the uterine cavity<sup>11</sup>. In the second type, locates deep within the scar tissue and progresses into the serosal layer and possibly into the bladder or abdominal cavity. This type is very dangerous and may lead uterine rupture and hemorrhage<sup>12</sup>.

US is the first and most important diagnostic method for diagnosis. Increasing suspicion and the widespread use of us have led to the recognition of

most cases of CSP in early pregnancy, thus ensuring that the uterus and fertility can be preserved with rapid intervention. It also allows differential diagnosis with abortion, molar pregnancy and cervical ectopic pregnancy. Transvaginal ultrasound may allow early diagnosis of this disease before tragic consequences as uterine rupture or excessive bleeding<sup>13</sup>.

There is still no consensus on the best treatment for cesarean scar pregnancy. The treatment of CSP depends on the clinical condition of the patient. If the patient has massive bleeding or uterine rupture, immediate embolization or laparotomy followed by scar excision or hysterectomy is indicated. The desire to preserve fertility is very important for patients. Medical treatment is primarily indicated in hemodynamically stable patients, with the aim of preserving fertility by avoiding laparotomy. However, close surveillance with the  $\beta$ -HCG level is essential to monitor response. Medical management includes local or systemic use of methotrexate, with or without the use of potassium chloride. After confirming the diagnosis, the injection of potassium chloride causes fetal death immediately and prevents further invasion and proliferation of the villi. Seow et al. have previously advocated the use of ultrasound-guided methotrexate injection in the successful management of scar ectopic<sup>14</sup>. A lower  $\beta$ -HCG value and a myometrial thickness greater than 2 mm between the gestational sac and bladder seem to increase the success of methotrexate treatment<sup>15</sup>. However, no  $\beta$ -HCG value was determined for this treatment. The success of medical therapy is monitored by serial  $\beta$ -HCG values, and follow-up is recommended until the value reaches  $< 5$  mIU/ml<sup>16</sup>. In our case, we caused fetal death without the need for KCL by administering local methotrexate with ultrasound guidance into the fetal sac. In the study of Aydeniz et al., which included 5 cases, they terminated the pregnancy by giving intracavitary methotrexate to each patient<sup>17</sup> and follow-up b-hcg levels with us control similar to our study. Local treatments are can be better than systemic treatment because it has fewer side effects.

In conclusion, CSP is a rare, life-threatening obstetric condition which is diagnosed early with the help of us. Early diagnosis and treatment are very important to prevent serious complications. The treatment is not completely clear and the first choice is medical treatment in hemodynamically stable patients. Invasive procedures such as laparotomy or embolization can be applied in patients with acute

bleeding. A follow-up protocol with a well-defined diagnostic criteria and defined management can be helpful in the treatment of this challenging ectopic pregnancy.

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