

# Repeated cesarean scar pregnancy – Case report

I. Bolanča<sup>1</sup>, D. Butorac<sup>1</sup>, D. Eljuga<sup>1</sup>, I. Djaković<sup>1</sup>, J. Ezgeta<sup>2</sup>, K. Kuna<sup>1</sup>, N. Tučkar<sup>1</sup>, Z. Kraljević<sup>1</sup>

<sup>1</sup> Department of Obstetrics and Gynecology, University hospital "Sestre milosrdnice", Zagreb

<sup>2</sup> Gynecology Outpatient Clinic dr. Jozo Ezgeta, Zagreb (Croatia)

## Summary

Cesarean scar pregnancy (CSP) is a rare location of an ectopic pregnancy implanted within a scar from previous cesarean section, separated from the endometrial cavity. The prevalence ranges from 1:1,800 to 1:2,226 pregnancies. It is a potential life-threatening condition, and if misdiagnosed, can cause serious maternal morbidity from uterine rupture with massive hemorrhage and even death. Until now, no universal treatment guidelines have been established, with treatment options ranging from systemic or local injection of methotrexate (MTX), suction curettage under ultrasound control to surgical treatment, including hysteroscopy and wedge resection of the ectopic pregnancy, via laparotomy or laparoscopy. The authors present a case of a 42-year old woman with two consecutive CSPs. First CSP was unsuccessfully treated conservatively, followed by ultrasound guided vacuum aspiration of the uterine cavity. Second CSP was treated by laparotomy and a wedge excision of a CSP and repair of a scar with interrupted sutures. The authors also discuss diagnostic pitfalls and treatment modalities.

**Key words:** Ectopic pregnancy; Uterine scar pregnancy; Cesarean section.

## Introduction

Cesarean scar pregnancy (CSP) is a rare location of an ectopic pregnancy implanted within a scar from previous cesarean section, separated from the endometrial cavity. The first report was dated in 1978 [1] and reports are increasing exponentially ever since. The prevalence is ranging from 1:1,800 [2] to 1:2,226 [3] pregnancies, estimated on relatively small samples from single centers. With cesarean section rates rising worldwide, one can assume that this entity will become more common. It is a potential life-threatening condition, and if misdiagnosed, can cause serious maternal morbidity from uterine rupture with massive hemorrhage and even death. Until now, no universal treatment guidelines have been established.

The authors report a case of a patient with two consecutive CSP which is by their knowledge unreported in the literature. They also report different treatment regimens, both with good short-term outcomes, however, without later successful ongoing pregnancy.

## Case Report

The authors present a case of a 42-year old woman (gravida 6, para 2), with history of two elective isthmic transverse cesarean sections and four missed abortions. The first cesarean delivery was performed due to breech presentation, and second due to previous one. She presented in six weeks of pregnancy with vaginal spotting. Her serum  $\beta$  chorionic gonadotropin ( $\beta$ HCG) level was 15,812 and at follow-up increased to 17,475 IU/L. Transvaginal ultrasound showed an embryonic pregnancy located within the lower uterine segment in a scar of previous cesarean section. An expectant management was initiated, however, the level of  $\beta$ HCG

was slowly rising. Therefore, the pregnancy was terminated via vacuum aspiration of uterine cavity guided by transabdominal ultrasound. Her  $\beta$ HCG levels were monitored until they returned to a normal level 14 days postoperatively. Five months later she referred in eight weeks of pregnancy. Transvaginal ultrasound showed a gestational sac within a scar of a previous cesarean section with positive fetal heart-beat (crown-rump length 11 mm). Magnetic resonance showed round lesion with high signal in T2-weighted image measuring 14×9 mm in a projection of uterine scar (Figure 1). Two days later, transvaginal ultrasound showed an absence of an embryonic vitality. Due to recurrence of ectopic pregnancy in a cesarean scar, the authors decided to offer a patient a surgical correction of a uterine scar. Laparotomy was performed, with wedge excision of a CSP and repair of a scar with interrupted sutures. Her  $\beta$ HCG levels were monitored until they returned to a normal level 18 days postoperatively. Two years later she referred again in six weeks of pregnancy with vital intrauterine pregnancy (crown-rump length five mm). One week later she referred with heavy vaginal bleeding. Transvaginal ultrasound showed complete abortion.

## Discussion

CSP is a rare location of an ectopic pregnancy implanted within a scar from previous cesarean section, separated from the endometrial cavity. The exact cause and mechanism of CSPs are not well understood. The most probable mechanism that could explain scar implantation is invasion of the myometrium through a microtubular tract between the cesarean section scar and the endometrial canal [4]. The incidence of CSP seems to be increasing lately, possibly because of the increased use of cesarean section and more wide-spread use of transvagi-



Figure 1. — T2-weighted MRI.

nal ultrasound scan as a diagnostic method. Wang *et al.* [5] proposed useful diagnostic criteria for CSP by using transvaginal ultrasonography. It is still uncertain whether the risk of CSP is related to the number of prior cesarean sections. Some authors have reported that between 50% and 72% of CSPs occur after two or more prior cesarean sections [6]. CSP is a condition with a possible long term morbidity [7] and even a life-threatening event. There are still doubts about treatment options, ranging from expectant management [8] to surgical approach [9]. The prognosis for uneventful term pregnancy is very poor, with only anecdotal reports regarding vital term CSP with favorable fetal outcome [10]. Therefore, the current policy is to recommend termination once the proper diagnosis is made.

The non-surgical strategy seems to be the most appropriate option when the trophoblast reaches near the bladder wall. Furthermore, the proper candidates for medical management should be hemodynamically stable and pain free, with unruptured CSP less than eight weeks and myometrial thickness less than two mm between the gestational sac and bladder. The medical regimens includes systemic methotrexate (MTX), local embryocides (MTX, potassium chloride or hyperosmolar glucose) or combined treatment. However, failed medical management may occur, leading to a CSP rupture and significant bleeding.

Surgical strategy includes uterine aspiration and curettage, hysteroscopy, laparoscopy, and laparotomy with hysterectomy or hysterectomy. The gestational sac is practically unreachable by curette, therefore, blind uterine curettage should be discouraged. However, some authors propose a

vacuum aspiration under ultrasound guidance under seven weeks of gestation with myometrial thickness more than 3.5 mm [11,12]. Other authors report high complication rate after this procedure, from intraoperative hemorrhage to high failure rate. Hysteroscopy is a method which allows direct visualization of gestational sac along with the vessels at the implantation site, allowing their coagulation. Other benefits include short follow-up, avoidance of toxicity of MTX, and shorter period for achieving pregnancy. The potential concern is the possibility of a bladder injury, reported after hysteroscopic approach. Deans and Abbott described a macrohematuria followed by hysteroscopic removal of CSP, resulting in a macrohematuria in one patient. However, the condition was self-limited, with no need for further treatment [13]. A promising advance is a use of laparoscopy guided hysteroscopy, especially in cases with deeper implanted CSP [14]. Laparotomy followed by wedge excision of CSP is a conventional surgery for cases with uterine rupture and has an advantage of complete removal of CSP along with simultaneous reconstruction of a scar. Vial *et al.* [15] suggested that surgical resection of the old scar and new closure should be offered even if recurrence is unlikely. Successful surgical resection of the old scar and new closure without severe side effects have been reported.

## Conclusions

The main goal in the management of CSP is the preservation of the uterus for a future fertility. However, until now, there are still no universal management guidelines.

## References

- [1] Larsen J.V., Solomon M.H.: "Pregnancy in a uterine scar sacculus—an unusual cause of postabortal haemorrhage. A case report". *S. Afr. Med. J.*, 1978, 53, 142.
- [2] Jurkovic D., Hillaby K., Woelfer B., Lawrence A., Salim R., Elson C.J.: "First-trimester diagnosis and management of pregnancies implanted into the lower uterine caesarean section scar". *Ultrasound Obstet. Gynecol.*, 2003, 21, 220.
- [3] Seow K.M., Huang L.W., Lin Y.H., Lin M.Y., Tsai Y.L., Hwang J.L.: "Caesarean scar pregnancy: issues in management". *Ultrasound Obstet. Gynecol.*, 2004, 23, 247.
- [4] Fylstra D.L.: "Ectopic pregnancy within a cesarean scar: a review". *Obstet. Gynecol. Surv.*, 2002, 57, 537.
- [5] Wang Y.L., Su T.H., Chen H.S.: "Operative laparoscopy for unruptured ectopic pregnancy in a caesarean scar". *BJOG*, 2006, 113, 1035.
- [6] Maymon R., Halperin R., Mendlovic S., Schneider D., Vaknin Z., Herman A., Pansky M.: "Ectopic pregnancies in caesarean section scars: the 8 year experience of one medical center". *Hum. Reprod.*, 2004, 19, 278.
- [7] Sinha P., Mishra M.: "Caesarean scar pregnancy: A precursor of placenta percreta/accreta". *J. Obstet. Gynaecol.*, 2012, 32, 621.
- [8] Abraham R.J., Weston M.J.: "Expectant management of a caesarean scar pregnancy". *J. Obstet. Gynaecol.*, 2012, 32, 695.
- [9] Litwicka K., Greco E.: "Caesarean scar pregnancy: a review of management options". *Curr. Opin. Obstet. Gynecol.*, 2011, 23, 415.
- [10] Ahmadi F., Moinian D., Pooransari P., Rashidi Z., Haghighi H.: "Ectopic pregnancy within a cesarean scar resulting in live birth: a case report". *Arch Iran Med.*, 2013, 16, 679.

- [11] Arslan M., Pata O., Dilek T.U., Aktas A., Aban M., Dilek S.: "Treatment of viable caesarean scar ectopic pregnancy with suction curettage". *Int. J. Gynecol. Obstet.*, 2005, 89, 163.
- [12] Wang C., Tseng C.: "Primary evacuation therapy for cesarean scar pregnancy: three new cases and review". *Ultrasound Obstet. Gynecol.*, 2006, 27, 222.
- [13] Deans R., Abbott J.: "Hysteroscopic management of cesarean scar ectopic pregnancy". *Fertil. Steril.*, 2010, 93, 1735.
- [14] Robinson J.K., Dayal M.B., Gindoff P., Frankfurter D.: "A novel surgical treatment for cesarean scar pregnancy: laparoscopically assisted operative hysteroscopy". *Fertil. Steril.*, 2009, 92, 1497.e13.
- [15] Vial Y., Petignat P., Hohlfeld P.: "Pregnancy in a Cesarean scar". *Ultrasound Obstet. Gynecol.*, 2000, 16, 592.

Address reprint requests to:  
I. BOLANČA, M.D.  
Department of Obstetrics and Gynecology  
University hospital "Sestre milosrdnice"  
Vinogradska 29, Zagreb (Croatia)  
e-mail: ivan.bolanca@kbcsm.hr