

## Caesarean Scar Pregnancy: A Case Report and the Review of Literature

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### Case Report

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**Abstract:** Caesarean scar Pregnancy (CSP) implanted in the caesarean section scar is a rare location among ectopic pregnancies that can be life-threatening. It can be classified at the same level of gravity as the placenta accreta. Hysterectomy is the gold standard treatment for massive bleeding. The diagnosis of pregnancy implanted in the caesarean section scar is a difficult diagnosis of the first trimester. It must be done as early as possible. Clinical manifestations are not specific, bleeding and pain is the most common symptoms. Endovaginal and pelvic ultrasound associated with Doppler is the first-line examination, provides optimal and panoramic vision, and studies reports of the gestational sac and its vasculature. Recent studies report the value of MRI in diagnosis because of its affinity for the study of pelvic tissue and the relationship of structures. The treatment remains non-consensual but it appears that the injection of methotrexate in situ by preferring the vaginal route is effective and not very morbid. We present here the case of a patient with CSP whose diagnosis was initially unknown.

**Keywords:** Caesarean scar Pregnancy, ectopic, methotrexate, ultrasound.

### INTRODUCTION

Caesarean section scar pregnancy (CSP) is defined as an ectopic localization pregnancy integrated into the myometrium of a previous hysterotomy scar.

Its incidence is increasing with increasing rates of caesareans. This is one of the late complications of cesarean section.

Only limited series and case reports have been found in the literature. Lack of knowledge or late diagnosis could be associated with severe morbidity such as metrorrhagia, uterine rupture and irreversible obstetric sequelae.

Diagnosis is based primarily on clinical and ultrasound data. Endovaginal and pelvic ultrasonography (2D-3D) is the first-line examination. Pulse doppler or energy study helps to clarify the diagnosis. MRI is starting to take its place more and more.

We present here the case of a patient who was admitted in a hemorrhagic context, for management of a cesarean section scar pregnancy whose diagnosis was initially unknown. We will then discuss in the light of recent literature the ultrasound diagnostic criteria available for a better diagnosis of pregnancies implanted in the caesarean section scar.

### CASE REPORT

A 38-year-old woman (gravida 3, para 2), with negative blood group A, with a BMI = 32, followed for Crohn's disease under Imurel, Spondylitis and Uveitis. It is a patient's third gesture, second with a bicatricial uterus: a cesarean in 2009 and last in 2012.

Brought on 01/02/2015 to the hospital for vaginal bleeding after taking 2 cp of cytotec\* for arrested pregnancy at 8 gestational weeks.

Following the oral intake of 2cp of Misoprostol, the patient presented on 01/02/2016 metrorrhagia of average abundance with loss of conscience, requiring a transfer by ambulance to the gynecological emergencies of the hospital where the hemococcus targets hemoglobin at 11g / dl.

At admission to the department, the examination found a conscious patient, normocardium at 90b/min, blood pressure at 80/40 mmHg, a BMI = 32. The abdomen is supple with a slight pelvic tenderness without any sign of gravity.

Gynecologically, the speculum examination confirms the uterine origin of bleeding of average abundance. The appendices have neither mass nor pain.

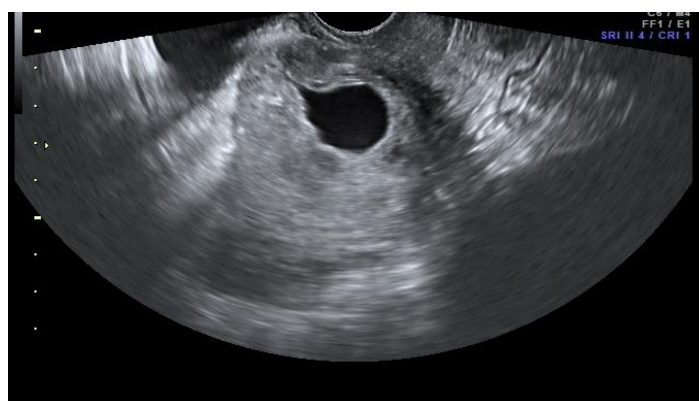
A first endovaginal echocardiography performed in the emergency department then shows a gestational sac with presence of an embryo whose LCC is estimated at 8sa without cardiac activity, low implanted, in isthmic position and facing the Caesarean section scar.

A preoperative assessment is requested, the rate of BHCG was not requested because one opted for a miscarriage following a pregnancy stopped. In the mildly unstable hemodynamic state, BP = 75/40 mmHg and persistence of net bleeding with a 9.7 g / dl

hemoglobin and a 28% hematocrit, a platelet count of 172 000 / mm, a prothrombin 49%, a TCA 47.1 / 33, the patient is admitted to the operating room for aspiration.

The introduction of the vacuket n ° 8 under ultrasound control does not allow access to the bag that seems anterior suspicious. Before the cessation of bleeding, it is withheld gesture enduirérin, given the hemorrhagic risk and the absence of embolization plateau.

The second endovaginal ultrasound performed allows to suspect implantation of the sac at the level of the scar in front of a gestational sac that fills the niche of the scar and bomb in the bladder, and an empty and closed cervical canal (fig).



**Fig: Ultrasound showing discontinuity of the anterior wall of the sac and bladder, with a management bag filling the niche of a scar and an empty and closed cervical canal**

The Doppler finds an abnormal peritrophoblastic hypervascularization with an invasion of the anterior wall whose thickness seems reduced.

It is decided to inject 10 IU of syntocinon and a vial of Tranexamic Acid 0.5g (EXACYL) to stop the bleeding. The surveillance in the recovery room does not aim to reappear bleeding. Hemodynamic constants are stable. And the balance is reassuring with hemoglobin at 10.7g / dl, a hematocrit at 31.8% with platelet count at 172 000 and a TP at 53%.

The diagnosis of caesarean scar pregnancy was confirmed, the patient is transferred to hospital for treatment, where she receives 3 injections of methotrexate each 24hours.

The evolution is then marked by the absence of hemorrhagic episodes and good evolution of BHCG.

## DISCUSSION

The rate of caesarean section has exploded in the industrialized countries in recent years, reaching 20.3% in France in 2013 and 52.2% in Cyprus. A serious complication of pregnancy after a cesarean section is the implantation of the gestational sac in the

scar. It is a rare entity of ectopic pregnancy whose diagnosis is often difficult and late and whose prognosis is mainly marked by the haemorrhagic risk and the risk of uterine rupture, despite an early gestational age.

The first case of pregnancy implanted in the caesarean section scar is reported by Larsen and Solomon in 1978 [1]. Its incidence is estimated from 1/2216 to 1/1800 [2, 3].

The cause of these ectopic implantations remains unknown. Several hypotheses have been put and the most probable hypothesis is a cellular migration of the blastocyst through a micro-dehiscence of the scar towards the myometrium [4, 5]. These micro defects can be due to a caesarean section or enduterine gestures. Such as myomectomy, aspiration-curettage, IUD insertion or even uterine revision. They result from incomplete healing or increased fibrosis along the caesarean section scar. The suture technique of cesarean section simplified in one plane would also be incriminated resulting in a more fragile scar [6-8].

The defect results from a true dehiscence of the caesarean or isthmocele scar, which can be diagnosed by 2D and / or 3D ultrasound, or even by

MRI. MRI may be useful in assessing the thickness of myometrium remaining in this defect.

The risk factors complained of are similar to those of placenta accreta: the number of anterior caesarean section and endo-uterine gestures (curettage, manual uterine revision), on the other hand, in vitro fertilization techniques (IVF) with transfer of embryo are also discussed in the mechanism.

The clinical picture is associated with pelvic pain and / or metrorrhagia of variable abundance, most often in the 1st trimester in patients with a history of caesarean. The pain remains the master symptom. The case of asymptomatic patients was described in a third of cases. Early diagnosis can be made by endovaginal and suprapubic pelvic ultrasound with Doppler study. Biology is inconclusive; it is of great interest during surveillance.

The authors established ultrasound diagnostic criteria for a pregnancy implanted in the scar to differentiate it from other forms of ectopic pregnancy. It is based on the criteria established by Vial in 2000 [9] associating:

- Uterine emptiness on a sagittal section;
- The absence of tissue in a closed cervical canal on the same section;
- The presence of a gestational sac with or without embryonic echo on the anterior part of the uterus in the scar.
- The thickness of the myometrium is reduced or absent between the bladder and the gestational sac, which reflects the depth of implantation. The study of the thickness of the myometrium shows a myometre which does not exceed 5mm [10], it has an average of 1-3mm.

The bulge of the gestational sac is reported in the literature through a defect in the bladder cavity [11]. Doppler color or energy objective hyper-vascularization peri-trophoblastic delimiting the bag and locating the placenta in relation to the scar and the bladder. This myometrial hyper vascularization can be objectified even in the absence of gestational sac visualization, it is not usual on the scar in case of endo-uterine pregnancy. The color Doppler studies the blood flow inside the bag. In pulsed Doppler, embryonic cardiac activity was objectified. His absence would have made him look for the "negative sliding organ sign" [2].

Other imaging tests may be performed in case of persistent diagnostic doubt after ultrasound such as MRI. MRI allows understanding the anatomic relationships by specifying the depth of trophoblastic invasion in the myometrium, and the potential damage to the serosa or bladder.

There is no consensual treatment for scarred pregnancies. However, it must be early and active because of the major hemorrhagic risk that puts the patient's life at risk with a risk of emergency hysterectomy. The goal of treatment, medical or surgical, is to be conservative. Several methods are reported in the literature [12.]: injection of methotrexate, sodium chloride or hypertonic saline solution in situ trans-abdominal, vaginal or laparoscopic or intramuscular.

In the case of conservative medical treatment, monitoring of plasma HCG decay and ultrasound evaluation of sac volume and Doppler should be performed because of the persistence of the bleeding risk.

## CONCLUSION

Cesarean scar ectopic pregnancy is a rare entity and potentially life-threatening condition. Although CSP affects only a small number of women, its undiagnosed presence can be hazardous to maternal health. Early detection is crucial for improving prognosis and decreasing maternal morbidity. Ultrasound remains the imaging modality of choice for diagnosis, though MRI could have a greater role in evaluating CSPs even various authors do not recommend performing an MRI systematically. In general CSP has some specific sonographic features that allow for early diagnosis with transvaginal ultrasonography.

Combined with conservative medical therapy makes preserving fertility in the face of a CSP more achievable. Though there is no standardized approach at present.

**Conflicts of Interest:** No conflicts

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