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Case Report

Cesarean Section Scar Ectopic Pregnancy: A Case Report and Literature Review

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Abstract

Scar pregnancy is a rare but serious form of ectopic pregnancy that is life-threatening and functional. Its actual incidence remains undetermined, but the increase in published cases over the past ten years testifies to the increased vigilance of obstetrician-gynecologists on ultrasound diagnosis, which remains the first-line examination. To date, there is no consensus on a reference treatment. We report our experience of a case of pregnancy on caesarean section scar in a 36-year-old patient treated in our department. The diagnosis was suspected in the presence of metrorrhagia associated with pelvic pain in the first trimester of pregnancy. Ultrasound confirmed the diagnosis and treatment consisted of surgical cure by laparotomy. The objective was to discuss the epidemiological, physiopathological, diagnostic aspects, the therapeutic and evolutionary modalities of this rare pathology.

Keywords: Caesarean section scar pregnancy, Ectopic pregnancy, first trimester metrorrhagia, Laparotomy.

INTRODUCTION

Scar pregnancy is defined as an ectopic pregnancy established on the myometrium of a previous uterine scar [1]. It is a rare and understudied complication of the scarred uterus, forming a separate entity in the context of ectopic pregnancies [2]. It is the rare form of ectopic pregnancy, representing 6% of all ectopic pregnancies in patients with a history of a previous cesarean section [3, 4]. However, the frequency is likely to increase due to the increase in the cesarean section rate and the widespread use of ultrasound in early pregnancy in both developed and developing countries [4]. The pathophysiology is still poorly understood. Diagnosis, which must be made early, is based on well-established clinical, biological and ultrasound criteria [5]. The management of ectopic scar pregnancies is still not consensual. It essentially depends on the gestational age, the therapeutic means available, the patient's desire for later fertility and the experience of the therapeutic team, while favoring a conservative attitude [1, 5]. We report our experience of a case of a cesarean section scar pregnancy in the first trimester of pregnancy in a 36-year-old patient treated in the obstetrics gynecology department of the Issaka Gazobi maternity hospital in Niamey in the Republic of Niger. The objective was to discuss the epidemiological, physiopathological, diagnostic aspects, the therapeutic and evolutionary modalities of this rare pathology.

CASE REPORT

It was a 36-year-old G4P3V3 patient. She had an undocumented history of cesarean delivery seven years earlier. She was admitted to our department for first-trimester metrorrhagia with a 10-week pregnancy. The physical examination found a patient with good hemodynamic and ventilatory status. Blood pressure 130/70mmHg, heart rate 79bpm. The abdomen was soft, painful on palpation with a globular uterus. On vulvo-perineal inspection, minimal blackish bleeding was noted. The speculum examination noted a flow of blood at the level of the cervical orifice. On vaginal examination, a globular uterus was noted. The cervix was long posterior and closed. The finger cot brought back blood. The rest of the clinical examination was

normal. A pelvic ultrasound showed a gestational sac without embryonic echo in the isthmic intramyometrial position opposite the old caesarean section scar, with a uterine cavity and an empty cervical canal (Figure 1). The BHCG level was 927 mIU/L; the hemoglobin level at 11.9g/dl. The rest of the biological assessment was normal. The diagnosis of a cesarean scar ectopic pregnancy was made. We performed an emergency laparotomy. When the abdominal cavity was opened, numerous adhesions were removed. Discovery of the cesarean scar which was intact. We proceed to the opening of the isthmic scar allowing to discover the pregnancy which was implanted in the scar. We carried out an evacuation of the gestational sac, then resection of the edges. The incision was closed with two half-overlocks with vicryl 1. Postoperative follow-up was simple and the patient was discharged from the hospital on three days postoperatively. The patient gave her consent for the publication of her case.

Figure 1: Suprapubic ultrasound image showing an empty cervical canal and uterine cavity with intramyometrial gestational sac over the caesarean section scar

DISCUSSION

This observation reports the clinical and radiological illustrations of an isthmic pregnancy implanted on a caesarean scar in a 36-year-old patient with a history of caesarean seven years earlier. Scar pregnancy is a new emerging pathology. This new form of ectopic pregnancy is a rare long-term complication of caesarean section. Its incidence is 1/1800 to 1/2250 pregnancies and represents 6.1% of all ectopic pregnancies [1, 2]. However, this incidence seems to be underestimated and is constantly increasing in parallel with the increase in the rate of caesarean sections in both developed and developing countries [2]. Indeed, after the publication of the first case in 1978, more than 1000 cases of ectopic pregnancies on cesarean scars have been reported in the literature to date [1, 4, 6]. The authors attribute this increasing frequency to the increasing number of caesarean sections, the availability of ultrasound for the early evaluation of pregnancy and the fact that obstetricians now recognize this entity [4]. Pathophysiologically, the gestational sac is completely surrounded by myometrium and scar tissue, completely separated from the uterine cavity. Indeed the micro-defect of the hysterotomy scar or resulting from other endo-uterine interventions such as curettage, myomectomy, hysteroscopy or uterine revision would allow the invasion of the myometrium by the blastocyst, in an incompletely healed area, weakly vascularized and rich in fibrosis [1, 7]. Depending on the depth of myometrial invasion, two pathophysiological forms are distinguished: a form with a shallow implantation of the gestational sac in the scar with development towards the uterine cavity or towards the cervico-isthmic canal [1] and a form with deep implantation of the bag in the scar with development towards the bladder and towards the abdomen. This form is more at risk of uterine rupture [1]. Regarding risk factors, various theories have been proposed to explain the implantation and development of an embryo in the cesarean scar. As the name suggests, the history of caesarean remains the main predisposing factor [5]. However, to date no correlation has been established between the number of previous caesarean sections, the indication for the caesarean section, the surgical technique used for the previous caesarean section or even the length of the previous caesarean section and the risk of a pregnancy in the caesarean section scar [5]. Our patient had undergone a single caesarean section seven years before the onset of her scar pregnancy. The clinical picture is marked by metrorrhagia in the first trimester of pregnancy often associated with pelvic pain in patients with at least one history of caesarean section as in the case of our patient [1-5]. The most dramatic situation is the association of the 2 aforementioned signs in a picture of hemodynamic instability following an inaugural uterine rupture or a diagnosis and management error [5, 8]. However, according to data from the literature, 37% of patients are asymptomatic and the diagnosis is then made during a routine ultrasound [1, 8]. Indeed, ultrasound is the first-line examination for the diagnosis of a scar pregnancy. Four ultrasound criteria have been proposed to confirm the diagnosis: First, an empty uterus and cervical canal. Second, the presence of the gestational sac in the myometrium at the antero-isthmic level. Thirdly, the absence of myometrial tissue or a reduction in the thickness of the myometrium between the gestational sac and the bladder, which makes it possible to make the differential diagnosis with a cervical or cervico-isthmic pregnancy. Fourth, color Doppler visualization of the neovascularization developing in contact with the trophoblast, thus delimiting the gestational sac in the thickness of the myometrium [1, 4, 5]. In our patient, all these four ultrasound signs were found. The other imaging examinations, in particular magnetic resonance imaging (MRI)) will only be requested in the event of diagnostic doubt during the ultrasound [1]. Therapeutically, to date, there is still no consensus on the treatment of scar pregnancy. Management (medical or surgical) must be dynamic and rapid given the major

risk of uterine rupture [1,5]. Conservative treatment should be preferred. However, the choice of the therapeutic method depends essentially on the gestational age, the therapeutic means available, the patient's desire for later fertility and the experience of the therapeutic team [5, 9]. Medical treatment is based on local or systemic methotrexate administration. Potassium chloride injected into the fetal thorax combined with methotrexate by intra-ovular injection was also reported [4, 9]. Embolization of the uterine arteries allows vascular control preventing or treating hemorrhagic complications [2]. Ultrasound-guided aspiration-curettage has been proposed in the event of a gestational sac developing towards the uterine cavity [9]. Surgical management seems to be appropriate in centers with limited resources and in cases of hemodynamic instability. Resection of the pregnancy and excision of the caesarean section scar by laparotomy remains the standard surgical treatment. It repairs the cesarean scar to make it more solid and performs preventive haemostasis if necessary by vascular ligation of the uterine or hypogastric arteries [1, 3, 10]. Some teams suggest an expectant attitude when the gestational sac was mostly in the uterine cavity [10, 11]. Concerning the subsequent fertility prognosis, the literature reports a recurrence rate between 4 and 15.6, and in a study carried out by Greshukhina the recurrence rate was 40% [5].

CONCLUSION

Pregnancy on cesarean scar is a new form of ectopic pregnancy whose incidence would continue to grow given the increase in the rate of cesarean section and the evolution of obstetrical practices. The diagnosis based on clinical, biological and ultrasound criteria should be considered in the presence of any first trimester metrorrhagia associated or not with pelvic pain in a patient with at least one history of cesarean section. Early diagnosis is essential to allow conservative treatment. A primary preventive strategy is to focus on reducing the number of elective caesarean sections.

Conflicts of interest: None

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