Diagnosis and Management of a Postpartum Uterine Rupture following Caesarean Section

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Abstract

An unusual case of an incidental sonographic finding of a large uterine rupture after caesarean section (CS) is presented. The patient had a history of silent uterine rupture diagnosed during her third CS four years ago. Four years after the CS the patient presented to her gynecologist with chronic lower abdominal pain. During ultrasound imaging large inhomogeneous tumor presented in the area of the former CS scar protruding through the anterior uterine wall. Magnetic resonance imaging (MRI) confirmed an old large defect of the anterior uterine wall with hematoma. A surgical reconstruction of the uterus was impossible unfortunately, so a hysterectomy had to be performed.

A caesarean scar defect with uterine rupture is an important obstetric complication and an under recognized cause for chronic lower abdominal pain in premenopausal women.

ABBREVIATIONS

MRI: Magnetic Resonance Imaging; CS: Caesarean Section; HCG: Human Chorionic Gonadotropin

INTRODUCTION

As worldwide the rate of Caesarean sections (CSs) are constantly increasing rare postoperative complications, such as uterine rupture and caesarean scar dehiscences are of growing importance. Unusual cases as presented here impose new challenges on gynecologists.

Caesarean scar defects are commonly detected on ultrasound examination (24%–88%), which is the first-line investigation \cite{1}. Their presence is asymptomatic in the majority of cases. However they can also be related to postmenstrual spotting, dyspareunia, chronic pelvic pain, secondary infertility and even may result in caesarean scar ectopic pregnancy \cite{2}. Many different infertility preserving surgical techniques exist in the repair of caesarean scar defects \cite{3-5}. Our case may serve as a timely reminder and stimulate further research into the surgical repair of caesarean scar defects.

CASE PRESENTATION

A 39-year-old woman, para 3, presented complaining of chronic pelvic discomfort and dyspareunia. Her obstetric history was significant for three CS deliveries. At her third CS a silent uterine rupture was diagnosed and a repair attempted. Following her last CS she only menstruated a few times and subsequently reported amenorrhea taking a progesterone-only pill.

On evaluation bimanual examination revealed cervical excitation tenderness. Transvaginal ultrasound examination depicted an inhomogenic and hypoechogenic tumor of 7x6x3cm in the area of the former CS scar penetrating the anterior uterine wall (Figure 1). This was suggestive of a large caesarean scar defect with an adjacent hematoma which filled the whole vesicouterine excavation. The uterine bladder wall was clearly definable. Magnetic resonance imaging (MRI) confirmed the diagnosis of an evenly delimited large, seemingly old defect of the anterior lower uterine wall with protruding endometrium and hematoma (Figure 2).

The patient was scheduled for a hysteroscopy and repair by laparotomy. She had no wish for further pregnancies and accepted hysterectomy in the case the repair failed. At laparotomy, a large encapsulated hematoma measuring approximately 8 cm in diameter with broad contact to the bladder was noted protruding through a defect in the lower uterine segment (Figure 3). The uterine corpus was small and mobile with a smooth serosa. After resection of the hematoma (Figure 4) the defect the uterine wall was further examined. At hysteroscopy, no myometrial cervico-corporal bridge could be depicted. This was confirmed by palpation. Therefore, a repair was impossible and a hysterectomy was performed.
Histopathology revealed regressive endometrial tissue and a pseudo cyst coexpressing beta-hCG in the area of the uterine wall defect. There was no sign of malignancy.

**DISCUSSION**

Our case shows an CS scar defect of extreme dimension, i.e. a uterine rupture after CS. Recently, the incidence of complete uterine rupture and uterine dehiscence for women who delivered by repeated CS was reported as 2.8% and 10.1%, respectively [6]. The presented case underlines that it is not only a much feared complication during labor but also relevant beyond pregnancy. To our best knowledge no cases of postpartum uterine rupture after previous CS have been reported so far.

Postmenstrual spotting, dyspareunia, chronic pelvic pain, and secondary infertility are present in many functional gynecological conditions. However, they are diagnostically indicative symptoms of a caesarean scar dehiscence which is an important, although under recognized differential diagnosis. The fact that this pathology is asymptomatic in the majority of cases makes the diagnosis even more challenging. From a histopathological perspective, the presented case revealed fibrotic tissue of the scar area which was partially forming a pseudocyst. This is indicative for regressive processes and impaired wound healing after CS which leads to a macroscopically visible CS scar defect.

Typically, ultrasound imaging shows a hypoechoic pouch in the lower uterine segment with interruption of the anterior contour of the cervico-corporeal myometrium [2]. Specific hysteroscopic diagnostic criteria include: presence of a diverticulum in the isthmic site, endometrial loss in the scar and/or accumulation of blood or mucus in the scar [7].

If laparoscopy is performed simultaneously the exact dimension of the defect area is visible through diaphanoscopy [2].

A symptomatic caesarean scar defect on ultrasound imaging or hysteroscopy requires, whenever possible, a metroplasty with the aim of preserving infertility. Small pilot studies propose vaginal, combined vaginal-laparoscopic,hysteroscopic combined hysteroscopic-laparoscopic surgical techniques as therapy [3-5]. Our own approach is a combination of hysteroscopy and mini-laparotomy. At laparotomy, the hysteroscopy light shining through the scar pouch (“positive diaphanoscopy”) allows the
identification of the defect scar area. Often dissection of the bladder has to be performed before the dehiscent scar area can be resected completely. The freshened edges are then closed with a two-layered interrupted suture [2]. Patients are advised to use contraception for six months and to have a repeat CS.

All reported surgical techniques may lead to a reduction of symptoms and improved pregnancy rates. A complete defect excision and precise wound adaption leads to a reconstruction of the uterus and an increases uterine wall thickness when compared with a less invasive resectoscopic treatment. Thereby the risk of pre- or intrapartum uterine rupture may be reduced.

In conclusion, although uterine dehiscence is a frequently observed phenomenon, uterine rupture being hidden for a long time is a rarely reported. We must consider that uterine rupture may be hidden among patients who had previous CS, even if CS had been performed long before. Such patients may be unrecognized and, thus, may remain unreported. Data accumulation is needed.

REFERENCES


