

SPONTANEOUS UTERINE RUPTURE DURING PREGNANCY AFTER LAPAROSCOPIC MYOMECTOMY – CASE REPORT

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ABSTRACT

Herein we describe a case of spontaneous uterine rupture at 35 weeks of pregnancy in a 37-year-old female patient in her first pregnancy after *in vitro* fertilization, who had had a myomectomy 7 years earlier. The indication for the procedure was a myoma partially penetrating the uterine cavity (FIGO classification group 2-5) causing abnormal uterine bleeding. The myomectomy was performed by laparoscopy with layered suturing of the tumour bed. The patient came to the Obstetrics and Gynaecology Clinic due to increasing abdominal pain. Additional examinations revealed tenderness of the uterus, foetal tachycardia, and the presence of free fluid in the Douglas pouch during ultrasound examination. An urgent caesarean section was done, during which a full-walled uterine rupture was visualized at the fundus at the site of the tumour enucleation. Conservative treatment was chosen, leaving the uterus in place. The uterine muscle was sutured in layers. The postoperative period was uneventful. The patient was discharged home in good general condition.

Key words: obstetrics, uterine rupture, myomectomy.

INTRODUCTION

Uterine fibroids are the most common benign tumours of the female genital organs [1]. In some cases, these changes can impair the health-related quality of life of patients and lead to complications of the urinary, digestive, and circulatory systems [2, 3]. Due to the increasing age of procreation among women, we can more and more often deal with patients after surgery due to benign or malignant tumours [4]. One of the treatment options indicated in the case of uterine fibroids is laparoscopic myomectomy. There are studies in the literature indicating the risk of spontaneous uterine rupture after this type of surgery [5]; however, the total percentage of patients with this complication remains unknown. We present a case of one of the most severe, rare complications of myomectomy: spontaneous rupture of the uterus during pregnancy.

CASE REPORT

A 37-year-old pregnant woman first presented to the Obstetrics and Gynaecology Clinic at 35 weeks of gestation, with abdominal pain lasting for 2 hours. She was treated 7 years earlier for abnormal uterine bleeding caused by a uterine fibroid (6 cm intramural myoma located in uterine fundus and penetrating the uterine cavity, FIGO 2-5) [6].

A laparoscopic myomectomy was performed with an intraoperative opening of the uterine cavity and a layered suturing of the uterine muscle. For the next 6 years, after the procedure, the patient failed to conceive spontaneously, and the couple decided to undergo *in vitro* fertilisation. The pregnancy was uncomplicated.

In the subjective examination at admission, the patient reported non-radiating growing abdominal pain lasting for about 2 hours and awakening from sleep.

In the physical examination at admission, the patient maintained logical verbal contact. Blood pressure was 110/80 mmHg, heart rate 110 beats per min.

In the gynaecological examination, the cervical canal was closed (Bishop score = 4); no vaginal bleeding was found during speculum examination. Pain during palpation of the uterus and muscular defence were found with a negative Blumberg sign. Cardiotocography (CTG) traces showed foetal tachycardia with normal variability. The ultrasound showed a single foetus, alive, with a foetal heart rate of 170 beats per min. The foetus was eutrophic with an estimated foetal weight of 2500 g. The Doppler ultrasound showed no signs of centralization of circulation, UmbA PI = 0.67, MCA PI = 1.3, cerebroplacental ratio (CPR) > 1. The placenta was located at the uterine fundus. No signs of

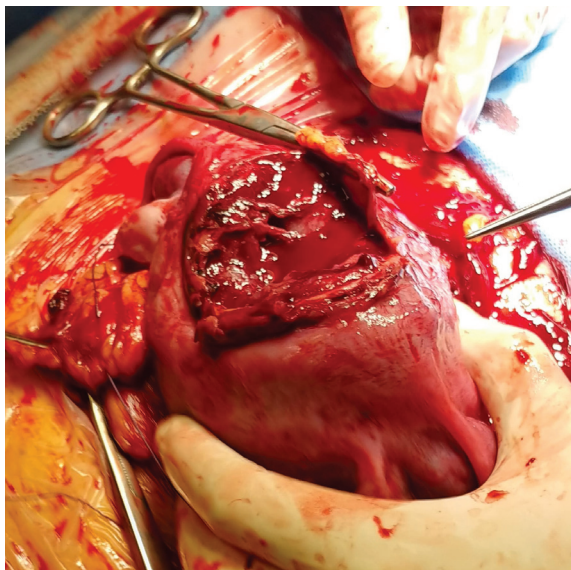


Figure 1. Uterine rupture

placental abruption (including a placental hematoma) were visible. During the transvaginal ultrasound, free fluid was visible in the pouch of Douglas with an estimated volume of about 200 ml. Due to a suspected uterine rupture, the decision was made to perform an urgent caesarean section.

A caesarean section was performed using the Misgav Ladach technique. After opening the peritoneal cavity, blood was observed in the vesicouterine pouch. No rupture was observed on the anterior wall of the uterus. The uterus was cut transversely in its lower segment. The female foetus was delivered in good general condition (Apgar 9-9-9). The umbilical cord blood gas analysis showed pH = 7.33. After exteriorizing the uterus in the sagittal plane, a full-walled rupture was found with a length of approx. 8 cm (Fig. 1). From the side of the uterine cavity, the placenta was implanted on the surface of the rupture. The edges of the wound were refreshed. The uterine muscle was sutured in layers to obtain haemostasis (Fig. 2). After obtaining the haemostasis the abdominal layers were closed in a standard way. A drain was placed in the pouch of Douglas.

The postoperative period was without complications. The patient was discharged on the 12th postoperative day as a result of the need to wait for the newborn.

DISCUSSION

Uterine rupture during pregnancy can have catastrophic consequences for both mother and child; the occurrence of this complication is associated with a mortality of approx. 2.5% for mothers and 1/3 of newborns in cases of uterine rupture after 24 weeks of pregnancy [7]. Most often, this complication oc-

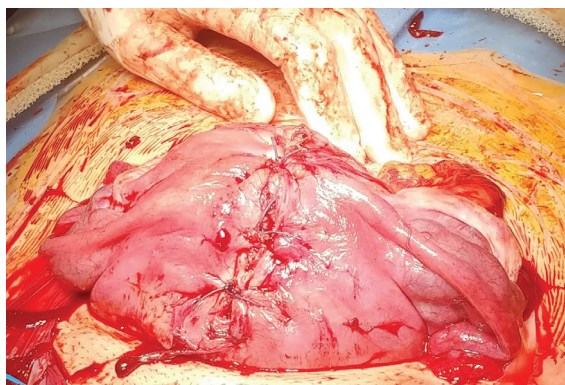


Figure 2. State after closure of the uterine rupture

curs after a previous caesarean section (about 45%) – especially in the case of a classic uterine incision. The problem may be exacerbated by the ever-increasing rate of caesarean sections [8].

The condition after myomectomy is responsible for about 1/3 of the cases of this complication [7, 9]. Most often, this complication occurs in the third trimester of pregnancy, at about 36 weeks of gestation (mean gestational age 36.81 ± 6.16 weeks) [10] and in women during first pregnancy [11]. This complication most commonly occurs in patients who have given birth within the first year after surgery, and the risk of complication decreases over time [11].

In all cases of uterine rupture, the primary symptom is abdominal pain [7]. Vaginal bleeding occurs only in 30% of cases, but this symptom is associated with a higher risk of complications for the pregnant woman and the child [12]. Other symptoms are non-specific. According to a systematic review of the literature, in more than half of the cases, symptoms of hypovolaemic shock were present during the patient's admission to the ward [7]. In cases where the uterus ruptures during natural vaginal delivery after a caesarean section, the most common symptom reported in the literature is an abnormal record of foetal CTG [11]. Early diagnosis of this complication and surgical intervention are crucial to prevent hypovolaemic shock in the pregnant woman and the death of the neonate.

At the same time, the literature data do not indicate a method of myomectomy that is safer for the patient in terms of this complication. Concerning laparoscopic myomectomy, allegations have been made that the uterine wall cannot be stitched properly and that coagulation is used excessively, resulting in a lower quality uterine scar. However, direct prospective studies comparing these methods do not give clear results in favour of laparotomy [13]. The risk of uterine rupture during pregnancy did not differ in the observational studies [10, 13, 14]. However, it should be remembered that this complication is very rare and there were not many groups included in the study, resulting in low statistical power and a high risk of a type II error. Data

indicate that uterine rupture occurred at an earlier stage of pregnancy with laparoscopy; the difference was statistically significant, though small (mean gestational age 253 vs. 251 days) [10]. The fertility rate was comparable after both types of procedures [14]. The main advantages of laparoscopic myomectomy, such as less blood loss, less postoperative pain, and shorter hospitalization after surgery, are common to all laparoscopic procedures [15]. Some studies indicate that patients after a classical myomectomy are less likely to need a caesarean section [13].

Uterine rupture after myomectomy is a rare complication. It would be ideal to have a tool for stratifying patients into a group at increased risk of this complication. To date, such a tool has not been developed; however, literature data indicate the potential value of 2-dimensional [16] and 3-dimensional Doppler ultrasonography to assess blood supply after myomectomy [17]. There are also opportunities for early detection by sequential MRI of the pregnant uterus [18]. Currently, we do not have methods and models that allow for the proper stratification of patients.

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Disclosure

The authors declare no conflict of interest.

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