

A case of successful delivery after IVF-ET in a patient with a history of full-thickness uterine rupture and subsequent reconstructive surgery

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Uterine rupture is a full-thickness uterine wall defect occurring during pregnancy. It is a rare but severe and life-threatening condition for both the mother and the newborn. It may happen at any stage of pregnancy or labor, mostly between 30–35 weeks of pregnancy [1]. The predominant risk factors are a history of uterine surgeries or a previous rupture. It presents with vaginal bleeding, uterine contractions, abdominal pain, reduction of fetal movements and fetal distress. It may also present with unremarkable symptoms which are easy to overlook [2].

Myomectomy is a common gynecological procedure performed due to symptomatic uterine fibroids manifesting with abnormal uterine bleeding, pelvic pain, infertility, and other symptoms. It should be remembered that uterine fibroids are a single cause of infertility in only selected patients [3]. There are no specific guidelines concerning the optimal time interval between myomectomy and the pregnancy [4]. According to some authors, the incidence of uterine rupture after myomectomy is estimated at < 1%, suspected to be higher in case of laparoscopy than laparotomy [1, 5].

Our patient started infertility diagnostics at the age of 33, after about two years of not conceiving. A male infertility factor was identified. The patient was diagnosed with polycystic ovary syndrome (PCOS), insulin resistance (IR), Hashimoto's disease, coeliac disease and a 60-mm uterine fibroma. Laparoscopic myomectomy was performed, followed by three unsuccessful IVF-ET attempts. Afterwards, the patient started her dietary treatment and lost about 18 kg. Some time later a spontaneous pregnancy was confirmed in the patient.

The pregnancy was uneventful until 36 weeks of pregnancy when the patient presented at the emergency department with abdominal pain. A thorough examination revealed no abnormalities, and the patient was discharged. The patient returned when the symptoms aggravated. Clinical examination revealed that the patient's condition was deteriorating, and fetal heart rate was absent. Therefore, emergency laparotomy was performed, exposing uterine rupture extending from the uterine cornua to the cervix (Fig. 1A), complete placental abruption, and severe hemorrhage. Despite the need of blood transfusion, uterus-sparing surgery was successful (Fig. 1B). The postoperative course was uneventful.

After recovery, magnetic resonance imaging and ultrasound scan revealed the thinning of the uterine wall at the site of the postoperative scar (Fig. 1C). The clinical team decided to perform a reconstructive surgery of the uterine wall. 15 months after the rupture, the surgery was performed via open access. Hysteroscopy and ultrasound scan six months later showed a properly healed uterus (Fig. 1D).

The fourth of consecutive IVF-ET attempts finally led to a successful pregnancy. As it was a high-risk pregnancy the admission was planned at the 32nd week. Abdominal pain appeared several days before the set date and the patient was immediately admitted to the hospital. Conservative treatment was implemented and due to the history of uterine rupture, after a course of corticosteroids, an elective cesarean section was performed at 36 weeks of pregnancy. A healthy girl weighing 2540 g was born.

The presented case demonstrates that every myomectomy performed in a patient of reproductive age may cause serious complications in the following pregnancies. Therefore, the qualification for surgery should be conducted care-

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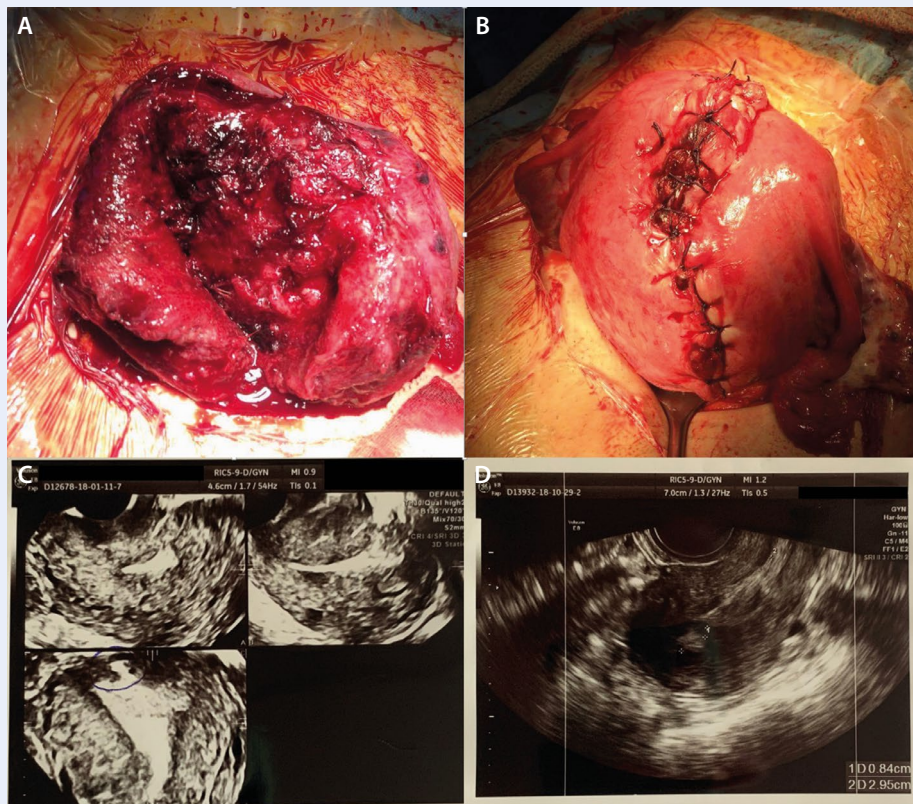


Figure 1. A. Uterine rupture; B. Uterus after successful suturing; C. Transvaginal ultrasound imaging — the thinning of the uterine wall at the site of the postoperative scar; D. Properly healed uterus after reconstructive surgery

fully and patients should be well informed about the possible complications. In face of the worldwide increase in the rate of uterine surgeries in young women, new pregnancy management challenges appear. Nonetheless, proper care may finally lead to the birth of a healthy child and delighted parents.

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Conflict of interest

All authors declare no conflict of interest.

REFERENCES

1. Pop L, Suciú ID, Oprescu D, et al. Patency of uterine wall in pregnancies following assisted and spontaneous conception with antecedent laparoscopic and abdominal myomectomies - a difficult case and systematic review. *J Matern Fetal Neonatal Med.* 2019; 32(13): 2241–2248, doi: [10.1080/14767058.2018.1427060](https://doi.org/10.1080/14767058.2018.1427060), indexed in Pubmed: 29320920.
2. Al-Zirqi I, Daltveit AK, Vangen S, et al. Risk factors for complete uterine rupture. *Am J Obstet Gynecol.* 2017; 216(2): 165.e1–165.e8, doi: [10.1016/j.ajog.2016.10.017](https://doi.org/10.1016/j.ajog.2016.10.017), indexed in Pubmed: 27780708.
3. Yan L, Ding L, Li C, et al. Effect of fibroids not distorting the endometrial cavity on the outcome of in vitro fertilization treatment: a retrospective cohort study. *Fertil Steril.* 2014; 101(3): 716–721, doi: [10.1016/j.fertnstert.2013.11.023](https://doi.org/10.1016/j.fertnstert.2013.11.023), indexed in Pubmed: 24424367.
4. Margueritte F, Adam C, Fauconnier A, et al. Time to conceive after myomectomy: should we advise a minimum time interval? A systematic review. *Reprod Biomed Online.* 2021; 43(3): 543–552, doi: [10.1016/j.rbmo.2021.05.016](https://doi.org/10.1016/j.rbmo.2021.05.016), indexed in Pubmed: 34353724.
5. Yazawa H, Takiguchi K, Ito F, et al. Uterine rupture at 33rd week of gestation after laparoscopic myomectomy with signs of fetal distress. A case report and review of literature. *Taiwan J Obstet Gynecol.* 2018; 57(2): 304–310, doi: [10.1016/j.tjog.2018.02.022](https://doi.org/10.1016/j.tjog.2018.02.022), indexed in Pubmed: 29673678.