

Pregnancy in the scar after myomectomy

J. Hudecová¹, A. Hudec², Z. Novotný¹, D. Slouka³

¹*Department of Gynaecology and Obstetrics, Faculty of Medicine in Pilsen, Charles University, Pilsen*

²*Genetika Ltd., Pilsen*

³*Department of Otorhinolaryngology, Faculty of Medicine in Pilsen, Charles University, Pilsen (Czech Republic)*

Summary

A 33-year-old female after the laparoscopic myomectomy in 2013 was hospitalized for suspected pregnancy in the scar after myomectomy in the 12th week of pregnancy. After admission to the hospital, an ultrasound examination and subsequent magnetic resonance imaging confirmed the diagnosis. Due to the finding, the patient was prescribed surgical intervention. The laparoscopy was performed and due to the interoperating performance, it was converted to laparotomy with evacuation of fetal eggs, by excision of the edges of the myometrium, and the suture of the wall of the uterine. The operation was complicated by excessive blood loss and coagulation disorder, which was dealt with in cooperation with an anesthesiologist. The postoperative period was without complications and the patient was released to home care on 7th postoperative day.

Key words: Pregnancy in the scar after myomectomy; Ultrasound; Surgical treatment of ectopic pregnancy; MRI; Tachosil.

Introduction

The pregnancy in the scar after myomectomy is a rare form of ectopic pregnancy. There has been only 34 cases presented in the recent literature so far. [1] In this paper, we describe our experience with this life-threatening disease.

Case Report

This report describes the case of a 33-year-old female. The patient underwent a c-section at 27 weeks of gestation due to the diagnosis of premature separation of the placenta in 2003 and laparoscopic myomectomy in 2013. The details regarding laparoscopic procedure in the time of examination were not known.

The patient was referred from the specialized ultrasonographic Department to Gynaecology and Obstetrics clinic and afterwards she was taken to the hospital for a suspected pregnancy in the scar after myomectomy at the 12th week of pregnancy.

At the time of admission, the patient was without any problems, pain, temperature and even no bleeding was discovered. Initially ultrasound scan of the uterus was described in retroversion without the apparent echoes of embryo in the uterine cavity. In the maternal fundus, a part of the chorion with the visible formed placenta was discovered. Moreover, the communication of uterine cavity with the adjacently gestational sac was outside the uterine cavity and in which the fetus was alive with heart functions. The CRL was 47 mm and the estimated pregnancy age was 11 + 4 weeks. The myometrium closer gestation sac was extremely depleted to 1.7 mm. On the basis of the ultrasound scan, the patient was sent to confirm the diagnosis by magnetic resonance examination. The result of this examination was that the fundus of the uterus with cystic formation (vs. chorionic sac) emanating from the back wall of the uterus had an hourglass shape. In the dorsal stored part of the uterus, the fetus was displayed. The placenta

was stored mainly in the ventral part. The wall of the uterus was significantly thinned in the back and bottom part. It disappeared on the area of 20 mm; in this area the scar after the myomectomy was determined. There was a small amount of free fluid/blood in the Douglas cavum.

The patient was provided with the conclusions of all tests, which indicated ectopic pregnancy in the scar after the myomectomy on the back wall of the uterus. Laparoscopy with a possibility of consequent laparotomy, termination of pregnancy, and resuturing of the defect were recommended.

The operational was performed under general anaesthesia. The performance began by laparoscopic part of the operation, at which the defect of the myometrium on the back wall of the uterus in the diameter of about 4 cm was displayed (Figure 1). There was an evidence of chorionic tissue and amniotic eggs. The next findings were also adhesions of the epiploic appendix of rectosigmoides as to the described defect (Figure 2). The tube, ovary, and plica of the uterine bladder were without any pathological finding.

Based on this finding, the performance was extended to the laparotomy, in which extirpation of the fetal egg and the evacuation of the cavity of the uterus from the transabdominal approach were performed. After the removing of the fetal eggs the myometrium was excised to healthy tissue (Figure 3).

Due to the retraction of the muscle, the resulting defect in the area of the rear wall of the uterine and the uterine fundus size of measuring approximately 4×7 cm. During suturing, heavy bleeding from the early area and right edges of the uterine occurred. This was arrested by individual cross-stitches. As the result of the intense bleeding, haemocoagulation failure occurred. This failure was dealt by the cooperation of an anaesthesiologist. Tachosil was applied on the area of the suture of the myometrium. After the application of Tachosil, the bleeding stopped within ten minutes. The total blood loss was estimated at 3,000 ml.

Due to the overall blood loss the patient was hospitalized in the anaesthesiology and intensive care department in the postoperative period, where the first day she was on the artificial pulmonary

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Figure 1. — The rear wall of the uterus with pregnancy in the scar after the myomectomy during the laparoscopic part of the surgery



Figure 2. — The rear wall of the uterus with pregnancy in the scar after the myomectomy during the laparoscopic part of the surgery with adhesions to the rectosigmoidum



Figure 3. — The rear wall of the uterus with pregnancy in the scar after the myomectomy during the laparotomic part of the surgery

ventilation in sedation. The second day she was transferred to the standard gynaecological bed. The seventh post-operative day she was in good condition and discharged.

Discussion

Ectopic pregnancy occurs in 0.5–2% of all pregnancies and is involved in 6–9% of maternal deaths. Currently, a rising incidence can be observed. The most common localization is tubal (95–97%), while other localizations are rare.

In recent literature, pregnancy in the scar after the myomectomy is described only in the form of case studies. There are only 34 published cases. The gold standard for diagnosis is ultrasound scan, which can be complemented by the examination of magnetic resonance imaging. A combi-

nation of both investigative modalities should give a clear idea about the finding. Secondly, based on the results of the examination the idea about the possibilities of therapy should be revealed.

In all 34 published case reports, the therapeutic solutions depended on the clinical condition of the patient, the size of the pregnancy, the decision of the patient in the planning of the next pregnancy, the medical decision, and on the preference on the solution of the patient itself. Alternatives to the operational solutions can be divided into more or less invasive. The therapeutic solutions in the mentioned 34 case reports from more invasive terms included a surgical wedge resection, hysteroscopy excision, and less invasive were local injection of potassium chloride or methotrexate. [2]. The main advantage of the surgical approach is the definitive solution in comparison to drug therapy that has uncertain results and is time consuming. The observational management is not recommended due to the high risk of rupture and life-threatening bleeding and complications resulting from it.

In the present case, the suspicion on the pregnancy in the scar after the myomectomy was declared after the examination of the pregnant woman on a specialized workplace in the 11th week of pregnancy. Until this examination, the pregnancy progressed without complications. It can be assumed that the nest of fetal eggs occurred primarily in the scar after the myomectomy, subsequently, due to the growth of fetal eggs, asymptomatic dehiscence of the scar and the expulsion of the concept outside of the uterus occurred, with the placenta adhering at the place of the dehiscence, and in the fundus of the uterus. Due to the age of gestation, size of fetus, and to the extent of the defect, the definitive surgical solution was done. This indicates performing laparotomic evacuation, excision of the edges of the myometrial defect, and the suturing of the wall of the uterus,

with fertility preservation of the of the patient.

With the advanced age of pregnant women, the incidence of uterine fibroids increases. The fibroids during pregnancy occur in the prevalence of 0.9–3.9% [2–5]. The differences are due to different sensitivities of various diagnostic methods (vaginal ultrasound in the first trimester, abdominal ultrasound, only palpation, the findings for cesarean section). Pregnancy in the uterine fibroids is traditionally considered to be risky. This is confirmed by number of studies [2, 3, 5–9]. To determine the level of risk specific for pregnant woman for each impending pathological conditions is difficult. Literature indicates the incidence of complications associated with fibroids 10–30% [4, 7, 10]. The incidence of uterine fibroids has a complex effect on fertility, pregnancy, birth, and on the postpartum period. The goal of medical treatment of uterine fibroids is the removal of the difficulties, improving fertility and prevention of pregnancy complications. There are several medical treatment modalities, such as drug therapy, surgical therapy, and alternative mini-invasive methods or alternative minimally invasive methods or radiological intervention, which in women of childbearing potential planning to become pregnancy, due to the possible complications alone, performance and the uncertainty of the questions of late relapses, and the risk of pregnancy, are not recommended [11–14]. During surgical therapy the mini-invasive methods over the traditional laparotomic performances are preferred. The method of choice of the surgical treatment is laparoscopic myomectomy. Myomectomy among the women of childbearing age should be performed in a woman whose fibroid is symptomatic or there is a rapid growth of myoma or where there were complications during the previous pregnancy and is appropriate prior to IVF, if the fibroids are larger than 4–5 cm or that extend into the uterine cavity [15].

Concerning the question of the prevention of risks and complications of myomectomy in subsequent pregnancy, a careful treatment of the uterine wall by suturing is preferred, in deep as well as in the surface layers [16, 17]. Thorough instruction of the patients is important, but also the transfer of the operating protocol with a detailed description of the localization of the myoma and the method of the treatment of a puncture of the uterus to the patient, to the attending ob/gyn or the inpatient department. The most feared late postoperative complication of laparoscopic myomectomy is the risk of the uterine rupture in a subsequent pregnancy. Uterine rupture after laparoscopic myomectomy rarely occurs. The indicated amount of risk is approximately 0.25–1% (which is about 2% of all the ruptures of the uterus associated with pregnancy). However, this number can vary depending on the mode of the performance, the size, the localization, the amount of the enucleation uterine fibroids, and on the chosen approach to the management of the labor. From the performed studies emerges that among risk factors of uterine rupture during the pregnancy are the fundal position of a fibroid, inadequate suture, the opening of the

uterine cavity, and the intense non-targeted coagulation of of myoma beds. Uterine rupture after myomectomy, which is much rarer than rupture after cesarean section, are also described as spontaneous, (outside) birthing contractions [18].

The recommendations leading to the safe pregnancy after myomectomy are very inconsistent and it is not simple to find them in the literature. The classic recommendation is interval of one year, similar as after a cesarean section. It always depends on the type and the method of implementation of the operation and the subsequent healing process. After uncomplicated hysteroscopic resection of submucous fibroid, a safe interval is three months, likely as after the revision of the uterine cavity after an abortion. After demanding hysteroscopic transcervical solution of myomatosis uterus, second-look hysteroscopy takes place with possible resection of intrauterine residue of myoma and it is better to postpone the pregnancy at least for another three months from this reintervention and preferably after planned ultrasound or after another hysteroscopic control. [18]

Conclusion

Pregnancy in the scar after myomectomy belongs in the context of an ectopic pregnancy which is a rare finding, and is described only in the form of case studies. During the childbearing age of women, is always includes a restorative surgery leading to the possibility of another pregnancy. Nowadays, due to ultrasound equipment and the experience of the investigating ultrasound operators, ectopic pregnancies can be diagnosed in the early stages and adequate recommended solutions suitable for individual patients can be prescribed.

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Corresponding Author:

J. HUDEC OVÁ, M.D.

Department of Gynaecology and Obstetrics

Faculty of Medicine in Pilsen, Charles University

Alej Svobody 80

323 00 Pilsen (Czech Republic)

e-mail: landsmanovaj@fnplzen.cz