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UTERINE RUPTURE AFTER PREVIOUS MYOMECTOMY: A CASE REPORT AND LITERATURE REVIEW

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ABSTRACT

Uterine rupture after previous myomectomy or cesarean delivery is considered to be a rather rare pathology observed in the obstetrical practice and due to adverse mother and fetus outcomes, it requires a prompt assistance. Most uterine rupture are associated with a trial of labor after cesarean delivery or scarred uterus. It is essential to make a decision on the completion on the optimum time and option of pregnancy.

The purpose of this article is to introduce a clinical case and literature review and to provide visual material observed during the surgery.

KEYWORDS : Uterine Rupture, Scarred Uterus.

Introduction

Uterine rupture after previous myomectomy or cesarean delivery refers to complete disruption of all uterine layers. It is considered to be a rather rare pathology observed in the obstetrical practice and due to adverse mother and fetus outcomes, it requires a prompt assistance. (1) Most uterine rupture are associated with a trial of labor after cesarean delivery or scarred uterus and occasionally it can be incidentally discovered at the time of scheduled cesarean delivery. (2) By monitoring this kind of high risk pregnancy is essential to make a decision on the completion on the optimum time and option of pregnancy.

A clinical case

A 40-year-old patient J.V., was hospitalized at the Obstetric Unit of Vilnius University Santaros Clinics (VUL SK) on the 39th week for a scheduled cesarean section operation due to a scar in the uterus after previous laparoscopic myomectomy, cesarean section and uterine rupture. It was the second pregnancy and delivery. The pregnancy monitoring was smooth.

8 years ago she was diagnosed with uterine myoma. In dynamics it has grown, the woman suffered acyclic bleeding, she was treated with Duphaston and Esmya were administered. 3 years ago she had laparoscopy, when 5-6 cm size intramural myoma tumor was removed from the posterior uterine wall. 2 years ago woman gave birth via a cesarean section operation due to a scar in the uterus after a previous myomectomy. A complete uterine rupture was seen with the amnionic sac protruding into the abdomen in the area of the previous scar. (pic. 1).

Upon arrival, the pregnant woman did not have any complaints. She was feeling fetal movements well. Upon hospitalization, general examination showed satisfactory general condition, temperature – 36,5 ^{0}C, arterial blood pressure 126/82 mmHg, rhythmic heart activity, no murmur, heart rate – 87 t./min, normal uterine tone. A nonstress fetal test recorded in the reception room was reactive, the fetal heart tone were clear and rhythmical, 138 t./min. On vaginal examination: cervix retroverted, stiff, 2,0 cm long, closed. Fetus was positioned head down. Fetal membrane was not ruptured.

A female newborn weighing 3,600 grams and 53 cm tall, assessed by Agar scale assessed 10/10 points, was born after Pfanenstiel cut during cesarean section surgery. The placenta was solid, 600 g of weight, had been removed manually. Uterus was repaired with multilayer closure. When examining the uterus, an approximately 12-cm long uterine scar was observed in the place of the previous rupture (pic. 2), ovaries and other abdominal organs were unchanged. The remainder of the surgery was completed in the usual fashion. There were no complications during the surgery.

Post-operative period was smooth, the woman and the newborn were discharged from the hospital on the second day after the surgery.

Literature review

The main risk factors for uterine rupture include previous caesarean sections, previous other uterine surgeries (abdominal and/or laparoscopic myomectomy) or induction of labour.(3) Other risk factors, such as uterine anomalies, multiple pregnancy, macrosomia are also important. (4)

The most common uterine rupture manifests through sudden and strong abdominal pain, vaginal bleeding, disappearance of labor pains, deterioration of fetus condition, however, the literature provides rare cases when uterine rupture is diagnosed without any clinical signs. Uterine ruptures which occur without any clinical signs are mostly found accidentally during planned cesarean section surgery. There are no statistical data about such uterine ruptures, only rare cases are found described. It is considered that in case of good outcomes, such cases are not documented, which distorts the results of uterine rupture rate. (5)

For women with uterine scars, optimum management of subsequent deliveries are trial of labor after cesarean delivery (TOLAC) and planned repeat cesarean delivery (PRCD). Three possible outcomes for those women are: PRCD, a successful TOLAC terminating in vaginal birth, or a failed TOLAC resulting in a repeat cesarean delivery during labor.

Benefits of successful TOLAC leads to avoidance of the risk associated with repeat cesarean delivery. Maternal morbidity rate during TOLAC versus PRCD is 0,004 % versus 0.013% (RR 0.33, 95% CI 0.13 - 0.88). However, higher maternal morbidity associated with a failed TOLAC resulting in intrapartum cesarean delivery than successful TOLAC and PRCD. Contrary, benefits of PRCD leads to avoidance of the risk associated with TOLAC, especially uterine rupture. Uterine rupture rate during TOLAC versus PRCD is 0,47 % versus 0.026% (RR 20.7, 95% CI 9.8 - 44). (6,7)

There is no reliable methods for predicting TOLAC outcome or uterine rupture, in spite of the fact that a number of predictive screening tools, models have been developed, but none have been proven to be highly useful clinically. (8,9)

The applicant for TOLAC are women with a high likelihood of vaginal delivery and a very low probability of intrapartum uterine rupture. A woman who has undergone only one previous cesarean delivery using a transverse lower segment uterine incision has the 60 - 80% TOLAC success rate and uterine rupture rate is 0.4 - 0.7%. (10,11)

The probability of successful TOLAC rate increase over 80% in patients with a previous vaginal delivery (OR 3.9, 95% CI 3.6 - 4.3), previous successful TOLAC (OR 4.76, 95% CI 4.35 - 5.26), previous caesarean delivery for non vertex presentation and in women with spontaneous onset of labor or with >4 cm cervical dilation when admitted to the labor unit (OR 2.56, 95% CI 2.38 - 2.67). (11,12). Additional factors that increase the probability of successful TOLAC rates: an estimated fetal weight <4000 g, non-Hispanic white women, women <35 years old, BMI <30 kg/m2, interpregnancy interval more than six months, women without pre-existing maternal disease.(11, 12, 13, 14,15)

A higher risk of uterine rupture have women with a prior low vertical uterine incision versus low transverse uterine incision (1.0- 2.0% versus 0.4 - 0.7%), with two prior cesarean deliveries (0.72% versus 1.59%; OR 0.42, 95% CI 0.29 - 0.60), unknown type of uterine incision, pregnancy more than 40 weeks of gestation, macrosomia. (10, 16, 17, 18)

Women with a previous classical, T, J, transfundal hysterectomy incisions, uterine rupture should avoid TOLAC because of high risk of uterine rupture. (10, 19).

There is no consensus on the optimum timing of delivery. Patients who are planing TOLAC, should have induction of labor at 40 weeks of gestational if the cervix is favorable. Women with prior vertical uterine incision or prior hysterectomy for fetal surgery should undergo delivery by PRCD by 37 weeks of gestational. With the previous uterine rupture occurred at term, during labor and in the lower uterine segment, many experts suggest delivery by PRCD at 36-37 weeks of gestational, in preterm, antepartum, fundal rupture earlier delivery at 34-36 weeks of gestation is reasonable. (20)

Conclusions

Considerate pregnancy monitoring, evaluation of the risk factors, optimum time and option of pregnancy after cesarean delivery can reduce the maternal and fetal adverse outcomes due to uterine rupture.

Picture 1

Picture 2

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