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## UTERINE RUPTURE FOLLOWING MYOMECTOMY IN THIRD TRIMESTER

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**SUMMARY** – Rupture of gravid uterus is surgical emergency causing maternal and fetal morbidity and mortality. The risk of uterine rupture is associated with uterine scars caused by previous cesarean section, myomectomy, hysteroscopic procedures, and curettage. We report a case of a 40-year-old woman in 31<sup>st</sup> week of gestation with spontaneous uterine rupture. It was her third pregnancy. She had two healthy children from previous pregnancies. Her symptoms were abdominal pain, vomiting and pain in the right shoulder lasting for 12 hours prior to admission. Ultrasound examination at admission revealed a dead fetus in the abdomen and free fluid in the abdominal cavity. She had previously undergone laparoscopic myomectomy. After myomectomy, she had one successful vaginal delivery. Every abdominal pain in pregnant woman with uterine scar should be carefully and promptly examined to exclude uterine rupture before further diagnostic procedures. This early time frame is essential for survival of the fetus and sometimes even of the mother. Uterine rupture represents indication for immediate cesarean section and it should be performed within 25 minutes of the first signs of uterine rupture. As shown in the case presented, one successful vaginal delivery after myomectomy is no guarantee for future pregnancies.

**Key words:** *Uterine rupture; Pregnancy; Uterine myomectomy; Laparoscopy – methods; Abdomen, acute; Case reports*

### Introduction

The prevalence of myoma increases with age and it is estimated to be 3%-10% of women of reproductive age<sup>1</sup>. Associated symptoms include dysmenorrhea, spotting, hypermenorrhea leading to anemia, lower abdominal pain, pressure on adjacent organs, and disorders of micturition and defecation<sup>2</sup>. Myomas are also found in 5%-10% of infertile women. In 1%-3% of all infertilities, myomas are the only known reason of infertility<sup>3</sup>. Myomectomy is indicated to eliminate symptoms that impair the quality of life but also as part of infertility treatment if other causes are

eliminated. Laparoscopic myomectomy is the gold standard for women with symptomatic myomas who plan to become pregnant<sup>4</sup>. After laparoscopic myomectomy, the uterus is scarred and this condition can cause uterine rupture, a life threatening condition for the mother and the fetus. Rupture of gravid uterus is surgical emergency and one of the most serious complications of pregnancy, causing maternal and fetal morbidity and mortality<sup>5</sup>. The risk of uterine rupture is associated with uterine scars caused by previous cesarean section, myomectomy, hysteroscopic procedures, and curettage. Uterine rupture can occur in an intact uterus but this condition is very rare.

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### Case Report

A 40-year-old woman in 31<sup>st</sup> week of gestation presented to our department with abdominal pain,

vomiting and pain in the right shoulder lasting for 12 hours. It was her third pregnancy. She had two healthy children from previous pregnancies. Emergency ultrasound examination at admission revealed a dead fetus in the abdomen and free fluid in the abdominal cavity.

This pregnancy was regularly controlled and placenta previa totalis was verified. She had previously undergone laparoscopic myomectomy after first successful pregnancy and one more successful pregnancy after myomectomy. Laparoscopic myomectomy was performed after years of menstrual discomfort and pain. At the operation intramural, a 6 cm large myoma on the fundus of the uterus was found and resected by entering the uterine cavity. Approximation was assured by appropriate suture, according to the data available.

Emergency laparotomy was done 20 minutes after admission and spontaneous rupture of the uterus was confirmed. The entire amniotic sac was found in the peritoneal cavity, with rupture of the uterine fundus and completely exfoliated placenta. Abdominal cavity was filled up with blood and clots. A dead male fetus was delivered weighing 2150 grams and 44 cm in length. Abdominal exploration was done by a surgeon and a 6 cm large intramural myoma in the back part of the uterine isthmus was revealed. The uterus was sutured by two layer closure. Postoperative follow up was unremarkable and the patient was discharged on postoperative day 4. Ultrasound examination revealed another 6 cm large intramural myoma.

## Discussion

Uterine rupture can occur at any stage of pregnancy but it is most likely in third trimester. It can happen in an intact uterus but it is more frequent in a scarred one. Unscarred uterine rupture is a rare event and it usually occurs in late pregnancy or during labor. It is often related with high parity, abnormal placentation, uterine anomalies, obstetric maneuvers, malpresentation, expressive uterine expressions, injudicious use of oxytocin, uterine diverticula, and chronic corticosteroid use<sup>6,7</sup>.

Risk factors for uterine rupture are uterine scars caused by previous cesarean section, myomectomy, hysteroscopic procedures, and curettage<sup>8,9</sup>. Cesarean

section is the most frequent procedure on the uterus and the leading cause for uterine scar and uterine rupture<sup>10</sup>. A new technique called 'lower segment cesarean section' has decreased the number of uterine ruptures after this procedure but the number of cesarean sections is increasing in total causing increase in the total number of uterine ruptures<sup>7,11</sup>. This 'lower segment cesarean section' results in less scar tissue during the healing process because of less blood and less muscular supply. All this should provide safety for future pregnancies. The risk of uterine rupture increases with shorter inter-pregnancy interval<sup>10,12</sup>. In our case, spontaneous uterine rupture occurred at the scar left after myomectomy. Uterine myoma can have many symptoms and cause infertility. Myoma treatment is one of the most frequent surgical procedures on the uterus<sup>13</sup>. Laparoscopic myomectomy is the gold standard for women with symptomatic fibroids<sup>4</sup>. There is less subjectively reported postoperative pain, less fever, and a significantly shorter hospital stay than in any type of open myomectomy<sup>14</sup>. Every pregnancy after myomectomy, laparoscopic or abdominal, requires careful follow up for the risk of uterine rupture. Spontaneous uterine rupture is a life-threatening obstetric emergency carrying a high risk for the mother and the fetus<sup>15</sup>. Some studies found no difference in perinatal outcome between laparoscopic and abdominal myomectomy, with a high rate of successful vaginal delivery in both groups<sup>16</sup>. The incidence of uterine rupture in pregnancies after laparoscopic myomectomy is 1%<sup>17</sup>. Many obstetricians recommend elective cesarean section for women with prior myomectomy. This practice has led to an increased rate of elective cesarean section. In their study, Weibel *et al.* concluded that the incidence of vaginal delivery was significantly reduced if the uterine cavity was entered. Obstetricians consider entry in the uterine cavity at myomectomy, laparoscopic or abdominal, to be an important factor in determining the method of delivery, the use of oxytocin, and delivery by elective cesarean section<sup>18</sup>. Some studies of post myomectomy with 83% of vaginal deliveries report no uterine rupture<sup>19</sup>. In our case, myomectomy was performed laparoscopically and uterine cavity was entered. The myoma was intramural and 6 cm large. Most obstetricians recommend elective cesarean section in cases like this<sup>20</sup>. However, the patient had previously had one successful vaginal delivery af-

ter myomectomy, which gave a false sense of security for the next pregnancy. Sutures after myomectomy are considered better than coagulation alone. In our case, the uterus was sutured and favorable outcome of the pregnancy was expected, especially after one successful vaginal delivery<sup>21</sup>.

Every sudden abdominal pain in a pregnant woman with uterine scar should be carefully and promptly examined to exclude uterine rupture before further diagnostic procedures. This early time frame is essential for survival of the fetus and sometimes even for the mother<sup>22</sup>. Delivery by immediate cesarean section within 25 minutes improves long-term neonatal neurologic outcome<sup>22</sup>.

As shown in this case report, one successful vaginal delivery after myomectomy is no guarantee for future pregnancies.

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## Sažetak

## RUPTURA MATERNICE U TREĆEM TRIMESTRU NAKON PRETHODNE MIOMEKTOMIJE

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Ruptura maternice je akutno stanje u porodništvu koje može voditi do majčine i/ili fetalne smrti. Rizik za rupturu maternice povezan je s ožiljkom na maternici uzrokovanim prethodnim carskim rezom, miomektomijom, histeroskopskim zahvatom ili kiretažom. Prikazuje se 40-godišnja trudnica u 31. tjednu trudnoće koja je imala spontanu rupturu maternice. Ovo je bila treća trudnoća ove bolesnice koja je iz ranijih trudnoća rodila dvoje zdrave djece. Simptomi su bili praćeni bolovima u trbuhu, povraćanjem i bolovima u desnom ramenu koji su trajali 12 sati. Ultrazvučnim pregledom kod prijma je nađen mrtav plod u trbušnoj šupljini uz slobodnu tekućinu u abdomenu. Prethodno je bolesnica jedanput imala laparoskopsku miomektomiju. Nakon miomektomije je vaginalno rodila. Svakoj boli u trbuhu kod trudnice s ožiljkom na maternici treba pristupiti pažljivo i hitno pregledati te obraditi kako bi se isključila ruptura maternice prije daljnjih dijagnostičkih postupaka. Ovo rano vrijeme prepoznavanja je ključno za preživljavanje fetusa, a ponekad i majke. Ruptura maternice je indikacija za hitni carski rez koji treba učiniti unutar 25 minuta od prvih znakova rupture maternice. Čak niti jedan uspješan porod nakon stanja poslije miomektomije ne jamči da će ožiljak izdržati drugu trudnoću.

Ključne riječi: *Uterina ruptura; Trudnoća; Uterina miomektomija; Laparoskopija – metode; Abdomen, akutni; Prikazi slučaja*