

Uterine rupture after prostaglandin analogues to induce midtrimester abortion

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Summary

Although prostaglandins are largely used and considered safe drugs to induce midtrimester abortion, the literature reports several cases of uterine rupture consequent to their administration. We report the second ever-described case of uterine rupture after administration of gemeprost and sulprostone for midtrimester abortion in a 45 years-old women with scarred uterus. She was admitted to our Unit for termination at 20 weeks' gestation because of trisomy 21 diagnosed by chromosomal analysis of amniotic liquid at 16 weeks' gestation. Five pessaries of gemeprost (one pessary, every 3 hours) were administered into the posterior vaginal fornix. Since the cervix remained closed and uneffaced, another cycle of 5 gemeprost administration was conducted. When the cervix changed in consistency and dilatation, we decided to administrate sulprostone. At the obstetric examination any visible fetus was evidenced. The abdominal ultrasonography showed an empty uterine cavity and the gestational sac with the dead fetus in abdomen. Emergency laparotomy was therefore undertaken. Primary suture of the ruptured uterus was initially attempted but in vain. Therefore, total abdominal hysterectomy was performed to control bleeding and eventual hypovolemic shock. Given the lack of strong evidence in literature and the fact that case reports are not an optimal method for assessing frequency of an event nor the overall risks of a procedure since they frequently report rare single events, other larger studies are needed to assess whether women with multiple risk factors (e.g. advanced age and previous uterine surgery), and administered with prostaglandins' association have a higher risk of uterine rupture.

KEY WORDS: gemeprost, sulprostone, pregnancy termination, uterine rupture.

Introduction

Various surgical and medical procedures for termination of pregnancy in the second trimester have been proposed, although very few of these studies provided sufficient evidence of their safety and effectiveness. Surgical procedures have a 100% success rate with about 5% incidence of complications in an unselected population (1), but to date, there are not studies on large populations with previous caesarean section. In a recent report, Lichtenberg reports two cases of caesarean scar dehiscence after second-trimester abortion by dilatation and evacuation (2). In the last years, the use of prostaglandins has had a significant impact on labour induction in second trimester pregnancies representing an effective alternative to surgical procedures. However, although several authors indicate that the increased risk of scar rupture in patients who undergo midtrimester induction of abortion probably depends on the drug used and its regimen (3, 4), to date, there is not definitive consent on the type of prostaglandin and on the relative route of administration with the best efficacy, safety and acceptability.

Case Report

We report a case of uterine rupture after administration of gemeprost (16, 16-dimethyl-trans- α -prostaglandin E₁ methyl ester) and sulprostone (16 phenoxy-omega-17, 18, 19, 20 tetranor prostaglandin E₂ methylsulfonylamide) for midtrimester pregnancy termination. A healthy 45 years-old woman at her sixth pregnancy, was admitted to our Unit for termination at 20 weeks' gestation because of trisomy 21 diagnosed by chromosomal analysis of amniotic liquid at 16 weeks' gestation. Her obstetric history consisted of i) a vaginal delivery at 40 weeks' gestation, ii) a caesarean delivery with the first of which executed for prolapse of the umbilical cord. She did not take any medication before admission. The preliminary obstetric examination revealed the uterine size consistent with the estimate gestational age. The cervix was long, tubular and closed (Bishop score 0). She was counselled and requested to have the pregnancy terminated. This was done at 20 weeks' gestation by administering gemeprost. Five pessaries of gemeprost (one pessary, every 3 hours) were administered into the posterior vaginal fornix. Since the cervix remained closed and uneffaced, another cycle of 5 gemeprost administration was conducted. This protocol is demonstrated to be effective in inducing first and early second-trimester elective abortion (5, 6). After the second cycle of gemeprost the woman developed painful uterine contractions of increasing severity and an initial cervical dilatation. Since obstetric examination revealed the cervix to be di-

lated and partially changed in consistency, we decided to administer sulprostone (0.5mg/2ml in 250 cc of saline solution, e.v.). After sulprostone infusion, obstetric examination did not evidence any visible fetus. There was a minimal vaginal bleeding. The abdominal ultrasonography showed an empty uterine cavity, the gestational sac with the dead fetus in abdomen and a little echo-free space in the peritoneal cavity. Emergency laparotomy was therefore undertaken. On the anterior uterine wall, the complete dehiscence of the previous hysterotomy wound was well evident. The placenta, still fixed to the uterus, was manually removed after clamping of funiculus and the removal of the fetus. The fetus was a 350 g female with a length of 24 cm. Primary suture of the ruptured uterus was initially attempted but in vain. Therefore, total abdominal hysterectomy was performed to control bleeding and eventual hypovolemic shock. The total blood loss during the surgical procedures was about 1000 ml. Under volume replacement therapy (4 units of packed red blood cells, 7 units of fresh frozen plasma), the patient was sent to our intensive care unit for postoperative management for 2 days. She had a smooth uneventful postoperative recovery and was discharged 8 days later in good conditions.

Discussion

The raising number of caesarean sections has proportionally led to an increased number of patients with scarred uteri among those who require termination of pregnancy. Midtrimester abortion is usually performed by administration of prostaglandins as an effective alternative to surgery (3). As demonstrated by a recent study, the uterine rupture rate with induced trial of labor is significantly higher than with a spontaneous trial of labor (4). With prostaglandin induction the risk increases depending on the drug used and its regimen (3, 7, 8). Both gemeprost and sulprostone are usually administered as an effective and safe way to induce abortion in the midtrimester pregnancy (7-10). The uterine rupture after gemeprost alone or in combination with oxytocin has been already described (11-17). In particular, Chapman et al.,¹⁸ who administered gemeprost plus oxytocine, reported a higher risk of uterine rupture additionally to a doubled need of blood transfusion in patients with scarred uteri compared with women with intact uterus. Notably, recent retrospective studies showed gemeprost alone to be safe and effective in both patients with and without uterine scars, with a very low incidence of complications (19-21). However, some authors conclude that larger multicenter studies are needed to assess the real risk of uterine rupture, especially in women with previous uterine surgery. In another retrospective analysis, De Boer et al. (22) support both the effectiveness and safety of low continuous intravenous sulprostone infusion for labour induction in the event of foetal death or foetal malformations. Also, the authors do not support previous evidence that advanced maternal age is a contraindication. To our knowledge, our study is the second ever-reported case of uterine rupture due to gemeprost in association with sulprostone for second trimester abortion. In particular, Corrado et al. (23) describe the case of cervical rupture in a normal uterus of a 43 years-old second gravida who had in her obstetric history i) a

first trimester miscarriage that required an evacuation of the uterus and ii) a normal vaginal delivery at term. They conclude that uterine rupture remains an actual side effect of this prostaglandin, also when predisposing risk factors as scarred uterus, primigravid patients, age <20 years have been excluded, and gemeprost to ripen the cervix has been used. However, although the pharmacological protocol was quite similar to that used in our study, Corrado et al. describe the case of uterine rupture in a woman without previous uterine surgery, while our patient had caesarean sections in her obstetric history.

Conclusions

Given the lack of strong evidence in literature and the fact that case reports are not an optimal method for assessing frequency of an event nor the overall risks of a procedure since they frequently report rare single events, other larger studies are needed to assess whether women with a uterine scar and administered with gemeprost plus sulprostone have a higher risk of uterine rupture in comparison with women taking only one prostaglandin or other prostaglandins' association. If so, in a woman with multiple risk factors (e.g. advanced age and previous uterine surgery), it could be more appropriate and prudent to try to use only one agent at the lowest possible dose or to choose the safest prostaglandins' associations modulating the drug regimen in terms of doses used and of time intervals between repeated administrations.

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