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CASE REPORT

Uterine Rupture during Labour Induced by Misoprostol

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ABSTRACT

Prostaglandin E_2 has been successfully used for preinduction cervical ripening and labour induction. Recently an alternative prostaglandin E_1 analogue misoprostol is being used instead. It is inexpensive and chemically stable at room temperature. We reported two cases of term pregnancy with uterine rupture using prostaglandin E_1 analogue.

Key words : vaginal misoprostol, uterine rupture, term pregnancy

The preinduction cervical ripening using prostaglandin E_2 (PGE_2, dinoprostone) is generally accepted either in the form of vaginal tablet[1] or intracervical gel.[2] In Ramathibodi Hospital prostaglandin has been used for labour induction with an unfavourable cervix since 1986. Initially prostaglandin E_2 3 mg tablet was crushed and mixed with 3cc of hydroethyl cellulose (K-Y jelly®, Johnson and Johnson) and applied intracervically with good results.[3] Later on the dose of prostaglandin E_2 gel (Prostin E_2®, Upjohn) was reduced to 1.5 mg (half tablet) also with equally good results.[4]

Recently several investigation have described the use of an alternative prostaglandin E_1 analogue misoprostol (Cytotec®, Searle) for preinduction cervical ripening and labour induction.[5-8] Misoprostol is inexpensive, freely available and easy to administer in the vagina. We have previously reported 3 cases of uterine rupture using prostaglandin E_2.[9] We are now reporting two further cases of uterine rupture this time using prostaglandin E_1 analogue, which is a more potent prostaglandin.

Case Report

Case 1. August 1995

A-34-year old gravida 3 para 1 with one spontaneous abortion and a pregnancy terminated at 35 weeks' gestation by caesarean section for severe preeclampsia. The infant weighed 1,800 g now alive and well. This time she was admitted to

the antenatal ward for a repeated caesarean section at 38 weeks' gestation. Throughout her antenatal period, the blood pressure was fluctuate between 130-150 mm Hg systolic and 90-100 mm Hg diastolic. She was diagnosed as having chronic hypertension. During the night of admission, her blood pressure shot up to 170/110 mm Hg and nifedipine 10 mg sublingually was inadvertently ordered. The fetal heart was not detected in the morning and subsequent ultrasound confirmed dead fetus in utero. Since the cervix was unfavourable (Bishop score of 4) misoprostol 100 μg (half tablet) was placed in the vaginal posterior fornix at 7.45 hour. At 17.30 hour spontaneous rupture of membranes occurred and by which time the cervix was 3 cm dilated. The uterine contraction was every 2 minutes 45 seconds lasting 30 seconds. The cervix was fully dilated at 20.15 hour, and a stillborn male infant was delivered by vacuum extraction due to increased blood pressure. The infant weighed 2,810 g.

Severe postpartum haemorrhage occurred immediately after the end of third stage. Examination of the cervix showed a cervical tear right lateral posterior extended into the lower segment. A laparotomy was performed under general anaesthesia, and the tear was found to extend to the insertion of the right-round ligament. The previous lower segment scar was intacted. Subtotal hysterectomy was performed with the repair of cervix. The postoperative period was uneventful.

Case 2. August 1996

A-43-year old gravida 3 para 2 with two previous normal deliveries 14 and 15 years ago. The birthweight was 3,000 and 3,300 g, respectively. The labour was induced at 37 weeks due to pregnancy induced hypertension. Physical examination was normal and on vaginal examination the cervix was found to be unfavourable (Bishop score of 4). In an attempt to ripen the cervix, the patient was given misoprostol 100 μg (half tablet) in the vaginal posterior fornix at 9.00 hour. She was transferred to labour ward at 14.11 hour by which time the cervix was 3 cm dilated, 80% effaced and vertex presentation at station at - 3. The contraction was every 2 minutes 30 seconds with duration of 30-40 seconds. The membranes were ruptured at 14.30 hour. Three hours later the contraction was roughly the same as before and the cervix was 5 cm dilated, 100% effaced with vertex presentation and at station -1. One hour fifteen minutes later the uterine contraction was every 2 minutes 10 seconds with duration of 30 seconds and the fetal heart was 130 beats per minute. Twenty minutes later the patient was found to be in severe hypovolemic shock with blood pressure 70/50 mmHg and pulse 120 beats per minute. The vaginal examination found cervix to be 9 cm dilated with vertex presentation at station -2.

The diagnosis of uterine rupture was made and emergency laparotomy under general anaesthesia revealed an 8 cm rupture in the posterior wall of the uterus, extending from just below the level of the insertion of both round ligaments to the lower segment. The placenta was found to be protruded half way out of the uterus. Stillborn female infant weighed 3,020 g was still inside the uterus. A subtotal hysterectomy was performed. Postoperative period was uneventful.

Discussion

Prostaglandin E is a potent oxytocic agent and is efficient in initiating labour as well as improving the condition of the unfavourable cervix.[1-4] Its use is not without serious adverse

side-effects such as hyperstimulation, fetal distress, and in particular, the risk of uterine rupture.[9] Initially it was thought that the dose used was too high and it was gradually reduced to 0.5 mg (Prepidil, dinoprostone, Upjohn) and still uterine rupture occurred.[10,11] The current available PGE in natural form is very expensive and unstable at room temperature. When the misoprostol was found to be equally if not more effective, its use becomes widespread without knowing the exact dose to use, and being an analogue it is very potent indeed.[5-8] It is certainly less expensive (in Thailand 60 tablets of misoprostol equal to one tablet of Prostin E_2®), and can be kept at room temperature.

In both of these cases there could be some delay in the descend of the fetuses, thus causing the uterine contraction to increase with the build-up of uterine pressure within the uterine cavity leading to uterine rupture. In the first case, the previous scar was intact and vaginal delivery was achieved with vacuum extraction with uterine rupture occurred at the same time. In the second case much the same occurred and the rupture occurred as the cervix was fully dilated causing the head to displace upward. Both cases demonstrated the potency of misoprostol that any slight delay this can occur. Failure to recognize impending uterine rupture made the prevention that more difficult.

Previous reports have suggested that uterine rupture with PGE_2 occurred in patients with prior scarred uterus, or with the use of oxytocin simultaneously or use in multipara. Indeed, as far as we know there is no case of primipara reported with uterine rupture using PGE alone in the unscarred uterus. We strongly recommend that misoprostol be used in primipara only with the lowest dose possible, and oxytocin be used with caution and only absolutely necessary with careful observation for any signs and symptoms of impending uterine rupture. Once detected hyperstimulation of uterine contraction it can be prevented with the use of beta-adrenergic tocolytic drug such as ritodrine or terbutaline.[12,13]

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