Uterine Rupture in Subsequent Pregnancy in a Patient with Previous Uterine Manipulator Associated Uterine Perforation

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ABSTRACT

To report a case who experienced uterine rupture at 38th week of gestation and had a history of manipulator associated uterine rupture.

A 25 years old primigravid woman at 38 weeks of gestation was referred to our hospital with the signs of active labor. Heavy lower abdominal cramps and signs of acute abdomen suggested uterine rupture and emergent cesarean section was performed. A 3 cm in size and circular in shape uterin rupture at the fundus that was imitative of enlarged previous manipulator associated rupture was observed.

A manipulator associated uterine rupture should be repaired when encountered in reproductive ages in order to prevent a possible uterine perforation during subsequent pregnancy.

Keywords: Uterine rupture, Pregnancy, Damaged by uterine manipulators

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Introduction

Uterine rupture during pregnancy is a catastrophic obstetric complication that may cause maternal and fetal mortality and serious morbidity. Risk factors associated with uterine rupture were reported to be previous cesarean section, myomectomy, dilatation curettage and operative hysteroscopy (1). Spontaneous uterine rupture is a rare event during pregnancy. Tip of manipulator may cause uterine rupture when proper insertion is not carried out. Since perforation during uterine manipulations mostly associated with minimal amount of hemorrhage, expectant management is acceptable.

In this report, we aimed to present a case that had a history of previous uterine perforation during uterine manipulation and had uterine rupture during labor. To the best of our knowledge our manuscript is the first to report a case that experienced uterine rupture in pregnancy after manipulator associated uterine perforation.

Case Report

A 25 years old primigravid woman at 38 weeks of gestation was referred to our hospital with signs of active labor. The patient underwent laparoscopic chromopertubation for investigation of primary infertility. Uterine rupture occurred during insertion of the tip of RUMI II manipulator system. Insignificant bleeding at the site of rupture occurred and suturing was not performed. The patient was hemodynamically stable and discharged at postoperative second day without any sign of intra-abdominal bleeding. A spontaneous pregnancy occurred 2 months after the operation. No problem occurred during pregnancy follow up. The patient was admitted to our department with heavy lower abdominal cramps and the signs of acute abdomen suggesting uterine rupture. Amniotic membrane was intact cervical cramps and dilatation were 70% and 2 cm respectively. Total amniotic fluid index was 80 mm in four quadrants and biometric measurements were concordant with the age of gestation. Blood pressure was 110/70 mmHg, heart rate was 98/min. Signs of acute fetal distress and recent onset of anhydramnios was observed during ultrasound examination. Emergent cesarean section was performed with the suspicion of uterine rupture and 1000 ml of blood was observed in peritoneal cavity. A circular uterine perforation 3 cm in size at the uterine fundus that an enlarged imitative of pre-
vious uterine rupture caused by uterine manipulator was de-
tected (Figure 1). Newborn was healthy and had Apgar scores
of 8 and 9 at 1st and 5th minutes, respectively. The site of per-
foration was repaired with continued 1-0 polyglicolic acid su-
tures. Pre-operative and postoperative hemoglobin levels were
13.6 g/dl and 9.4 g/dl respectively. The patient was discharged
at 2nd day after cesarean section. The patient was examined
on 7th day after operation and showed normal clinical, ultra-
sound and laboratory findings.

Discussion
Uterine rupture in pregnancy may occur spontaneously or
by trauma. The overall incidence of rupture of the pregnant
uterus was reported to be 1:2428 deliveries (0.04%) (2). The
presence of a myometrial surgical incision on uterine wall is
known to be the major risk factor for uterine rupture. Other risk
factors include grand multiparity, extreme use of uterotonic
drugs, prolonged labor, uterine abnormalities, dystocia, abnor-
mal placentation, history of dilatation and curettage and hys-
teroscopy (3,4). Nevertheless, uterine rupture caused by uterine
manipulator was reported to be rare (5). Risk factors for uter-
ine rupture in subsequent pregnancy after gynecologic surgery
were investigated by Chao et al. However, manipulator associ-
ated uterine rupture was not found to be a risk factor for sub-
sequent uterine rupture during pregnancy (6). Uterine rupture
should be taken into consideration when signs of acute ab-
domen occur even in a primigravid patient. Although chro-
moperturbation with the RUMI manipulator is a simple proce-
dure during laparoscopic surgery, uncontrolled insertion of the
tip of manipulator may result in perforation on uterine wall.
Silent or highly suspected uterine perforation during curettage
or hysteroscopy was reported to be associated with uterine rup-
ture in subsequent pregnancies (2). Expectant follow up of pa-
tient is the most preferred management when uterine rupture
encountered during uterine manipulation. Although expectant
management is regarded to be safe, the condition may result in
significant obstetrical morbidity. However, the absolute risk of
uterine rupture during active labor after manipulator associated
uterine perforation is not known. The possible explanation of
the rupture in a gravid uterus after manipulator associated uter-
ine perforation may be the short time interval between previous
operation and active labor. Insufficient tissue regeneration and
less tissue strength that were caused by earlier conception after
uterine manipulator associated rupture were the possible
causes of uterine perforation in the current case report.
Although evidence suggest expectant management of uterine
perforation caused by uterine manipulator, our case report
showed the importance of repairing the rupture in order to pre-
vent a subsequent uterine perforation during pregnancy.
Reporting manipulator associated uterine rupture in operative
notes is of importance in order to be aware of a possible uter-
ine perforation during pregnancy. Patients should be warned
against earlier conception that may be associated with subse-
quent uterine rupture during pregnancy.

Conclusion: A manipulator associated uterine rupture should be repaired when encountered in re-
productive ages in order to prevent a possible uter-
ine perforation during subsequent pregnancy.

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