

A prospective comparative study of a trial of labor after cesarean vs. elective repeat cesarean section (ERCS) in view of maternal outcomes

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Abstract

Background: There has been a wide range of success rates reported for those achieving vaginal birth following a planned vaginal birth after cesarean (VBAC).

Objective: (1) To find out the incidence of rupture uterus and dehiscence in patients with trial of labor after cesarean section, (2) to evaluate the incidence of vaginal delivery in women who had previously undergone a cesarean section, and (3) comparison of a trial of labor after cesarean with an elective repeat cesarean section (ERCS) in view of maternal outcomes.

Materials and Methods: This prospective observational study was carried out in the Department of Obstetrics and Gynecology, PDU Medical College, Rajkot, Gujarat, India, from January 1, 2014 to June 30, 2015.

Result: During the study period, 10,315 deliveries were noted, of which patients who underwent a previous cesarean section were 1,082. Among the previous cesarean cases, trial of labor was given for 222 of them, of which, successful VBAC was found in 136 (61.26%) cases, while in 86 (38.74%) cases, an emergency cesarean was performed. In 860 cases, ERCS was done. Incidence of rupture and dehiscence in trial of labor group was 4.5% (10 cases) and 2.7% (6 cases), respectively, while no rupture was noted in the ERCS group. Scar dehiscence was found in 8 cases (0.93%) in the ERCS group. In 2 cases among the trial of labor group, obstetric hysterectomy was performed for rupture, while in 2 cases, bladder injury was noted. No maternal morbidities have been noted in ERCS group. No mortality has been recorded in study period.

Conclusion: Hence, decision for trial of labor or ERCS should be taken as per the patient's choice, through detailed history and examination. Even though many studies showing success rate of VBAC higher, maternal morbidities associated complications of trial of labor are life threatening, and we conclude ERCS is safer when compared with VBAC in view of maternal outcome.

Key words: Rupture uterus and dehiscence, vaginal birth after cesarean (VBAC), elective repeat cesarean section (ERCS)

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Introduction

Uterine rupture is an unusual problem of pregnancy possibly resulting in extreme maternal and fetal morbidity and mortality.^[1] In India, it is responsible for 5%–10% cases of all maternal deaths even now.^[2] With an increasing era of cesarean section (CS), it poses some documented risk to the mother in subsequent pregnancy such as placenta praevia and accrete or rupture of previous scar.

There are two types of uterine rupture, complete and incomplete, distinguished by whether or not the serous coat of the uterus is involved.^[3] In the former, the uterine content including fetus and, occasionally, placenta may be discharged into the peritoneal cavity; whereas in the latter, the serous coat is intact, and the fetus and the placenta are inside the uterine cavity.^[4] The complete variety is more dangerous of the two varieties.^[5,6] Rupture of uterus during labor is more threatening than that occurring in pregnancy, because shock is greater, and infection cannot be avoided.^[7,8] The damage to the uterus is sometimes beyond repair, and a hysterectomy is required.

In a WHO systematic review of uterine rupture worldwide, the median incidence was 5.3 per 10,000 births.^[9] The majority of cesarean uterine incisions are low-transverse, and this type of incision presents the lowest risk for rupture in subsequent pregnancies.^[10]

Materials and Methods

This prospective observational study was carried out in the Department of Obstetrics and Gynecology, PDU Medical College, Rajkot, Gujarat, India, from January 1, 2014 to June 30, 2015.

During this study, the patients (booked or unbooked) who had undergone a previous CS (irrespective of numbers) either with labor pain or posted for elective repeat cesarean section (ERCS) attending the labor room of the Department of Obstetrics and Gynecology, PDU Medical College, Rajkot, were selected.

Detail history of each patient was recorded. Special attentions on observations such as age, parity, no previous CS, indications of previous CS, and any vaginal deliveries were noted. In both emergency and ERCS, intraoperative and postoperative findings and complications were noted.

This is an observational study that included data collection from patients received in this institute. It does not pose any risk to the patients and does not pass any cost to the institute.

Result

During the study period, 10,315 deliveries were noted, of which patients who had undergone a previous CS were 1,082. Among the previous cesarean cases, trial of labor was given for 222 cases, of which successful vaginal birth after cesarean (VBAC) was found in 136 cases (61.26%), while in 86 (38.74%) cases emergency cesarean was performed. In 860 cases, ERCS was done.

Of the 1,082 patients, the common age group was 21–30 years (77.17%). Of the 1,082 cases, 93 (8.5%) were preterm, while 989 (91.5%) were term having term pregnancy. No rupture or dehiscence was noted in preterm patients.

Incidence of rupture and dehiscence in trial of labor group was 4.5% (10 cases) and 2.7% (6 cases) respectively, while

no rupture was noted in the ERCS group. Scar dehiscence was found in 8 cases (0.93%) in the ERCS group.

In 2 cases, among the trial of labor group, obstetric hysterectomy was performed for rupture, while in 2 cases, bladder injury was noted. No maternal morbidities have been noted in ERCS group. No mortality has been recorded in study period.

Discussion

There are numerous reasons that influence the decision to proceed with either a trial of labor after previous cesarean delivery or ERCS delivery. For the majority of women with a previous cesarean delivery, a trial of labor should be encouraged. There are few absolute contraindications.^[11]

Uterine rupture is called as a disarray of the uterine muscle continuing to and including the uterine serosa or disarray of the uterine muscle with extension to the bladder or broad ligament. Uterine dehiscence is defined as disruption of the uterine muscle with intact uterine serosa.^[12]

In our study, the success rate of VBAC is 61.26%. Nielsen *et al.*,^[13] in their study for 10 years, reported the delivery of 24,644 patients. Of these women, 2036 (8.3%) had previously undergone CS. A trial of labor was allowed in 1,008 of these patients and 92.2% delivered vaginally. The incidence of uterine rupture in this trial of labor group was 0.6%.

In 1996, a study of 6,138 women from Nova Scotia with a previous CS was published reporting that the major maternal complications, including uterine rupture were almost doubled (1.6% vs. 0.8%) in the trial of labor after cesarean group when compared with the group of women who underwent an ERCS.^[14]

In our study, incidence of rupture and dehiscence in trial of labor group was 4.5% (10 cases) and 2.7% (6 cases), respectively, while no rupture was noted in the ERCS group. Scar dehiscence was found in 8 cases (0.93%) in the ERCS group. So, we also found a higher rate of rupture or dehiscence in trial of labor group when compared with the ERCS group.

Conclusion

In our study, the success rate of VBAC is 61.26%; incidence of rupture and dehiscence in trial of labor group was 4.5% (10 cases) and 2.7% (6 cases), respectively, while no rupture was noted in the ERCS group. Scar dehiscence was found in 8 cases (0.93%) in the ERCS group. So, we also found a higher rate of rupture or dehiscence in trial of labor group when compared with the ERCS group.

So, decision for trial of labor or ERCS should be made by patient's choice, through detailed history and examination. Even though many studies showing success rate of VBAC higher (around 92%),^[13] maternal morbidities associated complications of trial of labor are life threatening, and we conclude ERCS is safer when compared with VBAC in view of maternal outcome.

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