



RESEARCH ARTICLE

FETOMATERNAL OUTCOME IN PREGNANCIES WITH PREVIOUS CASERAEAN AFTER CERVICAL RIPENING WITH FOLEYS CATHETER AND INDUCTION OF LABOUR

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ABSTRACT

Background: The ever rising caesarean rates in Obstetric practice are a method of serious concern. A very common indication of Caesarean is history of previous caesarean. One of the reasons for this is the caution that is to be used for use of prostaglandins in these patients for cervical ripening. There are alternate methods of cervical ripening well documented in literature. One of the methods is extra amniotic use of Foleys catheter for cervical ripening which may also induce labour. **Methods:** The study was carried out at a Government run Maternity Hospital in an urban setting with round the clock availability of caesarean section. 75 women who met the inclusion criteria were selected after consent was taken for cervical ripening and induction of labour. **Results:** Out of 75 women, 46 (61.3 %) had successful induction of labour resulting in vaginal delivery. The other 29 (38.7%) patients went for lower segment caesarean section (LSCS). Out of those who went for LSCS, 09 patients had meconium staining of liquor and were taken for LSCS. There were no cases of scar rupture. The Foleys catheter was expelled in an average of 12 hours in the unsuccessful group compared to 5.5 hours in the success group. **Conclusion:** The Foleys catheter is a safe, cheap and easy to use method of cervical ripening in pregnancies with previous LSCS. It significantly reduces the chances of repeat caesarean in patients with previous LSCS.

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INTRODUCTION

The management of a pregnancy with regards to mode of delivery in cases with history of previous caesarean sections have always been a matter of interesting debate. There was a time when it was said, that one a caesarean, always a caseraean (Mishra *et al.*, 2014). Later, the scene changed to the other side completely and a lots of these patients went for induction of labour. The complications increased. Finally, a middle path with guidelines for trial of vaginal delivery after caesarean (TOLAC) were elucidated. Induction of labour involves cervical ripening to a favourable Bishops Score as a prerequisite to success. The Cochrane review suggests that Foleys catheter is a safe and equally effective method as compared to prostaglandins in induction of labour (Jozwiak *et al.*, 2013). The added advantage of use of extra amniotic Foleys Catheter for cervical ripening and induction of labour is increased safety as compared to prostaglandins in pregnancies with history of previous caesarean (Ledingham *et al.*, 1999; Shi *et al.*, 2000).

MATERIALS AND METHODS

The study was carried out at a Government run Maternity Hospital in an urban setting with round the clock availability of caesarean section. The patients were selected as per inclusion and exclusion criteria mentioned below.

Inclusion Criteria

- History of one previous LSCS
- Singleton pregnancy
- No associated co- morbidity
- Longitudinal Lie
- Period of gestation more than 39 weeks

Exclusion Criteria

- Previous > one caesarean
- Obstetric or medical co- Morbidity
- CPD
- Estimated fetal weight > 3.5 Kg

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- Previous uterine surgery like myomectomy, hysterotomy, classical or unknown method of caesarean.
- PROM

A prospective study was carried out over a period of one year. 75 women meeting the criteria were included in the study for TOLAC. The procedure was explained and consent taken. The patients were examined after completion of 39 weeks of gestation. The Bishops score was calculated. Those having a Bishops score of < 6 were taken for cervical ripening with Foleys Catheter. The catheter was placed extra amniotic after cleaning the vagina. The catheter tip was held by an artery forceps and was gently advanced through the cervix for about 5 cm. The balloon was inflated and pulled back so that it abutted the cervix. The Foleys catheter was strapped to the thigh. A NST trace was obtained. The patient was monitored in labour room. The Bishops score was re-assessed after 12 hours or if the patient went in labour earlier or she ruptured her membranes. The labour was later augmented if required with Inj Oxytocin infusion and ARM. The relevant data was collected as per the proforma and analysed.

RESULTS

Out of 75 women, 46 (61.3 %) had successful induction of labour resulting in vaginal delivery. The other 29 (38.7%) patients went for lower segment caesarean section (LSCS).

Table 1. Age Group Analysis

| S No | Age group (years) | Number of Cases | % of total | Successful Induction | % | Failed Induction | % |
|------|-------------------|-----------------|------------|----------------------|----|------------------|------|
| 1 | 20-25 | 28 | 37.3 | 18 | 64 | 10 | 26 |
| 2 | 26- 30 | 39 | 52 | 26 | 67 | 13 | 13 |
| 3 | >30 | 8 | 10.7 | 2 | 25 | 6 | 75 |
| 4 | Total | 75 | 100 | 46 | 61 | 29 | 38.7 |
| 5 | Mean Age | | | | | | |

Table 2. Nature of Previous LSCS – Elective / Emergency

| S No | Nature Of LSCS | Number | % |
|------|----------------|--------|-----|
| 1 | Elective | 12 | 16 |
| 2 | Emergency | 63 | 84 |
| | Total | 75 | 100 |

Table 3. Indication of Previous LSCS

| S No | Indication for previous LSCS | Number | % |
|------|---|--------|------|
| 1 | Big Baby | 2 | 2.7 |
| 2 | Malpresentation (Breech/ Transverse Lie) | 4 | 5.3 |
| 3 | Foetal Distress | 35 | 46.6 |
| 4 | Non Progress of labour | 19 | 25.3 |
| 5 | Failed Induction | 15 | 20 |
| | Total | 75 | 100 |

Table 4. Comparison of Present Outcome with Indication of Previous Caesarean

| S No | Indication for previous LSCS | Number | Successful Induction | % |
|------|--|--------|----------------------|------|
| 1 | Big Baby | 2 | 1 | 50 |
| 2 | Malpresentation (Breech/ Transverse Lie) | 4 | 4 | 100 |
| 3 | Foetal Distress | 35 | 30 | 85.7 |
| 4 | Non Progress of labour | 19 | 6 | 31.5 |
| 5 | Failed Induction | 15 | 5 | 33.3 |
| | Total | 75 | 46 | 61.3 |

Table 5. BISHOP score – Before and after Foleys insertion and comparison to success of induction

| S No | | Before/ Final After Foleys Intervention | Mean BISHOP | % Change |
|------|----------------------|---|-------------|----------|
| 1 | Successful Induction | Pre Foleys Insertion | 3.3 | 172 |
| | | Final After Foleys Intervention | 9.0 | |
| 2 | Failed Induction | Pre Foleys Insertion | 3.0 | 93.3 |
| | | Final After Foleys Intervention | 5.8 | |

Table 6. Time Interval For Foleys Expulsion and correlation with outcome

| S No | | Time Interval For Foleys Expulsion (Mean time in Hours) |
|------|----------------------|--|
| 1 | Successful Induction | 5.5 |
| 2 | Failed Induction | 12 |

Table 6. Mean Birth Weight and correlation with Outcome

| S No | | Mean Birth Weight(Kg) | | |
|------|----------------------|------------------------|--|--|
| 1 | Successful Induction | 2.9 | | |
| 2 | Failed Induction | 2.8 | | |

Table 7. Mean Gestational Age and correlation with Outcome

| S No | | Gestational Age (Weeks of gestation) |
|------|----------------------|---------------------------------------|
| 1 | Successful Induction | 39.8 |
| 2 | Failed Induction | 39.6 |

Table 8. Indication for LSCS in current Pregnancy

| S No | Indication | Number | % |
|------|------------------|--------|------|
| 1 | Foetal Distress | 09 | 31 |
| 2 | Failed Induction | 20 | 68.9 |
| | Total | 29 | 100 |

DISCUSSION

The conundrum of induction of labour in pregnancy with previous caesarean has generated lots of discussion over the past decades. There is a concern about use of prostaglandins for cervical ripening and induction of labour in these patients since there is a worry about hyperstimulation and scar rupture. The mechanical methods of cervical ripening, which include the Foleys catheter are more gentle but chances of infection may be high.⁵ The balloon of the Foleys above the cervix causes mechanical dilatation and leads to cervical ripening and sometimes onset of labour (Heinemann *et al.*, 2008). Trials have been conducted which have shown equal efficacy between Foleys catheter and PgE2 inserts (Cromi *et al.*, 2012; Jozwiak *et al.*, 2011). The rate of success of induction of labour in pregnancy with previous LSCS has been reported to be varying from 50 to 75% (Agnew, 2009; Karjane *et al.*, 2006). We used the Foleys catheter placed extra amniotic above the cervix to ripen the cervix when the Bishops score was unfavourable.

Demographic Profile: Out of 75 patients taken for the study, 37.3 % patients were in 20 to 25 years age group, where as 52% patients were in 26 to 30 years age group. 10. 7 % patients were more than 30 years old. The success rate in both 20 to 25 and 26 to 30 years age group were comparable, 64 and 67 % respectively.

The demographic profile is comparable to earlier studies (Guinn *et al.*, 2000; Goldman *et al.*, 1999; Rouben *et al.*, 1993). Gestational Age: The mean gestational age in the successful group was 39.8 and in the failed induction group, it

was 39.6. There was no statistically significant difference between the two.

Impact of Indication of Previous LSCS: The patients who had previous LSCS because of big baby, foetal distress or malpresentation had a very good success rate of 50%, 85 % and 100% respectively. This was in contrast to those who had earlier LSCS due to non progress of labour or failed induction where the success rate was only 31.5 and 33.3 % respectively. This indicated inherent problem, either in the maternal pelvis or uterine contractility.

Bishops Score and its effect on outcome: The Bishops score has a great predictive value for the success. In the successful induction group, the Bishops score changed from mean of 3.3 to 9, a change of 172%. In the group where induction of labour failed, the mean change was from 3.0 to 5.8 only, showing a change of 93.3%. Thus, importance of Bishops score to predict the successful outcome is again evident.

Time for Expulsion of Foleys catheter: There was a statistically significant difference in the time taken for expulsion of Foleys in the successful and failed induction groups, 5.5 hrs as compared to 12 hours. The longer the Foleys stays in place, the better are the chances of success.

Birth Weight: The mean birth weight was not statistically different in the two groups.

Conclusion

Induction of labour in properly selected patients with history of earlier LSCS can be taken for induction of labour with Foleys catheter with minimal complications and a good success rate. This can result in saving morbidity and mortality due to repeat surgery and anaesthetic complications. It will also prove to be financially beneficial and reduce the hospital stay.

REFERENCES

Agnew G., Turner MJ. 2009. Vaginal prostaglandin gel to induce labour in women with one previous caesarean section. *J Obstetric Gynaecol.*, 29(3):209-11.
Cromi A., Ghezzi F., Uccella S., Agosti M., Serati M., Marchitelli G. *et al.* 2012. A randomized trial of preinduction cervical ripening: dinoprostone vaginal insert versus double-balloon catheter. *Am J Obstet Gynecol.*, Aug; 207(2):125-e1.

Goldman JB., Wigton TR. 1999. A randomized comparison of extra amniotic saline infusion and intra cervical dinoprostone gel for cervical ripening. *Obstet Gynecol.*, 93:271-4.
Guinn DA., Goepfert AR., Christine M., Owen J., Hauth JC. 2000. Extra-amniotic saline, laminaria, or prostaglandin E 2 gel for labor induction with unfavorable cervix: a randomized controlled trial. *Obstet Gynecol.*, Jul 31;96(1):106-12.
Heinemann J., Gillen G, Sanchez-Ramos L, Kaunitz AM. Do mechanical methods of cervical ripening increase infectious morbidity? A systematic review. *Am J Obstet Gynecol.* 2008 Aug 1;199(2):177-88.
Jozwiak M., Rengerink KO., Ten Eikelder ML., van Pampus MG., Dijksterhuis MG., de Graaf, IM. *et al.* 2013. Foley catheter or prostaglandin E2 inserts for induction of labour at term: an open-label randomized controlled trial (PROBAAT-P trial) and systematic review of literature. *Eur J Obstet Gynecol Reprod Biol.*, Sep;170(1):137-45.
Jozwiak, M., Rengerink, KO., Benthem M., van Beek E., Dijksterhuis MG., de Graaf IM., *et al.* 2011. Foley catheter versus vaginal prostaglandin E2 gel for induction of labour at term (PROBAAT trial): an open-label, randomised controlled trial. *Lancet.* Dec 17;378(9809):2095-103.
Karjane NW., Brock EL., Walsh SW. 2006. Induction of labor using a foley balloon, with and without extra-amniotic saline infusion. *Obstet Gynecol.*, Feb;107(2, Part 1):234-9.
Ledingham MA., Denison FC., Kelly RW., Young A., Norman JE. 1999. Nitric oxide donors stimulate prostaglandin F2 α and inhibit thromboxane B2 production in the human cervix during the first trimester of pregnancy. *Molecular Human Reproduction.* Oct;5(10):973-82.
Mishra R. 2014. Management of labour. Renu Mishra. Ian Donald's, Practical obstetric problems. 7th ed. BI publications: New Delhi, :584.
Nooh A. 2012. Is it worth inducing labour in women with a previous caesarean delivery. *J Obstet Gynaecol.* Feb; 32(2):141-4
Rouben D., Arias F. 1993. A randomized trial of extra-amniotic saline infusion plus intracervical Foley catheter balloon versus prostaglandin E2 vaginal gel for ripening the cervix and inducing labor in patient with unfavorable cervixes. *Obstet Gynecol.*, 82:290-4.
Shi L., Shi SQ., Saade GR., Chwalisz K., Garfield RE. 2000. Studies of cervical ripening in pregnant rats: effects of various treatments. *Molecular Human Reprod.* 2000 Apr;6(4):382-9.
