USE OF FOLEY'S CATHETER TO IMPROVE THE CERVICAL SCORE PRIOR TO INDUCTION OF LABOUR

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With the expanding indications for induction of labour in modern obstetrics, especially planned induction, the importance of having an ideal method cannot be overemphasized. The ideal method would be one that combines safety for the mother and foetus, convenience for the patient and medical staff, carries a short induction-delivery interval and is as far as possible devoid of side effects.

There is usually a period of several days, at least, when the prospect of induction can be anticipated. Despite this being so, the cervix is found in quite a proportion of the cases to be long, firm and closed. The stage is thus set for an awkward amniotomy and a protracted early phase of dilatation and effacement, inspite of full doses of oxytocin, culminating in a caesarean section for foetal distress or failure to progress.

With local conditions particularly unfavourable for induction, i.e. a long, firm cervical canal not admitting a finger, it is prudent to prepare the ground before amniotomy, with intelligent foresight. In the present study, the method used for the purpose is a local mechanical device i.e. Foley's catheter (18 FG) inflated with 35 cc normal saline, to improve the cervical ripening overnight.

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Material and Methods

In our study we have selected 100 patients at term (37 weeks of gestation onwards) including primiparae, multiparae and grandemultiparae.

Indications for induction were as follows:

Planned induction in obstetrically normal women	—55
Patients with past term pregnancy	—20
Hospitalised patients with settled toxaemia of pregnancy (including Eclampsia)	—11
Patients with bad obstetrical history	— 3
Patients with a previous LSCS	— 2

In the selected patients, foetal maturity was assessed clinically and in doubtful cases by study of amniotic fluid. The evening prior to the planned induction, cervical scoring was done according to the Bishop score and under complete asceptic precautions, a Foley's catheter (18 FG) was inserted in the extra-amniotic space transcervically with the help of a bivalve speculum and a sponge holding forceps, and retained with 35 cc of sterile normal saline overnight. Patient was put

on a broad spectrum antibiotic. On the following morning, the catheter was deflated and removed, if not already expelled during the night (a few cases). Rescoring of the cervix was done. In case of fair improvement, ARM was done and Pitocin drip started alongwith, after evacuation of the bowel. In cases with low score gain, ARM was postponed till desired and oxytocin drip alone was started.

In the majority of cases, 2 units of Pitocin/Bottle, i.e. 540 cc of 5% Dextrose (except in grandmultiparae in whom 0.5-1 unit/bottle was used) was kept as standard and rate of drip adjusted according to the contractions per 10 minutes—average three.

Careful and continuous watch was kept on foetal heart and progress of labour throughout the induction-delivery interval. Outcome of labour was noted as normal vaginal delivery, forceps delivery or caesarean section with indications.

Patient was kept in hospital for seven days post-partum and any significant problem noted.

Observations

Results

With average pre-treatment score of 2.87 ± 1.46, 3.33 ± 1.69 and 3.33 ± 0.45 in the 3 groups i.e. primiparae, multiparae and grandmultiparae, Foley's catheter retained overnight improved the cervical score to 8.19 ± 1.95, 7.44 ± 2.28 and 5.33 ± 0.46 respectively. Pre-treatment V/S post-treatment cervical score 'P' value calculated using 't' test came out to be less than 0.001 in all the 3 groups. This is statistically highly significant. This appreciable score gain helped in reducing the I.D.I.

The delivery was achieved in 52 primiparae, 45 multiparae and 3 grandmultiparae with various indications over 37 weeks gestation in 7.87 ± 4.57, 6.81, 1.84 and 8.67 ± 1.91 hours respectively after cervical ripening. 5 primiparae and 8 multiparae went into labour with Foley's catheter alone.

Out of 100 patients taken for the study, 40 primiparae, 37 multiparae and 3 grandmultiparae had normal vaginal delivery, while 9 primiparae and 3 multiparae, had forceps delivery. Caeserean section was done only in 5 primiparae and 3 multiparae. In 7 of them, it was the poor post-treatment score observed which led to a slow progress of labour, out of this 4 patients developed foetal distress and in 1 case cord prolapse was the main indication.

There were 15 patients with a previous unsatisfactory labour record. 85% of these had a satisfactory outcome of labour (normal vaginal delivery).

Slight traumatic vaginal bleeding was encountered while inserting the Foley's catheter only in 4 patients with no other major complication. The bleeding ceased spontaneously. Mild neonatal jaundice and mild pyrexia were observed in 3 babies each. There was no perinatal loss.

Discussion

The results from this limited study show that Foley's catheter placed in the extra-amniotic space, transcervically has proved an effective method of cervical ripening prior to induction of labour. The score gain and the post-treatment score at which the induction was undertaken reduced the induction-delivery interval appreciably and also favourably affected the success of induction.

Embrey and Mollison (1967), used a

Observations

Results of the Study

Sr. No.		Primiparae	Multiparae	Grandemulti-parae
1.	Number of patients	52	45	3
2.	Maternal age (years) Mean ± S.D.	23.4 ± 3.9	29.6 ± 4.6	35.0 ± 1.4
3.	Gestational age at induction (weeks) Mean ± S.D.	39.6 ± 1.4	39.3 ± 1.3	38.0 ± 0.8
4.	Patients with unsatisfactory previous labour record	—	14	—
5.	Pre-treatment cervical Score (Mean ± S.D.)	2.87 ± 1.46	3.33 ± 1.69	3.33 ± 0.47
6.	Post-treatment cervical score (Mean ± S.D.)	8.34 ± 2.07	7.57 ± 1.78	5.33 ± 0.43
7.	Patients who delivered with catheter alone (No. & percent)	5 (9.5%)	8 (17.7%)	—
8.	Induction delivery interval in patients who delivered with catheter alone (Hours) mean ± S.D.	9.6 ± 1.52	6.5 ± 1.9	—
9.	Induction delivery interval in patients (excluding C/S) who were induced with ARM &/or Pitocin drip (hours) Mean ± S.D.	7.8 ± 4.57	6.7 ± 1.84	8.67 ± 1.91
10.	Amount of 5% Dextrose (C.Cs) with Pitocin used. Mean ± S.D.	478 ± 226.4	323 ± 126.2	350 ± 40.8
11.	Outcome of labour			
	No. of normal deliveries	40	37	3
	No. of forceps deliveries	9	3	—
	No. of caesarean section	3 (5.7%)	5 (11.1%)	—
	for failed induction	2	2	—
	for foetal distress	1	2	—
	for cord prolapse after ARM	—	1	—
12.	Birth weight of babies (lbs.) Meau ± S.D.	6.59 ± 0.59	6.8 ± 0.82	6.3 ± 0.25

Foley's catheter to ripen the cervix prior to surgical induction of labour but the improvement was not quantitatively assessed. The main argument against the use of Foley's catheter has been the risk of introduction of infection and accidental rupture of membranes. In our study, however, none of the patients had accidental rupture of membranes; antepartum, intrapartum or post-partum pyrexia attributable to the use of Foley's catheter because complete aseptic precautions were taken and patient put under antibiotic cover.

The results achieved using Foley's catheter are comparable with the study done by other authors using other methods (Ezimokhai & Nwabineli, 1980).

This has proved a safe and a cheap method in a poor country like ours. An added advantage is the fact that Foley's catheter is easily available. The practice of this method can help minimize the load on obstetrical centres catering to large populations.

References

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