Original Article

Gynae & Obs

Role of Foleys Catheter for Pre-Induction Ripening of Cervix

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ABSTRACT

The unripe cervix may present a problem when delivery is indicated prior to the Spontaneous onset of labour.
Objective: To assess the role of Foleys' catheter in improving cervical score prior to Induction of labour.
Study Design: Observational type of study.
Place and Duration of Study: This study was conducted in the Department of Obstetrics and Gynecology, Ghulam Muhammad Mahar Medical College Teaching Hospital Khairpur, Sindh during six months period from January to June 2012.
Materials and Method: Foley's catheter was used for pre-induction cervical Ripening in fifty patients with medical and Obstetrical indication for induction Of labour with unfavorable cervix. The study group comprised 35(70%) primigravida And 15(30%) multigravida. The mean maternal age was 20-35 years. Foleys catheter
No: 18-22 was inserted in fully aseptic condition extra amniotic up to the level of Internal cervical os and was removed after 24 hours. Pre and post treatment cervical Condition was assessed by Bishop's score.
Results: Foleys was inserted in 50 patients for pre-induction ripening of cervix. Thirty (60%) out of 50 patients delivered spontaneous vaginal delivery, 11(22%)Delivered by caesarean section due to failure to progress, fetal distress and CPD. Mean induction to delivery interval was 12.72hours.There were no cases of infection, Ruptured membranes, hemorrhage or other complications attributed to balloon Catheter used.
Conclusion: Pre-induction cervical ripening with extra amniotic Foleys catheter Balloon has the advantages of being effective, simple, economical and free of Systemic serious side effects.
Key Words: Foleys catheter, Labour induction, cervical ripening, Bishop Score.

INTRODUCTION

Induction of labour is common in Obstetric practice. According to the most current Studies, the rate of induction is varies from 9.5 to 33.7% of all pregnancies annually. In the absence of a ripe or favorable cervix, a successful vaginal birth is less likely. Cervical ripening or preparedness for induction should be assessed before a regimen is selected. Assessment is accomplished by calculating a Bishop score. When the Bishop score less than 6, it is recommended that a cervical ripening agent be used before labour induction.[1]

In 1964, Bishop was the first attempt to quantify the physical examination of the cervix by introducing a numeric scoring system. There are numerous occasions, when there is a specific indication for induction of labour because of maternal or fetal complication; the initiation of labour is achieved by artificial means. When the uterine cervix is unripe, is associated with frequent maternal complications and rates of induction failure and caesarean delivery.[1,2] Many techniques have been attempted to ripen the unfavorable cervix and enhance the changes necessary for labour in the lower uterine segment.[3] Although systemic or local administration of ''ripening'' hormones (oxytocin, prostaglandins)have gained wide-spread use in recent years, mechanical methods for cervical ripening are less popular. Experience with the former methods (primarily prostaglandins) suggests that the remarkable success rates may be associated with significant, lethal, unwanted effects on the mother, fetus or newborn.[4] The aim of this study was to assess the role of Foleys catheter in improving cervical score prior to induction of labour.

MATERIALS AND METHODS

The present study was conducted in the department of Obstetrics and Gynecology, Ghulam Muhammad Mahar Medical College Teaching Hospital Khairpur Sindh, during six month periods between January to June 2012. Total number of 50 cases consisting of 35 primigravida and 15 multiparus requiring induction of labour for various conditions were included in the study.

Inclusion criteria were gestational age between 28-41 weeks, singleton pregnancy. Patients with clinically assessed contracted pelvis, history of bleeding per vaginum, cervical dilatation more than 2cm were excluded from the study. Each patient was subjected to cervical scoring by Bishop Score prior to the procedure. Patients having cervical dilatation more than 2cm and Bishop Score more than 4 were not taken for procedure. Foleys self-retaining catheter No: 18-22 with 40-50 cc capacity of balloon was used. The vaginal portion of the uterine cervix was exposed with a sterile speculum and cleaned thoroughly with antiseptic solution. Under direct vision catheter was inserted through the external cervical os, and balloon was inflated with 40cc of

N/saline and catheter was kept in place by applying sticking plaster over it on the thigh of patient. Patient was put on broad spectrum antibiotics after that continuous monitoring of fetal heart sound at short interval was done.

After 24 hours catheter was taken out by deflating the balloon and again cervical scoring was done. If there was significant improvement in cervical score, syntocinon drip was started and artificial rupture of membranes was done.

Outcome of labour was noted as normal vaginal delivery or lower segment caesarean section, induction to delivery interval and any complication if occur were also recorded.

RESULTS

In this study the maximum number of patients 79.1% belongs to age group 21-30 years. The mean gestational age in this study was 28-41 weeks as shown in table: I

Table No.1Demographic profile of study population

Total No: of patients	50
Mean maternal age	20-35 years
Mean gestational age	28-41 weeks
Mean parity	P1-5
Pre-treatment cx score	2
Post-treatment cx score	6
No: of primi pts:	35
No: of multi pts:	15
Mean induction to delivery interval	12.72 hours

It was seen that postdatism (after 40 weeks) was a major indication for cervical ripening 30(60%). Intrauterine death of fetus was formed another group 10 (24%), there was six cases of pre-eclampsia needed induction as shown in table: II

Table No. 2: Indication for induction of labour

Indication	No: of Patients	Percentage
Postdatism	30	60%
Intrauterine fetal death	12	24%
Pre-eclampsia	03	06%
Abnormal fetus	02	04%
IUGR	03	06%

(IUGR= Intra-uterine growth retardation)

On assessment of pre-treatment Bishop's scoring, it was observed that all the cases had cervical scoring from 0-4 Bishop score. Maximum patients after inserting Foleys catheter gained cervical score between 09-10, while there was no patient below Bishop score 06.

In 34 patients catheter was expelled their own before 24 hours, While 16 patients catheter was removed after 24 hours.

After removal or expulsion of catheter syntocinon drip was started and artificial rupture of membrane was done for rapid progress of labour.

Regarding delivery outcome 30(60%) patients delivered by spontaneous vaginal delivery, 9(18%) patients required instrumental delivery by means of vacuum or forceps. Eleven (22%) patients delivered by lower segment caesarean section because of failed induction, CPD or fetal distress. Mean induction to delivery interval was 12.72 hours, as shown in table: III.

Table No. 3: Mode of delivery after induction with Foleys catheter

Vaginal delivery	30	60%
Vantuse assisted delivery	06	12%
Forceps delivery	03	06%
Caesarean section	11	22%

Regarding complications none of major complication was seen (hemorrhage, uterine rupture), only three patients had pyrexia, one case of retained placenta and two cases of minor degree vaginal tears.

DISCUSSION

For successful elective induction, state of the uterine cervix is of paramount importance. Hence to improve the state of cervix, over the years a variety of locally applied physical ripening agents have been evaluated.[5]The use of Foleys catheter to effect cervical ripening was first described by Embray and Mollison in 1967.[6]They used a 26 gaug catheter, modified by removal of the tip and inflated with 50ml of sterile water above the internal cervical os. In our study, we used Foleys self retaining catheter of 18-22 gaug and inflated with 40-50cc of normal saline.

After putting in balloon, some studies suggested that patient's activity may be unrestricted[7] while some advocated bed rest and use of traction 0.5 kg on the catheter. Where as in present study, the catheter was kept in place by applying sticking plaster over it on the thigh of the patient, the mechanism by which Foleys catheter improves the cervical state by its mechanical action. It strips the fetal membranes from the lower uterine segment, causing rupture of lysosomes, release of phospholipase A and formation of prostaglandins.

Human studies have measured increased prostaglandin concentration in amniotic fluid and maternal plasma[8] during balloon-induced cervical ripening.

Exact time period for which balloon is to be kept inside is not always known, but a variable time period is allowed for spontaneous expulsion, adequate ripening or the establishment of labour. In some studies the balloon is removed after 8 to15 hours,[9,10] others wait until it falls or pulls out,[11,13] In our study ,balloon was kept inside the cervical canal for 24 hours. In 34 patients expelled catheter of their own before 24 hours.

In some studies, after removal of balloon or its expulsion, if labour does not begin, reinsertion of balloon catheter or use of another method of cervical ripening was done. In neither our study no any case

reinsertion of the catheter was done, nor any other any other method for cervical ripening was used.

In a study, where ripening of the unfavorable cervix was done with extra amniotic catheter balloon, D and J Sherman and others[12] suggested that 60-70% of the patients required oxytocin for induction or augmentation of labour, same seen in our study 37 patients required syntocinon drip while 13 patients delivered without getting syntocinon drip.

In our study 30 patients delivered by spontaneous vaginal delivery, 09 patients delivered with the help of instruments and 11 patients required lower segment caesarean section.

Most studies report very few side effects of cervical ripening by a Foleys catheter balloon, the most common are intrapartum or postpartum fever and vaginal bleeding after insertion,[14] less frequent side effects include uterine hyper stimulation, fetal heart rate abnormalities, rupture of membranes, displacement of the presenting part or umbilical cord prolapsed.[15]

In our study pyrexia was seen in two patients, three had minor degree of vaginal tears and retained placenta was occurred only in one patient.

CONCLUSION

This study suggests that cervical ripening with Foleys catheter is cheap, easily available, effective, simple and with lack of local and systemic serious side effects.

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