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Research Article

Effects Foley catheter placement to expedite the process of delivery

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ABSTRACT

Background: Finding a suitable procedure in cases requiring termination of pregnancy without having a ready cervix to induction of labor, is a considerable problem in midwifery. The aim of this study was to compare the effect of Foley catheter placement with oxytocin to expedite the process of delivery.
Methods: This is an interventional study. In this study, patient information including age, gestational age, residence place, education, induction time, induction complications, cesarean delivery after induction were entered in a checklist. Collected data analyzed by descriptive and analytical statistical methods in SPSS.16.
Results: In this study 100 pregnant women were enrolled in two equal size groups, case (receiving a Foley catheter and oxytocin) and control (receiving oxytocin), each with 50 patient. The mean age of cases was 24.7±3.4 years and controls were 23.9±2.3 years and the most prevalent age group in both was 20-30. In cases 14 % and in controls 12 % were with underlying disease and 14% of women in case group and 24% of women in control group had narrowing of vaginal canal. The most common reason for starting induction in cases was lack of progress in labor and in controls dilation of delivery. The mean gestational age in cases was 39.9±1.9 and in control 39.2±1.8 weeks. In relation to dilatation progress, results showed that in cases individuals reached to full dilatation early and this difference was, in cases 14 % and in controls 22% of deliveries are ended to caesarean. 14% of deliveries in cases and 22% in controls are ended to Caesarean section. There was no significant difference between two groups in birth time Apgar score and 5 minutes after birth time.
Conclusions: Results showed that, Foley catheter could significantly reduce induction time significantly and resulted to faster labor but did not reduce the rate of caesarean.

Keywords: Pregnancy termination, Labor induction, Cervix, Foley catheter

INTRODUCTION

Stimulate labor is one of the most common and essential actions in obstetric and labor induction has been done in more than 15 percent of pregnancies and now amniotomy and oxytocin induction of labor are common methods.[1-3]

The success of these approaches related to the degree of readiness of the cervix (cervical) and in unfavorable cervix with Bishop Score less than 6, the induction is common.[4]

For the success of labor induction in inappropriate cervical addition to the preparation medication methods like prostaglandin E_2, the mechanical methods such as Foley catheter can be used.[5]

Prostaglandin E_2 has been better the preparation of the cervix physiologically by increasing the water under cervical mucus and change collagen bands and increase the uterine myometrium sensitivity to oxytocin.[6-7]

Foley catheter through the cervix is an effective, low-cost and uncomplicated method which locally stimulates the release of prostaglandins by press at the top of the inner

hole of the cervix.[8-9] Many studies compared the effects of Foley catheter with the effect of prostaglandin on cervical ripening before induction of labor and showed that the impact of the Foley catheter is better than effect of prostaglandin.[9-11]

The purpose of this study was to compare the effect of traction on the cervix with a Foley catheter association with oxytocin and oxytocin singly, when the cervix is not appropriate to labor.

METHODS

This is an interventional study that has been done on 100 pregnant women with Indicated termination of pregnancy. The women randomly divided in two matching group each with 50 women. The case group received the Oxytocin + Foley catheter and the control group received the Oxytocin only. Necessary information such as induction time, induction contaminations and CS after induction collected for each women and collected data analyzed by statistical methods in SPSS.16.

RESULTS

The mean age of cases was 24.7±11.4 and controls were 23.9±10.3 and most of cases and control were in age group 20-30 with 52% and 46%; respectively.

72% of cases and 64% of controls were from Urban. Of cases, 14% and controls 12% have history of heart disease. 14% of women in case group and 24% of women in control group have narrowing of the birth canal. The most common reason for induction in case group was lack of labor progress and in control group was delay in delivery time (Figure 1).

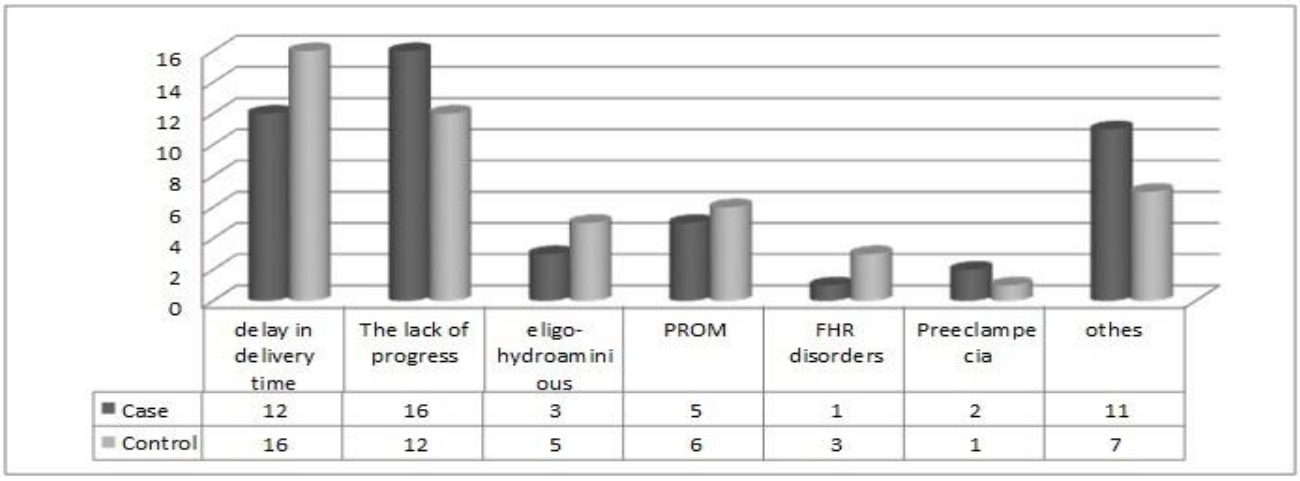

Figure 1: The frequency of patients by induction start reasons.

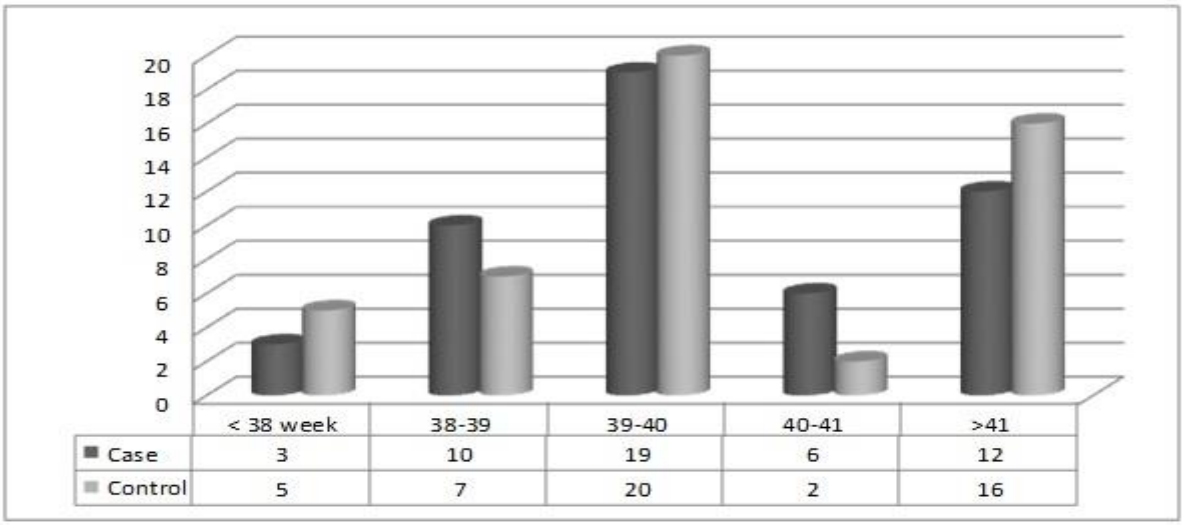

Figure 2: Frequency of women by gestational age.

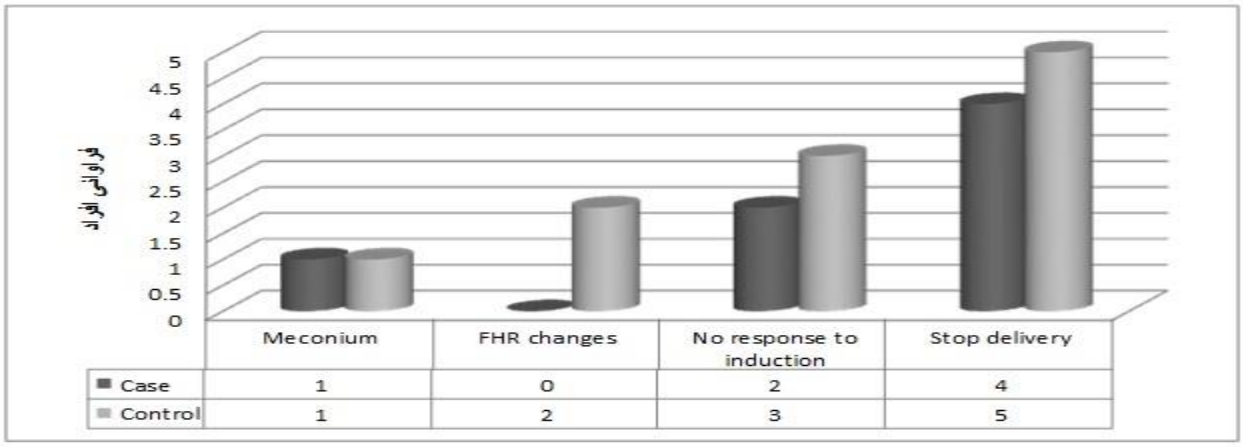

Figure 3: The reason for cesarean section in two groups.

The mean gestational age in case group was 39.9±1.9 and in control group was 39.2±1.8 weeks and most of cases and controls were in gestational age group 39-40 week with 38% and 40 %; respectively (Figure 2).

Results showed that due to higher rate of CS in control group the difference no statistically significant. The most common reason for transform of NVD in women to CS was stop delivery in each of two groups (Figure 3).

Most of neonates in each two groups have Apgar score 9 (59% vs. 66%). Results showed that there wasn't a significant difference between Apgar scores in two groups. The mean of weights in neonates in two case and control groups was 3.2±1.3 and 3.4±1.2; respectively and most of neonatal were in weight group 3-4 Kg.

DISCUSSION

Results showed that there weren't any significant differences between two groups in variables such as age, gestational age, parity and the reasons for labor induction. In case group 14% and control group 12% have history of underlying diseases and in 14% of women in case group and 24% of women in control group have narrowing of the birth canal. In case group the women sooner to achieve fully dilatation and this difference was significant (p=0.043).

In case group 14% and control group 22% have CS (p=0.29). The Apgar score in birth time and five minute after birth has no significant difference between two groups. In Yazdani et al study,[12] the mean age of women in Prostaglandin and Foley catheter groups was 23.3 and 22.3;respectively (p>0.05).

The Bishop score in two groups wasn't significant and Bishop Score in Foley catheter group was 5.8 and Prostaglandin E2 was 6.4. Also, the induction with Oxytocin in Foley catheter group was more than Suppository of prostaglandin E2 (p=0.005).

The CS rate in Suppository of prostaglandin E2 group with 40.9% was more than Foley catheter group but no statistically significant. In Taghinejad et al study,[13] results showed that two groups have no significant difference in variables cost, hospitalized time, abortion rat, bleeding, nausea and vomiting but by Bishop score and delivery time the difference was significant (P=0.04).

In Roudsari et al study,[14] two groups was similar in variables such as demographic data, CS indications, neonatal characterized. But the NVD rate in Misoprostol group was significantly higher than other group (89.8% vs. 62.7%) (p=0.001) and the mean delivery time in Misoprostol group was significantly lower than Foley catheter group (11.1 hour vs. 13.6 hour; p=0.03). Faraji et al[15] in a study showed that the CS rate in case group (Foley catheter + Oxytocin) with 43% was lower than control group (Oxytocin) with 63%. The mean of Bishop Score in two groups was significantly difference (1.7±5 vs. 1.2±2.5; p=0.001).

The mean difference of distance from induction to delivery in case and control groups was significant (8.6±3.3 vs. 15.8±3.2; p=0.001). And the induction time in two groups was similar.

In Niroumanesh et al study,[16] the change of Bishop Scores in two groups was similar. The induction with Oxytocine time was significantly shorter than Foley catheter group. Al-Taani et al study,[17] the change in Bishop Score in prostaglandin E2 group was significantly higher than Foley catheter group and the need for Oxytocin in Foley catheter group was more than prostaglandin E2 group. In our study the rate of CS was similar in two groups which were similar to other studies.[18-20] Ghezzi et al in study,[21] showed that the CS rate in prostaglandin E2 group was significantly more than Foley catheter group. In our study the neonates weight and mean of Apgar score in Oxytocin group was similar to Foley catheter group which was similar to other studies.[16,20]

CONCLUSION

Results showed that Foley catheter could significantly reduce the induction time and faster delivery. Given that the Foley catheter is a cheap and available tool and provided it is associated with very few complications. Therefore, it is necessary for pregnant women to visit the hospital and in the active phase of labor without any contraindicated for cesarean delivery it was proper.

In this study, Foley catheter could not significantly reduce the progression of normal vaginal delivery to cesarean delivery which probably due to indication for cesarean section in patients who have either not noticed or during labor has been created.

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