Foley catheter placement for induction of labor with or without stylette: a randomized clinical trial

Marie M. Forgie, DO; Danielle M. Greer, PhD; Jessica J. F. Kram, MPH; Kiley B. Vander Wyst, MPH; Nicole P. Salvo, MD; Danish S. Siddiqui, MD

Background

Foley catheters are used for cervical ripening during induction of labor. Previous studies suggest that use of a stylette (a thin, rigid wire) to guide catheter insertion decreases insertion failure. However, stylette effects on insertion outcomes have been sparsely studied.

Objective

The purpose of this study was to compare catheter insertion times, patient-assessed pain levels, and insertion failure rates between women who received a digitally placed Foley catheter for cervical ripening with the aid of a stylette and women who received the catheter without a stylette.

Study Design

We conducted a randomized clinical trial of women aged ≥ 18 years who presented for induction of labor. Inclusion criteria were singletons with intact membranes and cephalic presentation. Women received a computer-generated random assignment of a Foley catheter insertion with a stylette (treatment group, n = 62) or without a stylette (control group, n = 61). For all women, a standard insertion technique protocol was used. Three primary outcomes were of interest, including the following: (1) insertion time (total minutes to successful catheter placement), (2) patient-assessed pain level (0–10), and (3) failure rate of the randomly assigned insertion method. Treatment control differences were first examined using the Pearson's test of independence and the Student *t* test. Per outcome, we also constructed 4 regression models, each including the random effect of physician and fixed effects of stylette use with patient nulliparity, a history of vaginal delivery, cervical dilation at presentation, or postgraduate year of the performing resident physician.

Results

Women who received the Foley catheter with the stylette vs without the stylette did not differ by age, race/ethnicity, body mass index, or any of several other characteristics. Regression models revealed that insertion time, patient pain, and insertion failure were unrelated to stylette use, nulliparity, and history of vaginal delivery. However, overall insertion time and failure were significantly influenced by cervical dilation, with insertion time decreasing by 21% (95% confidence interval [CI], 5–34%) and odds of failure decreasing by 71% (odds ratio, 0.29; 95% CI, 0.10–0.86) per 1 cm dilation. Resident postgraduate year also significantly influenced insertion time, with greater time required of physicians with less experience. Mean insertion time was 51% (95% CI, 23–69%) shorter for fourth-year than second-year residents. Statistically nonsignificant but prominent patterns in outcomes were also observed, suggesting stylette use may lengthen the overall insertion procedure but minimize variability in pain levels and decrease insertion failure (Table).

Conclusions

The randomized trial suggests that, even after accounting for nulliparity, history of vaginal delivery, cervical dilation, and physician experience, Foley catheter insertions with and without a stylette are equivalent in insertion times, patient pain levels, and failure of catheter placement. ■

Author and article information

From the Department of Obstetrics and Gynecology (Drs Forgie, Salvo, and Siddiqui), Aurora Sinai Medical Center, Aurora Health Care, and Aurora University of Wisconsin Medical Group and Center for Urban Population Health (Dr Greer, Ms Kram, and Mrs Vander Wyst), Aurora Health Care, Milwaukee, WI.

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Supporting material appears on the next page

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TABLE
Descriptive and inferential statistics for catheter insertion outcomes by confounder subgroup and use of the stylette

Outcome and confounder subgroup	n	Overall	Treatment: stylette	Control: no stylette	*P* value[a]
Insertion time[b]					
Overall	107	1.78 (1.25–3.23)	1.72 (1.25–3.30)	1.88 (1.33–3.12)	.70
Parity					
Nulliparous	50	1.89 (1.33–2.75)	2.08 (1.33–3.38)	1.78 (1.23–2.46)	
Multiparous	57	1.72 (1.25–3.28)	1.55 (1.23–3.08)	1.96 (1.35–3.39)	
History of vaginal delivery					
Yes	51	1.72 (1.25–3.30)	1.55 (1.23–3.08)	1.96 (1.35–3.58)	
No	56	1.89 (1.29–2.96)	2.08 (1.29–3.44)	1.95 (1.23–2.46)	
Cervical dilation					
Closed cervix (0 cm)	28	2.07 (1.53–3.26)	1.86 (1.29–2.94)	2.38 (1.83–3.48)	
Open cervix (> 0 cm)	79	1.68 (1.25–3.08)	1.68 (1.25–3.38)	1.70 (1.21–2.58)	
Resident year					
PGY2	35	3.08 (1.78–4.60)	3.19 (1.97–4.60)	3.00 (1.68–3.70)	
PGY3	22	1.76 (1.25–2.72)	1.50 (1.25–2.00)	2.17 (1.83–4.62)	
PGY4	50	1.46 (1.08–2.02)	1.38 (1.13–2.09)	1.56 (0.93–1.95)	
Patient pain level[b]					
Overall	122	4.66 (4.13–5.20)	4.90 (4.22–5.58)	4.43 (3.59–5.27)	.38
Parity					
Nulliparous	57	4.67 (3.89–5.45)	4.52 (3.51–5.53)	4.82 (3.56–6.08)	
Multiparous	65	4.66 (3.91–5.42)	5.25 (4.29–6.21)	4.09 (2.91–5.27)	
History of vaginal delivery					
Yes	58	4.69 (3.88–5.50)	5.30 (4.28–6.32)	4.04 (2.75–5.32)	
No	64	4.64 (3.91–5.37)	4.52 (3.57–5.46)	4.76 (3.61–5.91)	
Cervical dilation					
Closed cervix (0 cm)	37	5.27 (4.26–6.28)	5.40 (4.06–6.74)	5.12 (3.44–6.79)	
Open cervix (> 0 cm)	85	4.40 (3.76–5.04)	4.66 (3.85–5.47)	4.16 (3.16–5.16)	
Resident year					
PGY 2	43	4.51 (3.62–5.41)	5.57 (4.31–6.83)	3.50 (2.29–4.71)	
PGY 3	24	4.79 (3.57–6.01)	5.00 (3.37–6.63)	4.50 (2.28–6.72)	
PGY 4	55	4.72 (3.88–5.57)	4.31 (3.32–5.30)	5.10 (3.72–6.49)	
Failure of insertion method[b]					
Overall	123	16/123 (13.0%)	7/62 (11.3%)	9/61 (14.8%)	.57
Parity					
Nulliparous	58	8/58 (13.8%)	4/30 (13.3%)	4/28 (14.3%)	
Multiparous	65	8/65 (12.3%)	3/32 (9.4%)	5/33 (15.2%)	

Forgie et al. Effects of stylette for Foley catheter placement. Am J Obstet Gynecol 2016. *(continued)*

Supporting material continues on the next page

TABLE
Descriptive and inferential statistics for catheter insertion outcomes by confounder subgroup and use of the stylette *(continued)*

Outcome and confounder subgroup	n	Overall	Treatment: stylette	Control: no stylette	*P* value[a]
History of vaginal delivery					
Yes	58	7/58 (12.1%)	3/30 (10.0%)	4/28 (14.3%)	
No	65	9/65 (13.8%)	4/32 (12.5%)	5/33 (15.2%)	
Cervical dilation					
Closed cervix (0 cm)	37	9/37 (24.3%)	4/20 (20.0%)	5/17 (29.4%)	
Open cervix (> 0 cm)	86	7/86 (8.1%)	3/42 (7.1%)	4/44 (9.1%)	
Resident year					
PGY 2	44	9/44 (20.5%)	4/22 (18.2%)	5/22 (22.7%)	
PGY 3	24	2/24 (8.3%)	1/14 (7.1%)	1/10 (10.0%)	
PGY 4	55	5/55 (9.1%)	2/26 (7.7%)	3/29 (10.3%)	

[a] Significance level of Student *t* test for insertion time and pain level and Pearson's χ^2 test of independence for odds of insertion failure; $P < .05$ suggests difference between treatment and control groups; [b] Displayed measurements include median (interquartile range) insertion time in minutes for successful insertion attempts only, mean (95% confidence interval) patient pain level on a scale of 0–10, and number of insertion failures from total number of attempts (rate as percentage). The pain level of 1 successful attempt was inadvertently not recorded.

Forgie et al. Effects of stylette for Foley catheter placement. Am J Obstet Gynecol 2016.

Acute feTal behavioral Response to prenatal Yoga: a single, blinded, randomized controlled trial (TRY yoga)

Shilpa Babbar, MD; James B. Hill, MD; Karen B. Williams, PhD; Maria Pinon, RDMS; Suneet P. Chauhan, MD; Dev Maulik, MD

Background

In 2012, yoga was practiced by 20 million Americans, of whom 82% were women. A recent literature review on prenatal yoga noted a reduction in some pregnancy complications (ie, preterm birth, lumbar pain, and growth restriction) in those who practiced yoga; to date, there is no evidence on fetal response after yoga.

Objectives

We aimed to characterize the acute changes in maternal and fetal response to prenatal yoga exercises using common standardized tests to assess the well-being of the maternal-fetal unit.

Study Design

We conducted a single, blinded, randomized controlled trial. Uncomplicated pregnancies between 28 0/7 and 36 6/7 weeks with a nonanomalous singleton fetus of women who did not smoke, use narcotics, or have prior experience with yoga were included. A computer-generated simple randomization sequence with a 1:1 allocation ratio was used to randomize participants into the yoga or control group. Women in the yoga group participated in a 1-time, 1 hour yoga class with a certified instructor who taught a predetermined yoga sequence. In the control group, each participant attended a 1-time, 1 hour PowerPoint presentation by an obstetrician on American Congress of Obstetricians and Gynecologists recommendations for exercise, nutrition,

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