

Effect of Perineal Massage with Ostrich Oil on the Episiotomy and Lacerations in Nulliparous Women: A Randomized Controlled Clinical Trial

Abstract

Background: Perineal lacerations resulting from vaginal delivery may cause short and long complications, which lead to some problems in women after the delivery. Ostrich oil is safe for use in skincare and beauty products. The aim of this study was to examine the effect of perineal massage with Ostrich oil on the episiotomy and lacerations in nulliparous women. **Materials and Methods:** This single-blind randomized controlled trial was conducted on 77 nulliparous women referred to Razi Hospital in Qazvin (Iran) from May to December 2018. After screening of potential participants, 80 out of 105 pregnant women were selected by convenience sampling and were assigned into the intervention and control groups by block randomization technique. In the intervention group, participants received a perineal massage with Ostrich oil in the active phase and the second stage of labor. The rates of episiotomy and perineal laceration were compared between the two groups. Data were analyzed using Chi-square, *t*-test and Mann-Whitney. **Results:** Perineal massage with Ostrich oil in the intervention group significantly decreased the rate of episiotomy compared to the control group ($\chi^2 = 18.32$, $df = 1$, $p < 0.001$). However, there was no statistically significant difference in perineal lacerations between the two groups. **Conclusions:** The results revealed that perineal massage with Ostrich oil could be recommended as an effective, safe, and inexpensive method to improve the rate of episiotomy in vaginal delivery. Perineal massage can be performed by midwives in the first and second stages of labor.

Keywords: Episiotomy, lacerations, massage, nulliparity, perineum

Introduction

An episiotomy is the most common surgical incision in midwifery. Pain resulting from episiotomy has always been a stressful problem for infertile women, which has negative effects on first maternal experience and performance.^[1] Episiotomy pain also results in problems in sitting, walking and raising the baby.^[2] In previous studies, the rates of episiotomy and perineal injury have been reported at 30–90%.^[3,4] In nulliparous women, the prevalence of perineal lacerations has been reported by 40%.^[5] These injuries may result in complications including hemorrhage, hematoma, infection, vesicovaginal and recto-vaginal fistulas, painful intercourse, and urinary and bowel incontinence,^[6] which confront many women with physical, psychological and social health problems.^[5,6] Perineal pain is common in nulliparous women and is associated with complications such as insomnia, anxiety, delay in making a

relationship between mother and infant and inappropriate position for breastfeeding.^[7,8] Its prevalence is reported 92% on the first day after the labor.^[7]

Perineal massage can enable women to regain function after childbirth.^[9] Studies have shown that perineal massage results in reducing episiotomy and increasing the rate of healthy perineum after the delivery.^[10,11] Some studies have shown that perineal massage is associated with a 15–21% of reduction in the rate of episiotomy in the intervention group compared to the control one.^[12,13] Perineal massage is also a valuable method to preserve perineum against possible injuries.^[14,15] Women who used perineal massage experience less pain in the perineum when the baby's head is out.^[16]

There are mixed findings of the effect of perineal massage on the prevention of perineal injury. Some studies have shown

Samira Romina¹,
Faeze Ramezani¹,
Neda Falah¹,
Maryam Mafi²,
Fatemeh Ranjkesh³

¹Students of Midwifery, Student Research Committee, Qazvin University of Medical Sciences, Qazvin, Iran, ²Department of Biostatistics, School of Nursing and Midwifery, Qazvin University of Medical Sciences, Qazvin, Iran, ³Instructor of Midwifery, Children Growth Research Center, Research Institute for Prevention of Non-Communicable Diseases, Qazvin University of Medical Sciences, Qazvin, Iran

Address for correspondence:
Ms. Fatemeh Ranjkesh,
Qazvin University of
Medical Sciences, Shahid
Bahonar Blvr, Qazvin, Iran.
E-mail: fatemehranjkesh@
yahoo.com

Access this article online

Website: www.ijnmrjournal.net

DOI: 10.4103/ijnmr.IJNMR_76_19

Quick Response Code:



How to cite this article: Romina S, Ramezani F, Falah N, Mafi M, Ranjkesh F. Effect of perineal massage with ostrich oil on the episiotomy and lacerations in nulliparous women: A randomized controlled clinical trial. Iranian J Nursing Midwifery Res 2020;25:134-8.

Submitted: 06-Apr-2019. **Revised:** 10-Nov-2019.

Accepted: 20-Dec-2019. **Published:** 24-Feb-2020.

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that perineal massage during the prenatal period,^[17-21] and the second phase of labor^[22,23] is effective in reducing perineal injuries during vaginal delivery. While the other studies have not supported a reduction in the perineal injuries following the perineal massage.^[4,19] It seems that further research is needed to examine the effect of perineal massage on the reproductive system injuries during labor.

Ostrich oil contains amino acids, essential fatty acids, and some vitamins, which is used in relieving joint and muscle pain, moisturizing the skin and hair.^[24] This product contains various amounts of carotenoids, flavones, polyphenols, tocopherols and phospholipids in the triglyceride part, which is used for antioxidant effects these days. Ostrich oil can be used as antibacterial and anti-inflammatory for the skin.^[25] It is also safe for use in skincare and beauty products. In addition, it can be used for reducing itchy skin in pet animals, and to re-shine a pale coat.^[26] There are several ways to reduce perineal injuries including positions, handoff, warm compress, perineal protection device, Ritgen's maneuver and perineal massage. Massage is one of the oldest methods. Perineal massage during labor is inexpensive and safe, which can be performed by midwives^[27] However, contradictory results were reported in studies conducted on massage and perineal injuries. To the best of our knowledge, no study was conducted on the effect of Ostrich oil massage on the perineal injuries. The present study was designed to examine the effect of perineal massage with Ostrich oil on the episiotomy and perineal lacerations during the active and second phases of labor in nulliparous women.

Materials and Methods

This single-blind randomized clinical trial (IRCT20190131042567N1) study was conducted at Razi Hospital in Qazvin, Iran from May to December in 2018. The sample size was estimated 32 participants in each group considering 95% confidence interval ($\alpha = 0.05$) and power of 90% ($\beta = 0.1$).^[15] Considering a 20% attrition rate, the final sample was 40 participants in each group. Potential participants were screened based on the inclusion and exclusion criteria. The inclusion criteria were being nulliparous, gestational age 37–42 weeks and singleton pregnancy. Those with birth weight more than 4000 g (according to the ultrasound), vaginal hemorrhage in the labor, dystocia and instrumental delivery (based on the diagnosis of an obstetrician) were excluded from the study.

After screening the potential participants, 80 out of 105 pregnant women who were referred to Razi hospital for vaginal delivery were selected by convenience sampling. Then they were assigned into the intervention and control groups by block randomization technique.

Data were collected using a checklist consists of questions about demographic data (age, marital status, education

level, job), pregnancy (gestational age, abortion, infertility, membrane status, fetal weight estimate) and delivery (episiotomy, perineal tears, Apgar score, infant weight, infant sex, duration of the first and second stage of labor, vaginal hemorrhage). The content validity of the checklist was assessed by 10 faculty members at the School of Nursing and Midwifery.

For the intervention group, in addition to the routine labor care and Ritgen's maneuver, perineal massage with Ostrich oil was carried out in the active phase of labor for 5–10 min every 1 h. This manipulation was also performed in the second stage of labor for 5–10 min every 30 min. After wearing sterile gloves and smearing the index and middle fingers with Ostrich oil, the researcher carried out massage by moving back and forth from one side of the vagina to another side in U shape with gentle pressure toward the rectum in up and down direction. Massage was performed between contractions in the first phase and during and between contractions in the second stage.^[28] For the control group, the routine labor care and Ritgen's maneuver were performed during the second stage of labor.

Due to the drop out of three participants during the study, the data of 77 patients (39 intervention, 38 control groups) were finally analyzed [Figure 1]. The collected data were analysed by the SPSS version 24. Kolmogorov-Smirnov test was used to examine normal distribution of the data. T-test and Chi-square and Mann-Whitney were used to compare the two groups. *p* value of less than 0.05 was considered significant.

Ethical considerations

The study was approved by the Ethics Committee at Qazvin University of Medical Sciences (Ethics code no.: IR.QUMS.REC.1396.306). The purposes and processes of the study were explained to the participants. A written consent form was obtained from the participants. It was explained that the collected information was kept confidential, and they could withdraw from the study at any time.

Results

In this study, 80 out of 105 subjects met the inclusion criteria. They were allocated randomly to the intervention ($n = 40$) or control ($n = 40$) groups. There was 3 dropout in the two groups; consequently, 39 pregnant women in the intervention group with the mean (SD) age of 24.18 (4.20) years and 38 ones in the control group with the mean (SD) age of 25.38 (3.65) years completed the study.

The results of this study showed that both groups were homogeneous in terms of demographic characteristics, history of any diseases and pregnancy at the beginning of the study ($p < 0.05$) [Table 1]. Results showed that episiotomy in the intervention group was significantly lower than the control group ($\chi^2 = 18.32$, $df = 1$, $p < 0.001$).

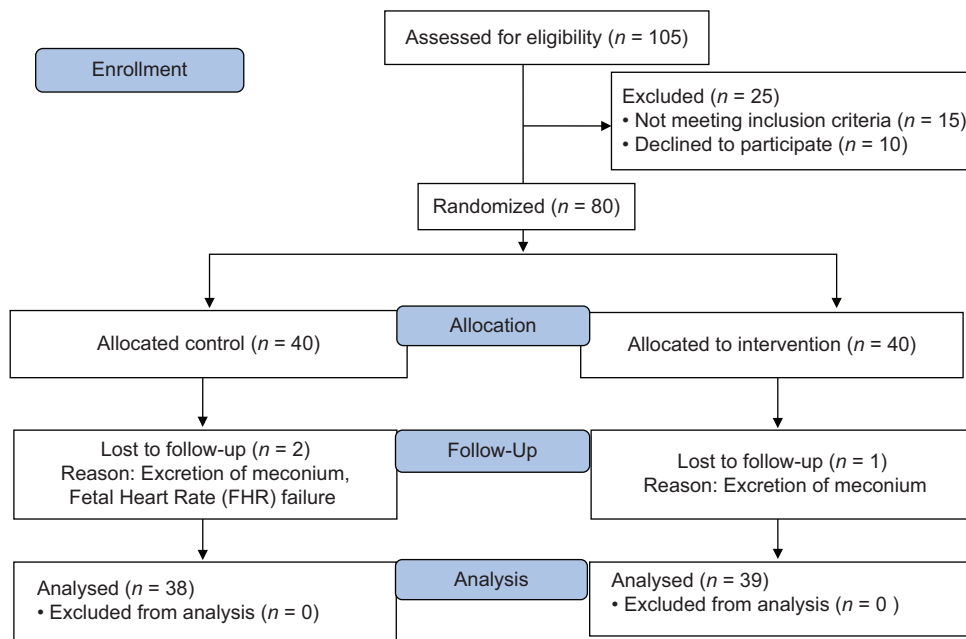


Figure 1: Consort diagram

Table 1: Demographics information of women in the two groups

Variable	Intervention group N (%)	Control group N (%)	Chi-square		
			χ^2	df	p
Women's education level					
Guidance school	12 (31.00)	10 (26.30)	0.65	2	0.723
High school	18 (46.00)	21 (55.30)			
Academic	9 (23.00)	7 (18.40)			
Total	39 (100.00)	38 (100.00)			
Women's job					
Unemployed	33 (84.60)	31 (81.60)	0.75	2	0.687
Worker	3 (7.70)	5 (13.10)			
Employee	3 (7.70)	2 (5.30)			
Total	39 (100.00)	38 (100.00)			
Participation in pregnancy course					
Yes	7 (17.90)	9 (23.70)	0.38	1	0.535
No	32 (82.10)	29 (76.30)			
Total	39 (100.00)	38 (100.00)			
Membranes					
Intact	25 (64.10)	25 (65.80)	0.02	1	0.877
Rupture	14 (35.90)	13 (34.20)			
Total	39 (100.00)	38 (100.00)			
	Mean (SD)	Mean (SD)	t-test		
			t	p	
Women's age (year)	25.38 (3.65)	24.18 (4.20)	1.33	0.315	
BMI	24.12 (2.93)	23.12 (2.68)	1.56	0.26	
Gestational age (week)	39.35 (1.06)	39.42 (0.97)		0.476	

However, there were no statistically significant differences in perineal lacerations in the two groups [Table 2].

Discussion

The present study was conducted to examine the effect of perineal massage with Ostrich oil on the episiotomy and perineal lacerations during the active phase and second stage of labor in nulliparous women. The results revealed that perineal massage with Ostrich oil in the intervention group significantly decreased episiotomy compared to the control group. However, there were no statistically significant differences in perineal lacerations between the two groups. In line with the present study, some studies have shown that perineal massage is effective in reducing the rate of episiotomy in the delivery.^[21,22] However, first-degree lacerations in the intervention group were significantly higher than the control group.^[22] In contrast, some studies have shown a higher rate of perineal lacerations, which could be explained by differences in the type and duration of the intervention as well as the type of oil used in the two studies.

Contrary to the result of the present study, it was found that warm water compression and perineal massage with water-soluble lubricant did not affect perineal lacerations in the second stage of labor.^[23] In this study, the rate of lacerations was assessed in the two groups, and the intervention was only performed in the second stage of labor. The difference between the two studies could be explained by the difference in type and duration of intervention in these studies.

Inconsistent with the results of the present study, a study found that perineal massage with water-soluble lubricant

Table 2: Comparison of episiotomy and perineal lacerations between two groups

Variable	Intervention group N (%)	Control group N (%)	Chi-square		
			χ^2	df	p
Episiotomy					
Yes	20 (51.30)	36 (94.7)	18.32	1	0.001
No	19 (48.70)	2 (5.30)			
Perineal laceration					
No laceration	33 (84.60)	35 (92.00)	4.24	2	0.162
First degree	4 (10.20)	0			
Second degree	2 (5.20)	3 (8.00)			

during the active phase of the first stage of dilation of 6–7 cm increases healthy perineum and decreases episiotomy and perineal lacerations; however, perineal massage has no effect on the duration of the second stage of labor.^[28] Contrary to the results of the present study, it was found that warm water compression and perineal massage with lubricant in the second stage of labor did not impact on the episiotomy and perineal lacerations.^[29] In the above study, perineal massage was carried out using lubricant in the second stage of labor in the intervention group. Different results could be explained by the difference in the type and duration of the intervention between the two studies.

In the present study, massage was performed using Ostrich oil during the first and second phases of labor. Increasing the rate of healthy perineal in the intervention group could be explained the type of intervention and application of Ostrich oil. Perineal massage increases blood flow as well as stretching and softness of the tissues.^[30,31]

One of the strengths of this study is repeated massage at least 4 times during the first and second stages of labor. One of the weaknesses of this study was unnecessary interventions in the delivery process by the treatment team. The most important limitation of the present study was the exclusion of high-risk cases from the study, which may increase the episiotomy and perineal lacerations. It is suggested to conduct further studies to determine the effect of perineal massage with Ostrich oil on high-risk pregnancies. Another limitation of this study was the lack of finding oil with no effect in order to use it in the placebo group. Further research is suggested to compare the impact of different oil on the episiotomy.

Conclusion

The results of this study indicate that perineal massage with Ostrich oil decreases the rate of episiotomy during the first and second stages of labor in nulliparous women. Based on the results of this study, perineal massage is recommended using Ostrich oil during labor as a simple, safe and low-cost measure in order to reduce the perineal

injuries. This can ultimately promote maternal health and provide safe conditions for physiological delivery.

Acknowledgements

This study was approved by the Vice-Chancellor of Qazvin University of Medical Sciences with the code no. 14002253. The authors would like to express their gratitude to the participants and their families who help them do this research. We also thank the authorities of Razi Hospital in Qazvin who facilitated the study.

Financial support and sponsorship

Qazvin University of Medical Sciences

Conflicts of interest

Nothing to declare.

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