



## THE IMPACT OF LACERATION TYPES AND COLD GEL APPLICATIONS ON PERINEAL WOUND PAIN WITH VAGINAL DELIVERY

Bina Melvia Girsang<sup>1</sup>

<sup>1</sup> School of Nursing, University Sumatera Utara  
binamelvia@usu.ac.id

### Abstract

**Objective:** This study aims to determine the effect of cold gel application and types of episiotomy laceration on perineal wound pain response of postpartum mothers with normal delivery. **Method:** Several types of episiotomy were performed, and cold gel was applied to the perineum of 31 postpartum mothers at home in the work area of Pantai Cermin. Furthermore, the subjects were selected using a purposive sampling technique. Measurement of pain response was carried out using a numeric rating scale. Also, Wilcoxon and Kruskal Wallis statistical tests were conducted to analyze the effects on pain response. **Result:** The analysis showed that there was a difference in the mean score of perineal wound pain after cold gel application ( $p = 0.000$ ). But, the types of episiotomy laceration caused no difference in the score ( $p > 0.005$ ). **Conclusion:** Episiotomy education and application of cold therapy are needed by health workers as self-care methods that can be done independently at home for postpartum mothers.

**Keywords:** Episiotomy, Laceration, Pain, Perineal

### Introduction

The postpartum is a period that requires adaptation of a mother to the presence of a baby, while being in a state of recovery from tissue trauma in the birth canal<sup>1</sup>. This transitional situation tends to cause family relationship problems and negative effects such as the feeling experienced after childbirth.

Persistent pain causes irritability effects on the mother, and further leading to self and baby care difficulty, which often has a serious impact, namely postpartum depression<sup>2,5</sup>. Second-degree perineal lacerations have increased odds of suffering from dyspareunia at several weeks of postpartum<sup>6</sup>, and some other negative effects on quality of life. Therefore, interventions geared towards decreasing pain from perineal lacerations warrant investigation<sup>7</sup>.

The cold treatment carried out by using gel is more efficient in reducing the level of perineal pain, edema and even bruising that accompany postpartum trauma after an

episiotomy, compared to other methods such as ice packs<sup>8</sup>. Also, several studies stated that this particular demonstrated treatment which involved cold-gel packing, reduces perineal pain disturbance on daily activities in twelve, twenty-four, and forty-eight hours post-delivery. Another one found that satisfaction level increases with discomfort management<sup>9,10</sup>. Cold-gel pads are very secure because of their gentle texture and suitable temperatures<sup>9</sup>.

### Method

In this study, observations of the type of perineal episiotomy laceration in postpartum mothers included lateral, mediolateral, modified median, median, "J" shape, and schuchardt. Perineal pain in postpartum wounds was measured using a numeric rating scale. Furthermore, the differences in the mean score of perineal wound pain based on the types of episiotomy laceration were analyzed using the Kruskal Wallis and Wilcoxon statistical tests.

The cold gel was applied to the perineal wounds of 31 postpartum mothers on the second day after delivery for two consecutive



days during the home care, up to 10 minutes. The subjects were selected by purposive sampling technique based on the following criteria, normal delivery, grade 2 perineal injury, and absence of medical histories such as diabetes mellitus and heart disease. While, the exclusion criteria included, taking antipyretic drugs. Cold gel application was carried out once daily at home, and the pain scale was assessed before and after the process for two days.

### Results

This study was conducted on 31 postpartum mothers that had grade 2 perineal injury after episiotomy, with the characteristics in table 1 below:

**Table 1.**

Demographic and Obstetric Characteristic	
Demographic and Obstetric	Characteristic
Age, Mean (SD)	27.42 (5.06)
Birth Weight, Mean (SD)	3.15484 (415.40)
Episiotomy Type n (%)	
Lateral	2 (6.5)
Mediolateral	1 (3.2)
Median Modifications	2 (6.5)
Median	23 (74.2)
"J" Shape	2 (6.5)
Schuchardt	1 (3.2)
Parity, n (%)	
Nullipara	12 (38.7)
Multiparous	19 (61.3)

Based on table 1, the average age of postpartum mothers is 27.42 years, while the mean weight of babies born is 3.15484 kg. The result showed that majority of the types of episiotomy performed at the place of delivery were Median (74.2%), while parity characteristics of the 31 subjects were mostly multiparous (61.3%).

The treatment application was carried out for 2 days in the morning after bathing, followed by compressing the wound area with a cold gel designed in a way that mothers can easily use. Furthermore, this was performed throughout the home care and it encompasses a smart

impact in reducing pain, which is evidenced by pain scale analysis with the Wilcoxon applied math check in the table below.

**Table 2**

### Wilcoxon Test Results on the Perineal Wound Pain Scale with Cold Gel Application

	n	Median $\pm$ SD	P-Value
Day-1	31	5.71 $\pm$ 1.27 4.39 $\pm$ 0.98	0.000
Day-2	31	3.94 $\pm$ 0.99 2.13 $\pm$ 0.42	0.000

Based on the results of the Wilcoxon test, it was found that there were differences in the mean pain scale from the first and second days after the application of cold gel. In fact, almost all the postpartum mothers experienced a decrease in pain response and no increase was discovered after the application of cold gel. But, 2 of them had constant pain responses on both days.

Furthermore, analysis of the differences in the mothers' perineal wound pain response to the types of episiotomy was carried out using the Kruskal Wallis statistical test which is presented in Table 3 below.

**Table 3**

### Kruskal Wallis Test Results Based on the Types of Episiotomy Against Perineal Wound Pain

Dependent Variable	Chi-square	df	Asymp-Sig
Pain response on the first day before cold gel application	2.90	5	0.715
Pain response on the first day after cold gel application	5.51	5	0.356
Pain response on the second day before	1.35	5	0.929



cold gel application			
Pain response on the second day after cold application	2.16	5	0.825

Table 3 shows the overall measurement of pain response. There was no difference for two consecutive days based on the type of episiotomy in postpartum mothers and no further statistical tests were performed.

### Discussion

The results shown that the application of cold gel for two consecutive days had an impact on pain reduction. This is evidenced by the reduced pain response measurement values from the first day of application. Moreover, there were no complaints about the discomfort of postpartum mothers during the procedure. Application of cold gel to the wound area for 10 minutes every time by compression and then refuting it using an underwear, also produced good results in reducing the pain response. It has been stated that the perineal temperature reached the recommended analgesia levels after an ice pack application for 10-20 minutes<sup>11</sup>. The mothers were able to carry out other activities during the application process, hence it is quite practical and economical.

Previous studies also stated that cold therapy is a non-invasive treatment that allows mothers to carry out activities such as breastfeeding<sup>12</sup>. This shows that alleviating pain in wound area is necessary for maternal health. Therefore, health professionals need to actively promote ways that can facilitate the expertise of postpartum mothers to manage their pain as this tends to help them regulate relationship with others<sup>13</sup>.

Also, there was no difference found in pain response to the types of episiotomy. This is attributable to the variations in parity and interaction between tissues in the wound area<sup>14</sup>. Based on these physiological responses, the orientation of a person about the potential

sensations that follow when using localized cold application is a valuable measure to reduce the associated discomfort, make the cooling experience more tolerable and enhance adherence to the therapy<sup>15</sup>.

Owing to a rise in the number of first and second degree tears, the amount of perineal trauma is still higher<sup>16</sup>. Therefore, this study was aimed at postpartum mothers with second degree episiotomy laceration, to minimize the traumatic sense of pain that tends to hinder them from carrying out their primary role.

### Conclusions

The application of cold gel has an impact on reducing pain and is an economical non-pharmacological method, hence it is important to teach health workers as a self-care method that postpartum mothers can carry out at home.

### Acknowledgements

The authors are grateful to Universitas Sumatera Utara research institute for providing assistance in carrying out this study, with the hope that it can become a source of reference and improve the quality of nursing services, especially in postpartum maternal health.

### References

- Schulkin, J., & Powe M. Integrating Evolutionary Biology into Medical Education: for maternal and child healthcare students, clinicians, and scientists. Eds. Oxford University Press; 2019.
- Eisenach, J. C., Pan, P. H., Smiley, R., Lavand'homme, P., Landau, R., & Houle TT. Severity of acute pain after childbirth, but not type of delivery, predicts persistent pain and postpartum depression. *Pain*. 2008;140(1):87–94.
- Francisco, A. A., De Oliveira, S. M. J. V., Steen, M., Nobre, M. R. C., & De Souza E V. Ice pack induced perineal analgesia after spontaneous vaginal birth: Randomized controlled trial. *Women and Birth*. 2018;31(5):e334–40.
- Oliveira, S. M., Silva, F. M., Riesco, M. L., Latorre, M. D. R. D., & Nobre MR.





1. Comparison of application times for ice packs used to relieve perineal pain after normal birth: a randomised clinical trial. *J Clin Nurs*. 2012;21(23–24):3382–91.
2. Dilarang mengutip sebagian atau seluruh karya tulis ini tanpa mencantumkan sumber:
  - a. Pengutipan hanya untuk kepentingan pendidikan, penelitian, penulisan karya ilmiah, penyusunan laporan, penulisan kritik atau tinjauan suatu masalah.
  - b. Pengutipan tidak merugikan kepentingan Universitas Riau.
3. Swenson, C. W., DePorre, J. A., Haefner, J. K., Berger, M. B., & Fenner DE. Postpartum depression screening and pelvic floor symptoms among women referred to a specialty postpartum perineal clinic. *Am J Obstet Gynecol*. 2018;218(3):335-e1.
4. Signorello, L. B., Harlow, B. L., Chekos, A. K., & Repke JT. Postpartum sexual functioning and its relationship to perineal trauma: a retrospective cohort study of primiparous women. *Am J Obstet Gynecol*. 2001;184(5):881–90.
5. Swenson, C. W., Low, L. K., Kowalk, K. M., & Fenner DE. Randomized Trial of 3 Techniques of Perineal Skin Closure During Second-Degree Perineal Laceration Repair. *J Midwifery Womens Health*. 2019;64(5):567–77.
6. Angel Rajakumari. G. Effectiveness of Cooling Gel Pads on Episiotomy Pain Reduction and Promotion of Wound Healing Among Postnatal Mothers. *IJSR - Int J Sci Res*. 2015;4(5):675–6.
7. Lu, Y. Y., Su, M. L., Gau, M. L., Lin, K. C., & Au HK. The efficacy of cold-gel packing for relieving episiotomy pain—a quasi-randomised control trial. *Contemp Nurse*. 2015;50(1):26–35.
8. Navvabi, R. S., Kerman, S. F., Saroneh, R. M., & Abedian Z. Cold and reduced episiotomy pain interfere with mood and daily activity. 2011. 87–92 p.
9. Paiva, C. D. S. B., de Oliveira, S. M. J. V., Francisco, A. A., da Silva, R. L., Mendes, E. D. P. B., & Steen M. Length of perineal pain relief after ice pack application: A quasi-experimental study. *Women and Birth*. 2016;29(2):117–22.
10. Lucila Coca Leventhal; Sonia Maria Junqueira Vasconcellos de Oliveira; Moacyr Roberto Cuce Nobre; Flora Maria Barbosa da Silva. Perineal Analgesia With an Ice Pack After Spontaneous Vaginal Birth: A Randomized Controlled Trial. *J Midwifery Women's Heal*. 2011;56(2):141–6.
11. Eshkevari, L., Trout, K. K., & Damore J. Management of postpartum pain. *J Midwifery Womens Health*. 2013;58(6):622–31.
12. Sheikhan, F., Jahdi, F., Khoie, E., Alizadeh, N., Sheikhan, H., & Haghani H. Episiotomy discomforts relief using cold gel pads in primiparaus Iranian women (a comparative study). *Res J Med Sci*. 2011;5(3):150–4.
13. Starkey C. Therapeutic modalities. FA Davis; 2013.
14. Abedzadeh-Kalahroudi, M., Talebian, A., Sadat, Z., & Mesdaghinia E. Perineal trauma: incidence and its risk factors. *J Obstet Gynaecol (Lahore)*. 2019;39(2):206–11.