



Care for perineal tears in vaginal delivery: An update for midwife[☆]

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ABSTRACT

Objective: The purpose of this study will be to review several studies regarding the repair or treatment of perineal tears after vaginal delivery. This is expected to be an update for a midwife in daily caring.

Methods: Two electronic databases (PubMed and Scencedirect) were searched to locate relevant literature about perineal tears/wound/laceration/trauma that is published in 2016–2021. 124 Pubmed articles and 452 ScienceDirect articles filtered successfully. The articles that have been obtained will be evaluated based on the inclusion criteria in this study. We summarize place and date, objective, design, samples, the measurement used, and research results.

Results: 9 articles were found that matched the inclusion criteria. Three articles examined the effect of the type of suture on perineal pain, and another 6 discussed therapy to reduce the adverse effects of perineal tears. The therapies used are far-infrared radiation therapy, capacitive-resistive radiofrequency therapy, pelvic floor muscle training in early postpartum, cold therapy, and treatment with TheresienOL (natural oil).

Conclusion: Sutures and technique/suturing second-degree perineal tears or a postpartum episiotomy can affect perineal pain. Cold gel pad therapy and treatment with natural oil on perineal wounds can affect perineal pain and wound healing.

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Introduction

Perineal tears often occur in vaginal delivery, either spontaneously or through interventions such as an episiotomy.^{1,2} Approximately 85% of vaginal deliveries occur in perineal tears, which is more common in primiparas (90.8%) than multiparas (68.8%).^{1,3} Perineal tears can cause bleeding, infection and postpartum pain associated with the risk of depression, dyspareunia and adversely affects the quality of life and sexual health.^{4,5} The American College of Obstetricians and Gynecologists (ACOG) classifies perineal tears into four grades: Grade 1st is lacerations to the perineal skin only, Grade 2nd is lacerations to the perineal muscle, but not including the anal sphincter, Grade 3rd is lacerations to the anal sphincter muscle and Grade 4th is lacerations to the anal sphincter muscle anal sphincter and rectal epithelium.⁵

Grades 1st and 2nd are about 50% of the time at delivery. In grade 1st, because the tear is considered small, repair by suturing may not be carried out depending on the doctor's advice, while in grade 2nd, it is recommended to do suturing. Grades 3rd and fourth require more complex repairs and must be performed in the operating theater.¹ Suturing the perineum can increase postpartum pain,

impacting daily life, baby care, and the mother's comfort, so health workers must help mothers manage the pain they experience.⁶

The purpose of this study will be to review several studies regarding the repair or treatment of perineal tears after vaginal delivery.

Method

This research is a literature review research from various articles in PubMed and ScienceDirect databases. The keywords used in the search were 'perineal tears,' 'perineal wound,' and 'perineal laceration'. The search results found 8,246 related articles on Pubmed and 25,902 articles on ScienceDirect. Furthermore, the results will be filtered through the database by taking articles published in 2016–2021, research articles, and free full text from 124 Pubmed articles and 452 ScienceDirect articles filtered successfully. The articles that have been obtained will be evaluated based on the inclusion criteria in this study, namely: 1) not review articles, 2) the English language is available 3) articles containing clinical trials or experiments for repair or treatment of perineal tears, 4) perineal tears discussed are grade 1st and second or episiotomy.

Articles considered appropriate will be reviewed by taking data, journal title, place and date of research, objectives, research samples, research design, the measurement used, and research results.

Result

Nine articles were found that matched the inclusion criteria. Three articles examined the effect of this type of suture on perineal

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Table 1
Journal review on Perineal wound repair or care.

Journal Title	Author	Place and date of the research	Research design	Research objectives	Research samples	measurement used	Research results
Randomized Trial of 3 Techniques of Perineal Skin Closure During Second-degree Perineal Laceration Repair ⁴	Carolyn W. Swenson, MD, Lisa Kane Low, CNM, PhD, Katherine M. Kowalk, BS1, Dee E. Fenner, MD	August 2014–April 2017	A single-blind randomized controlled trial	It compared the pain level and healing of grade II perineal tears that were sutured, unsutured, and using surgical glue.	Postpartum mothers who had 2nd-degree perineal tears. Consisting of 14 mothers who had sutured, 11 were not sutured, and ten were given surgical glue to repair the perineal skin	The pain was assessed using the McGill Short Form, 100-mm visual analog scale (VAS), and the Present Pain Index (PPI) on the first day, 2 weeks, 6 weeks and 3 months postpartum. Assessment of perineal wound healing using Redness, Edema, Ecchymosis, Drainage, Approximation (REEDA) in the 6 postpartum week. pain assessment using the Verbal Rating Scale (VRS)	The level of pain felt by mothers whose perineal tears were sutured was higher than those without sutures or surgical glue. There is no difference between healing time, genital-self image, intimate relationship, and also postpartum depression
Continuous versus discontinuous suture in perineal injuries produced during delivery in primiparous women: a randomized controlled trial ⁷	Juan Miguel Martínez-Galiano, Beatriz Arredondo-López, Leticia Molina-García, Ana María Cámara-Jurado, Eva Cocera-Ruiz ³ and Miguel Rodríguez-Delgado	southeast Spain November 2016–May 2018	A single-blind randomized clinical trial	To determine the difference between continuous and discontinuous sutures for pain, other postpartum disorders, and urinary/feces incontinence.	Primiparous postpartum women who suffered second-degree perineal tears/episiotomy were divided into two groups: continuous suturing (n: 70) and intermittent sutures (n: 64)		Mothers with continuous sutures experienced less pain, less need for analgesia, and less urinary incontinence than mothers who received discontinuous sutures.
Effect of far-infrared radiation on perineal wound pain and sexual function in primiparous women undergoing an episiotomy ⁸	Li-Hua Huang, Yu-Fen Lai, Gin-Den Chen, Maw-Sheng Lee, Soo-Cheen Ng	Taiwan, May 2016–May 2017	Prospective randomized study	To determine the effect of Far-InfraRed (FIR) on perineal pain and sexual function	Postpartum mothers who experienced second-degree perineal tears or episiotomy were divided into 2 groups. The group was given Far-InfraRed (FIR) therapy 24 hours after delivery, every 12 hours for 2 days (n: 18), and the control group was not given the intervention (n: 22).	The pain scale was measured using the Visual Analogue Scale (VAS) at the first and sixth weeks postpartum and the Pelvic Organ Prolapse Urinary Incontinence Sexual Questionnaire (PISQ-12) to evaluate the postpartum sexual function at 6 weeks, 3 months, and 6 months postpartum. Evaluation of sexual function using a valid scale from Sánchez et al. ¹⁰ .	No mother complained of discomfort during thermal therapy or skin irritation and also no adverse effects after therapy. Almost all mothers experienced mild pain 1 week after delivery, and there was no significant difference between the FIR group or the groups in terms of pain level or sexual function.
Suture type used for perineal injury repair and sexual function: a randomized controlled trial ⁹	Juan Miguel Martínez-Galiano, Beatriz Arredondo-López, Manuel Hidalgo-Ruiz, Alicia Narvaez-Traverso, Inmaculada Lopez-Morón & Miguel Delgado-Rodríguez	Southeastern Spain, November 2016–May 2018	Single-blind randomised clinical trial	This study aims to determine the effect of the suture technique used on perineal wounds on the sexual function of women after childbirth	Primiparous mothers who experienced second-degree perineal injuries or episiotomy during delivery consisted of 70 mothers who received continuous sutures and 64 who received Interrupted sutures.		Mothers who received continuous sutures had faster normal sexual intercourse, easier orgasms, sexual communication, and better sexual satisfaction than mothers who received interrupted sutures.

Journal review on Perineal wound repair or care.

Journal Title	Author	Place and date of the research	Research design	Research objectives	Research samples	measurement used	Research results
Capacitive-resistive radiofrequency therapy to treat postpartum perineal pain: A randomized study ¹¹	Florence Bretelle, Chantal Fabre, Marine Golka, Vanessa Pauly, Brimbelle Roth, Valérie Bechadergue, dan Julie Blanc	France, 1 June 2017–October 2017	A double-blind single-center randomized controlled trial	To evaluate the effect of capacitive-resistive radiofrequency therapy on perineal pain after vaginal delivery	60 Postpartum mothers with perineal tears or episiotomy consisting of 29 mothers who received radiofrequency therapy and 31 mothers who did not.	Pain scale using Visual Analog Scale (VAS) at 2 days after therapy.	There was no significant difference between the groups of mothers who were given radiofrequency therapy and not given to perineal pain or sexual activity. In mothers who were given RF therapy, there was a decrease in perineal discomfort when walking
The Effects of Cold Application to the Perineum on Pain Relief After Vaginal Birth ⁶	Derya K. Senol, Ph.D., RN, dan Ergul Aslan, RN	Turkey, the year 2013	An experimental randomized controlled study	To determine the effectiveness of the cold gel pad against perineal pain after vaginal delivery	The total sample was 200 primiparous and multiparous pregnant women, which consisted of 2 groups: experimental group 100 and control group 100	Visual analog scale (VAS), and the postpartum comfort questionnaire (PCQ).	There was a significant decrease in perineal pain during the healing period and in daily activities after cold gel pad therapy
Early postpartum biofeedback-assisted pelvic floor muscle training in primiparous women with second-degree perineal laceration: Effect on sexual function and lower urinary tract symptoms ¹²	Ting-Feng Wu, Li-Hua Huang, Yu-Fen Lai, Gin-Den Chen, dan Soo-Cheen Ng	Taiwan, December 2016–November 2017	Prospective cohort study	To determine the effect of pelvic floor muscle training with electromyography-biofeedback in early postpartum on sexual function and lower urinary tract symptoms.	Forty-five primiparous mothers after vaginal delivery suffered grade II perineal tears, which consisted of 23 mothers in the pelvic floor muscle training group and 22 in the control group.	The Pelvic Organ Prolapse Urinary Incontinence Sexual Questionnaire (PISQ-12) and the Urinary Distress Inventory short-form questionnaire (UDI-6) immediately after delivery, 6 weeks, 3 months, and 6 months postpartum	Pelvic floor muscle training with EMG-BF did not relieve sexual function and lower urinary tract symptoms until 6 months postpartum. This can be seen from the absence of significant differences between the intervention and control groups on sexual function and lower urinary tract symptoms.
Perineal Pain Management with Cryotherapy after Vaginal Delivery: A Randomized Clinical Trial ¹³	Ítalo Morais, Andréa Lemos, Leila Katz2 Lorena Fernandes Rosendo de Melo, Mariano Maia Maciel, dan Melania Maria Ramos de Amorim	Brazil, May 2012–October 2012	A randomized, double-blind clinical controlled study	To determine the effect of ice therapy on perineal pain and vaginal edema	Eighty mothers, after vaginal delivery consisting of 40 groups were given ice packs on the perineum for 20 minutes after 2 hours postpartum. The administration was carried out 6 times with an interval of 60 minutes. In the control group, the mother was given a water compress with a temperature of 20°-25° with the same time and frequency as the ice pack group	Combined scale for assessing pain (CSAP) for assessing pain in the perineum	There was no significant difference in perineal pain between the groups given ice therapy and those that were not. There was no significant difference in the incidence of perineal edema in the intervention and control groups. Both groups show a downward trend. At 24 hours post-pulmonary, moderate/severe edema was more common in the control group (22.5%) and in the intervention group (7.9), but there was no statistically significant difference.

Journal review on Perineal wound repair or care.

Journal Title	Author	Place and date of the research	Research design	Research objectives	Research samples	measurement used	Research results
Postoperative management of postpartum perineal tears ¹⁴	P. Vasileva, S. Strashilov, and A. Yordanov	Bulgaria, 1 January 2019–March 2019	A prospective, single-center, cohort study	To determine the effect of natural fats and pure herbal extracts (Theresienol) on the symptoms and the recovery in the early postpartum period.	Twenty women with per vias naturales birth, with perineal trauma Women, were divided into 10 people. In the first group (group A), treatment with Theresienol (natural oil) started on the second hour after birth with a frequency of three times a day. The application was by topical rubbing of the oil on the affected area slowly (throughout 30–60 s) after the genital dressing. In the other group (group B), no topical preparations were used.	Pain symptomatology was assessed with a visual analog scale (VAS) for pain on the first, the third, and fifth day after birth	Theresienol therapy is effective against clinical symptoms and further monitoring and inclusion of new patients will show whether the risk of objective short-term and long-term complications is reduced

pain, and another six discussed treatments to reduce the adverse effects of perineal tears—five articles using a visual analog scale in assessing postpartum perineal tears pain (Table 1).

Discussion

This review found that the type/technique of sutures used in repairing second-degree perineal tears or episiotomy affects the perineal pain felt by postpartum mothers. The gold standard for repairing perineal wounds is to use absorbable sutures.¹⁵ However, suturing the second-degree perineal skin tears can increase postpartum pain compared to unsutured or given surgical glue.⁴ The technique/type of perineal suture can affect perineal pain, where continuous sutures experience lower perineal pain, better sexual activity, and lower need for analgesia than mothers who are interrupted sutures.^{7,9} This is due to the use of less material and also fewer knots.⁹ Post-suturing pain is caused by the inflammatory response of the sutures, which can last until the sutures are removed or absorbed by the body.⁴ Leaving the perineal skin unsutured, especially in grade 1st and grade 2nd perineal tears may reduce postpartum pain from day 14 to 6 weeks, in addition to reducing the use of analgesia and the incidence of dyspareunia at three months postpartum, but can leave gaping scars and long-term effects of this action is not yet known.^{5,15,16}

Postpartum care, especially for mothers who have perineal tears, needs to be considered to prevent chronic pain after delivery, help mothers control pain, prevent constipation and monitor urinary retention.^{5,17} It is necessary to use various pharmacological and non-pharmacological methods and safe drugs for the mother to reduce postpartum pain or maternal morbidity due to perineal tears and the side effects of perineal tears.¹⁴ The provision of far-infrared radiation therapy, capacitive-resistive radiofrequency therapy, pelvic floor muscle training in early postpartum did not provide additional impact in reducing perineal pain or sexual function. However, radiofrequency therapy helps reduce perineal discomfort when walking.¹¹ Cold therapy on the perineum for 20 min can reduce perineal pain and increase the release of endorphins and stimulate the healing process.^{1,5,6,13} Administration of

Theresienol (a natural oil) can reduce perineal wound pain and reduce swelling and erythema. The described medicine acts by the following mechanism: 1) Hydrates tissues; 2) Reduce bacterial invasion and inflammation; 3) Stimulates migration and proliferation of fibroblastic and endothelial cells; 4) Stimulates epithelialization.¹⁴ The medications reviewed in this article do not cause any adverse health effects.

Conclusion

Sutures and technique/suturing second-degree perineal tears or a postpartum episiotomy can affect perineal pain. Cold gel pad therapy and treatment with natural oil on perineal wounds can affect perineal pain and wound healing.

Conflicts of interest

The authors declare no conflict of interest.

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