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Effect of perineal massage versus no perineal massage during second stage of labour on frequency of episiotomy and perineal tears in nulliparous women - A Randomised Controlled Trial

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1. INTRODUCTION

Perineal tears, in particular, are a cause for concern during the second stage of labour. These tears involve the accidental laceration of the perineum, the region of tissue located between the vaginal opening and the anus. Perineal tears can range in severity, from minor to more severe tears that extend into the muscles of the pelvic floor. The consequences of perineal tears can have both short-term and long-term complications for a woman's health and well-being.[1]

In the short term complications, perineal tears often result in pain, discomfort, and difficulty in mobility during the postpartum period. The healing process can be prolonged, leading to significant physical discomfort for new mothers as they care for their newborns. Furthermore, perineal tears can affect a woman's psychological well-being, as they may experience anxiety and distress related to the trauma they have endured during childbirth.[2]

In the long term complications, perineal tears can contribute to more severe complications. These may include chronic pain, sexual dysfunction, and pelvic floor disorders such as urinary incontinence or pelvic organ prolapse. These issues can negatively impact a woman's quality of life and require ongoing medical attention and intervention.

Episiotomy is equivalent in extent to a spontaneous second degree perineal tear.[1] It has been shown in several studies that episiotomy, which was thought to be a protective method for a long time, increases the risk of third and fourth-degree perineal tears, hemorrhage, prolonged postpartum pain, dyspareunia, and late perineal healing. Anal incontinence is higher in patients who underwent episiotomy than those with spontaneous perineal tears. All these evidence justify the recommendation that episiotomy should not be routinely performed in vaginal delivery.[3]

Perineal massage involves the gentle and deliberate manual stretching and manipulation of the perineum during the second stage of labor. Perineal massage stimulates both rehabilitation and re-elasticization of tissue. Perineal massage can save the perineal integrity, reduce postpartum pain and regain pelvic floor muscle function after delivery.[1]

Perineal massage increases elasticity and blood supply to the perineum and leads to easier stretching of muscles and less pain during childbirth.[4]

2. REVIEW OF LITERATURE

Sangeeta Shah et al. (2023 INDIA) This study was an observational study aimed to investigate the effects of perineal massage on the rate of episiotomies and perineal tears during second stage of labour. 150 primigravida women were included in this study which were randomly assigned in control and intervention group. The rate of episiotomy in the control group 93.3% and in massage group 80%. Time duration in the intervention group was 38.99 mins and massage group was 49.45 mins. The 1st, 2nd and 3rd degree lacerations in the massage group were 9.3%, 4%, 0% respectively and 1.3%, 2.7%, 2.7% in control group respectively. 6.7% woman in the intervention group were benefited from perineal massage by maintaining an intact perineum.[5]

Li Y et al. (2023 China) This study conducted was a systematic review and meta-analysis focusing on the effects of perineal massage during childbirth on maternal and neonatal outcomes, specifically in primiparous women. The review included 17 randomized controlled trials involving 3248 primiparous women. The analysis revealed that perineal massage starting during the second stage of labor significantly improved perineal outcomes, reducing the rate of lacerations and episiotomy.

Furthermore, it effectively shortened the duration of

both the first and second stages of labor. The Relative risk of having an intact perineum was 1.74 with confidence interval of 1.11 - 2.73. Women in PM group were 1.74 times more likely to have an intact perineum. The study concluded that perineal massage beginning during the second stage is beneficial for perineal health in primiparous women, though more high-quality research is needed for a standardized massage procedure and to explore its short- and long-term effects.[6]

Zang Y et al. (2023 CHINA) The aim of this study was to summarize the evidence from systematic reviews on various techniques used during the second stage of labor to reduce perineal laceration. The search encompassed English and Chinese databases, focusing on publications from 2016 to 2021. 18 reviews were included, with four deemed of moderate-to-high methodological quality. The findings showed that perineal massage and warm compresses significantly decreased the incidence of severe perineal laceration. However, the study did not provide a specific percentage of woman who benefited from perineal massage. In contrast, the hands-off technique had no impact on perineal laceration, and Ritgen's maneuver showed mixed results. Upright positions did not increase the risk of severe laceration but did increase the risk of second-degree laceration in certain conditions. The conclusion was that perineal massage and warm compresses are effective in preventing perineal laceration during the second stage of labor.[7]

Marcos-Rodríguez A et al.(2023 SPAIN) The study focused on the effectiveness of perineal massage during the second stage of labor in reducing perineal trauma. A systematic review was conducted using various databases like PubMed and Scopus, with specific search terms related to perineal massage and childbirth. The inclusion criteria were strict, only considering articles published in the last decade that involved randomized controlled trials. After screening 1172 articles, 9 were selected for detailed analysis, with 7 ultimately included in a meta-analysis. The main finding was that perineal massage significantly decreased the number of episiotomies. However, it did not significantly affect the incidence or severity of perineal tears. The study concluded that perineal massage during the second stage of labor is effective in preventing episiotomies and reducing the duration of this labor stage.[8]

Venugopal V et al. (2022 INDIA) The study was aimed to evaluate the effect of perineal massage during the late first and second stages of labor on reducing episiotomy and perineal trauma rates. The study was a meta analysis which included 10 trials including 4088 women, focusing on severe perineal trauma and episiotomy rates as primary outcomes. The results indicated a significantly lower incidence of severe perineal trauma in the perineal massage group (RR: 0.52, CI: 0.29-0.94) compared to the control group. Additionally, there was a lower, but not statistically significant, incidence of episiotomy in the massage group. The study concluded that perineal massage during labor could effectively reduce the risk of severe perineal trauma, including third and fourth degree lacerations, suggesting its usefulness as a preventive intervention during labor.[9]

Goh YP et al. (2021 MALAYSIA) The study was conducted as a randomized trial, at a Malaysian university hospital, aimed to evaluate the combined effect of massage and warm compress (MassComp) on the perineum during the second stage of labor, compared to standard "hands-off" care. The study involved 156 nulliparous women at term. The primary outcome was the need for perineal suturing due to injury (episiotomy or tear). The results showed that the MassComp group had significantly lower perineal repair rates (67%) compared to the control group (91%). Other notable outcomes included higher patient satisfaction with care, lower rates of major perineal injury i.e second degree or higher intervention group 43% control group 66% and episiotomies (37% 53% respectively) , and similar intervention-to-delivery intervals and spontaneous vaginal delivery rates between the two groups. The study concluded that massage and warm compress during pushing can decrease perineal suturing, major perineal injuries, and episiotomies, and improve maternal satisfaction. [10]

Oglak SC et al.(2020 TURKEY) This observational study investigated the effect of perineal massage during the second stage of labor in preventing perineal trauma. It was Conducted with 171 nulliparous women. Notable findings include a significantly shorter second stage of labor in the massage group 36 mins and 46 mins in controls group , a higher rate of intact perineum 28.8% in massage group , 8% in control group. post-delivery, and higher rates of first- and second-degree perineal tears in massage group (32.2% , 10%) compared to the control group (10%, 5%) However, the incidence of episiotomy was significantly lower in the massage group (28.7%) than control group (76.1%). The study concludes that perineal massage should be considered a routine intervention to reduce the incidence of perineal trauma during childbirth.[11]

Romina S et al. (2020 IRAN) The study was conducted as a single-blind randomized controlled trial, in Iran. It explored the effect of perineal massage with Ostrich oil on episiotomy and lacerations in nulliparous women. The study involved 77 women, divided into intervention and control groups. The intervention group received perineal massage with Ostrich oil during the active phase and second stage of labor. The primary findings were a significant decrease in the rate of episiotomy in the intervention group (51.3%) compared to the control (94.7%) with no significant difference in perineal lacerations between the groups. 51.3% woman benefited from perineal massage in intervention group. The study suggests that perineal massage with Ostrich oil is an effective, safe, and inexpensive method to reduce the rate of episiotomy in vaginal delivery.[12]

Abdelhakim AM et al. (2020 BANGKOK) The study was a meta-analysis sought to determine if antenatal perineal massage could reduce the incidence of perineal trauma and other postpartum complications. 11 randomized controlled trials involving

3467 patients were analyzed. The results showed that women who received antenatal perineal massage had a significantly lower incidence of episiotomies (RR=0.79), perineal tears (RR=0.79) (especially third- and fourth-degree tears), and other benefits like better wound healing, less perineal pain, reduced duration of the second stage of labor, and improved Apgar scores. The study concluded that antenatal perineal massage is associated with a lower risk of severe perineal trauma and postpartum complications.[13]

Aquino CI et al.(2020 ITALY) This study evaluated whether perineal massage during vaginal delivery decreases the risk of perineal trauma. A meta-analysis of 9 randomized controlled trials involving 3374 women was performed. The intervention typically involved a midwife performing perineal massage during the second stage of labor. The incidence of intact perineum was higher (RR: 1.40 CI: 1.01-0.82), and the incidence of episiotomy was lower in the perineal massage group (RR:0.56 CI: 0.38-0.82). The study concluded that perineal massage during labor is associated with a significantly lower risk of severe perineal trauma, such as third and fourth-degree lacerations. The results indicated a significantly lower incidence of severe perineal trauma in women receiving perineal massage compared to those who did not.[14]

Raja et al. (2019 INDIA) This study aimed to investigate whether perineal massage during second stage of labour could decrease perineal trauma in the form of episiotomy and perineal tears. 150 antenatal women in labour were randomly assigned in intervention and control group. The result indicated reduction in frequency of episiotomy (80% in massage group 93.3% in control group), duration of second stage of labour (42 mins, 51 mins respectively). 1st 2nd and 3rd degree perineal lacerations in massage group were 6.7% 9.3%. 0% and in control group 1.3% 4% 4% respectively. Perineal massage was also protective against severe form of third-degree perineal tear.[1]

Farideh Akhlaghi et al. (2019 MASSHAD) This study aimed to investigate the effect of perineal massage during labour on the need of episiotomies. The study was a double blind randomised clinical trial conducted with 99 patients. Perineal massage was performed 4 times lasting 2 mins each at interval of 4 hours. A median of 45 was observed in the perineal massage and a median of 55 was observed in the control group. The result showed significant lower need of episiotomies (and shorter duration of second stage of labour. This study indicates 31% of women benefited from perineal massage. The spontaneous perineal tear were more in the PM group [2]

Hala and el Fttah Ali. (2015 EGYPT) This study was an Randomised Control Trial conducted to assess the effect of perineal massage and kegel exercise on the episiotomy rate. 180 pregnant woman were recruited for this study. They were divided into 3 groups, one receiving perineal massage group, one receiving kegel exercise and one as control group. The study revealed significant reduction in episiotomy in massage and exercise group (massage group 20%, exercise 36%, control 42%). The severity of perineal laceration was less in massage and exercise group with no 4th degree laceration. 1st degree and second degree lacerations in massage group was 71.4% , 23.8% respectively , in exercise group 31.3% , 37.5% respectively and in control group 22.4% , 22.4% respectively. 3rd and 4th degree laceration in control group was 28.6% and 26.5% respectively.[15]

Roonak shahoei et al. (2013 IRAN) The study was to determine the effects of perineal massage in the second stage of labour on perineal lacerations, episiotomies and perineal pain in nulliparous women. This randomised controlled trial included 195 nulliparous women. The control and intervention group were assigned randomly. The study concluded that perineal massage during the second stage of labour can reduce the need to episiotomy (in massage group 69.41% , in control group 92.31%), perineal injuries (1st and 2nd degree laceration were 23.61% and 2.11% respectively no vestibular or 3rd degree lacerations were noted in the massage group. In control group 5.13% vestibular laceration were observed. In control group 1st degree, 2nd degree and 3rd degree perineal lacerations were 7.69%, 2.56%, 1.05% respectively).[4]

Aasheim, Nilsen ABV et al. (2011 NORWAY) This study was used to assess the incidence and morbidity associated with perineal trauma. This was a quasi Randomised Trial reviewed by three different authors, 22 trials were eligible for this study. The study suggests that warm compresses and perineal massage may reduce third and fourth degree tears but the outcome and impact was inconsistent. There was insufficient data to show whether perineal technique result in improved outcome.[16]

Discussion

Health is regarded as a fundamental human right and a societal objective, making it a national priority in numerous nations. Each year, over 130 million infants are born globally. The process of labor and delivery can present complications for the mother.[17] Vaginal births often lead to genital tract injuries in first-time mothers, who experience complications such as short-term postpartum pain and discomfort, as well as dyspareunia, more frequently than those who deliver with an intact perineum. Consequently, various strategies to mitigate perineal trauma have been investigated. The degree of genital tract injury sustained during delivery is directly linked to pain, bleeding, and the necessity for wound healing.[18,19]

Postpartum hemorrhage poses a significant risk to maternal health, particularly due to large episiotomy incisions, the severity of tears, and delays in repairing episiotomies. Furthermore, injuries to the perineum and the accompanying pain can lead to postpartum challenges, including difficulties in walking, sitting, nursing, and caring for the newborn.[20] Perineal injuries not only inflict physical harm but also contribute to emotional and psychological distress for the mother, as well as delayed wound healing due to suboptimal anatomical results, poor incision site recovery, and heightened perineal pain.[21]

As highlighted, perineal trauma following vaginal delivery can lead to both short- and long-term complications. The potential risks associated with vaginal birth are concerning, thus any intervention aimed at reducing the likelihood of genital tract trauma is recommended. Some experts have suggested the routine practice of perineal massage to lower the incidence of perineal trauma during vaginal deliveries. Perineal massage may enhance the elasticity of the perineal muscles, thereby decreasing muscle resistance and allowing the perineum to stretch during labor without rupturing, thus eliminating the need for an episiotomy.[22]

The process of vaginal delivery is characterized by numerous physical and psychological stressors. These stressors begin at the onset of the first stage of labour and peak during the second stage, which is regarded as the pinnacle of the vaginal delivery experience. Maternal distress during labour is primarily attributed to two well-recognized sources: perineal pain resulting from the straining and tearing of the perineum and pelvic floor muscles, along with severe abdominal and back pain caused by spontaneous uterine contractions.[23,24]

The occurrence of perineal trauma following vaginal birth shows considerable variation, with estimates indicating that between 53% and 79% of women encounter some form of perineal trauma. The majority of these cases involve first- and second-degree tears; the prevalence of third- and fourth-degree perineal tears among women who deliver vaginally ranges from 0.1% to 10.9%, contingent upon the specific study. Risk factors associated with perineal trauma encompass fetal macrosomia, nulliparity, precipitous labour, malpresentation, malposition, shoulder dystocia, and assisted vaginal deliveries, such as those utilizing forceps or vacuum extraction. Although episiotomy may mitigate the risk of spontaneous perineal tears, it is important to note that, like many surgical interventions, it carries significant potential complications.[25,26]

Perineal trauma has been associated with considerable short- and long-term maternal morbidity, extended hospital stays, and disrupted mother-child bonding. Potential complications arising from perineal trauma include hemorrhage, hematoma, infection, vesicovaginal fistula, painful intercourse, and incontinence of urine, flatus, and feces. Perineal pain is commonly reported among nulliparous women and is correlated with conditions such as insomnia and anxiety.[27] Undoubtedly, these complications can adversely impact a woman's quality of life and her ability to care for her infant. Nulliparous women are particularly susceptible to spontaneous perineal lacerations due to their un-stretched perineum, and they may respond favorably to perineal massage, which aims to reduce perineal muscle resistance.[28]

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REFERENCES

[1] Raja A, Pallavee P, Samal R. Effect of perineal massage in the second stage of labour, on the incidence of episiotomy and perineal tears. Int J Reprod Contracept Obstet Gynecol. 2019;8(4):1387-1393.

[2] Akhlaghi F, Sabeti Baygi Z, Miri M, Najaf Najafi M. Effect of Perineal Massage on the Rate of Episiotomy. J Family Reprod Health. 2019 Sep;13(3):160-166. PMID: 32201491; PMCID: PMC7072029.

[3] Oglak SC, Obut M. Effectiveness of Perineal Massage in the Second Stage of Labor in Preventing Perineal Trauma. Gynecol Obstet Reprod Med [Internet]. 2020Aug.4 [cited 2024Jan.30];26(2):88-93.

[4] Shahoei R, Zaheri F, Nasab LH, Ranaei F. The effect of perineal massage during the second stage of birth on nulliparous women perineal: a randomization clinical trial. Electron Physician. 2017;9(10):5588-5595.

[5] Shah S, Sundari LD, Damavarapu K, et al. Perineal Massage and its Effects on the Incidence of Episiotomy and Perineal Trauma during Second Stage of Labor. J South Asian Feder Obst Gynae 2023;15(2):141–143.

[6] Li Y, Wang C, Lu H, Cao L, Zhu X, Wang A, Sun R. Effects of perineal massage during childbirth on maternal and neonatal outcomes in primiparous women: A systematic review and meta-analysis. Int J Nurs Stud. 2023 Feb;138:104390.

[7] Zang Y, Hu Y, Lu H. Effects of different techniques during the second stage of labour on reducing perineal laceration: An overview of systematic reviews. J Clin Nurs. 2023 Apr;32(7-8):996-1013.

[8] Marcos-Rodríguez A, Leirós-Rodríguez R, Hernandez-Lucas P. Efficacy of perineal massage during the second stage of labor for the prevention of perineal injury: A systematic review and meta-analysis. Int J Gynaecol Obstet. 2023 Sep;162(3):802-810.

[9] Venugopal V, Deenadayalan B, Maheshkumar K, Yogapriya C, Akila A, Pandiaraja M, Poonguzhali S, Poornima R. Perineal Massage for Prevention of Perineal Trauma and Episiotomy During Labor: A Systematic Review and Meta-Analysis. J Family Reprod Health. 2022 Sep;16(3):162-169.

[10] Goh YP, Tan PC, Hong JGS, Sulaiman S, Omar SZ. Combined massage and warm compress to the perineum during active second stage of labor in nulliparas: A randomized trial. Int J Gynaecol Obstet. 2021 Dec;155(3):532-538.

[11] Oglak SC, Obut M. Effectiveness of Perineal Massage in the Second Stage of Labor in Preventing Perineal Trauma. Gynecol Obstet Reprod Med [Internet]. 2020Aug.4 [cited 2024Jan.30];26(2):88-93.

[12] 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. Iran J Nurs Midwifery Res. 2020;25(2):134-138.

[13] Abdelhakim AM, Eldesouky E, Elmagd IA, Mohammed A, Farag EA, Mohammed AE, Hamam KM, Hussein AS, Ali AS, Keshta NHA, Hamza M, Samy A, Abdel-Latif AA. Antenatal perineal massage benefits in reducing perineal trauma and postpartum morbidities: a systematic review and meta-analysis of randomized controlled trials. Int Urogynecol J. 2020 Sep;31(9):1735-1745.

[14] Aquino CI, Guida M, Saccone G, Cruz Y, Vitagliano A, Zullo F, Berghella V. Perineal massage during labor: a systematic review and meta-analysis of randomized controlled trials. J Matern Fetal Neonatal Med. 2020 Mar;33(6):1051-1063.

[15] Hala Abd El fttah Ali. "Effects of Prenatal Perineal Massage and Kegel Exercise on the Episiotomy Rate." IOSR Journal of Nursing and Health Science, vol. 4, no. 4, ver. VII, Jul. - Aug. 2015, pp. 61-70.

[16] Aasheim V, Nilsen ABV, Reinar LM, Lukasse M. Perineal techniques during the second stage of labour for reducing perineal trauma. Cochrane Database Syst Rev. 2017;2018(6):CD006672.

[17] Berghella V, Baxter JK, Chauhan SP. Evidence-based labor and delivery management. Am J Obstet Gynecol. 2008;199:445–54.

[18] Seehusen DA, Raleigh M. Antenatal perineal massage to prevent birth trauma. Am Fam Physician. 2014;89:335–6.

[19] Kushavar H, Shirinkam R, Ivan Baga R, Sohrabi M. A comparison of" hands off versus" hands-on"(ritgen) techniques on perineal trauma during birth in nulliparous women. Journal of Ardabil University of Medical Sciences (JAUMS) 2009;9:235–41.

[20] McCandlish R. Perineal trauma: prevention and treatment. J Midwifery Womens Health. 2001;46:396–401.

[21] Ghaffari L. Frequency and complications of episiotomy in Mirza Kochak-khan Hospital in Tehran. M.Sc Thesis. Tehran University of Medical Sciences; 1996.

[22] Beckmann MM, Stock OM. Antenatal perineal massage for reducing perineal trauma. Cochrane Database Syst Rev. 2013;(4):CD005123.

[23] Ibrahim H. A.-F., Elgzar W. T. I., Hassan H. E. Effect of Warm Compresses versus Lubricated Massage during the Second Stage of Labor on Perineal Outcomes Among Primiparous Women. Nursing and Health Sciences Journal . 2017;6:64–76.

[24] Hofmeyr G. J., Singata-Madliki M. The Second Stage of Labor. Best Practice & Research Clinical Obstetrics & Gynaecology . 2020;67:53–64.

[25] Anatomy P. Prevention and Management of Obstetric Lacerations at Vaginal Delivery. Obstetrics & Gynecology . 2016;128:1–15.

[26] Yang Q., Cao X., Hu S., et al. Lubricant for Reducing Perineal Trauma: A Systematic Review and Meta-Analysis of Randomized Controlled Trials. 2022. pp. 4–5.

[27] Barca J. A., Bravo C., Pintado-Recarte M. P., et al. Risk Factors in Third and Fourth Degree Perineal Tears in Women in a Tertiary Centre: An Observational Ambispective Cohort Study. Journal of Personalized Medicine . 2021;11(8):p. 685.

[28] Ugwu E. O., Iferikigwe E. S., Obi S. N., Eleje G. U., Ozumba B. C. Effectiveness of Antenatal Perineal Massage in Reducing Perineal Trauma and Post-Partum Morbidities. A randomized controlled trial . 2018:1–7.