

Perineal Massage: A Supportive Practice in the Second Stage of Labor

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ABSTRACT

Background: Labor is defined as regular and painful uterine contractions that cause progressive dilation and effacement of the cervix. The labor has three clinical stages such as First stage (dilation of cervix up to 6cm), Second stage (complete dilation of the cervix 10 cm and ending with expulsion of the fetus), Third stage (delivery of placenta). Perineal injuries of varying degrees occur in 53–89% of women experiencing vaginal delivery, with the highest incidence in primiparous women and with 4% to 11% sustaining an obstetrical anal sphincter injury episiotomy a surgically planned incision on the perineum and the posterior vaginal wall during the second stage of labor. It is a selective procedure rather than routine. It used to minimize overstretching and rupture of the perineal muscles and fascia to reduce the stress and strain on the fetal head. During the second stage of labor perineal massage is very effective in relaxing the perineum, reducing the perineal pain, preventing laceration and also helps in easier pushing of fetus from the floor of the pelvis by increasing the blood supply to perineum, increasing the elasticity of perineal muscle. **Method:** For this study the reference are taken from the randomized clinical trials (RCT) and systematic review, published over the last 10 years, on the perineal massage on second stage of labor. **Conclusion:** perineal massage during second stage of labour have demonstrated consistent benefits, including lower rates of episiotomy, reduced incidence of obstetric anal sphincter injuries.

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1. INTRODUCTION

Childbirth and puerperium are of the most important periods in women's lives and can affect different aspects of their lives. When compared to surgical delivery, vaginal birth is recognised to have better results for most mothers and newborns [1]. 80% of births globally in 2021 were vaginal deliveries, with rates varying from 95% in sub-Saharan Africa to 45% in the Caribbean [2]. An

episiotomy may be required even if birthing is a natural process since there is a chance of perineal damage as the new-born's head is out. Around 85% of vaginal deliveries are linked to some level of perineal trauma, which can seriously impair a woman's health [3]. Active labour quality is impacted by perineal trauma, which is injury to the genital organs during birth that can occur spontaneously or as a result of an episiotomy, particularly in primiparous women [4]. Only a small percentage of primiparous women will have an intact perineum after vaginal delivery. Perineal tears are almost always present after forceps-assisted births, following episiotomy and are frequently observed after spontaneous vaginal deliveries [4,5].

2. RELATED WORK

Sl. No	Author Name	Topic	Treatment	Results
1	The American College of Obstetrician: Practice bulletin Survey	Prevention and Management of Obstetric Lacerations at Vaginal Delivery	Perineal Massage during Second Stage of labor	Perineal massage during the second stage of labor may help reduce third-degree and fourth-degree lacerations (Level B).
2.	Rodrigues S et al (2023).,	Perineal massage and warm compresses – Randomised controlled trial for reduce perineal trauma during labor	N = 656; Control (328 participants) and experimental (328 participants) group. Soft perineal massage/warm compresses in the second stage of labor program, warm compresses	This study concluded that a protective effect of perineal massage and warm compresses technique during the second stage of labor compared with control group (hands-on), particularly with an increase in incidence of intact perineum and a decrease second-degree tear, OASIS, and episiotomy rates.
3.	Shahoei R et al (2017).,	The effect of perineal massage during the second stage of birth on nulliparous women perineal: A randomization clinical trial	N = 190; Intervention = 95 and control group = 95; Experimental group : In the second stage of labor perineal massage was given for one minute between 3 o'clock and 9 o'clock positions Control Group : Routine care	The results of the study state that frequency of episiotomy was 69.47% in the intervention group and 92.31% in the control group, and the difference was statistically significant ($p<0.05$). The results revealed 23.16% of first-degree perineal laceration and 2.11% of second-degree perineal laceration in the intervention group, and no vestibular laceration or third and fourth-degree lacerations in the intervention group. The study concluded that perineal massage during the second stage of labor can reduce the

				need to episiotomy, perineal injuries, and perineal pain.
4.	Goh YP et al., (2021)	Combined massage and warm compress to the perineum during active second stage of labor in nulliparous: A randomized trial.	N = 156; Experimental group = 78 – Massage and warm compress; control group = 78 – hands off	Perineal repair rates were 53/79 (67%) for Mass Comp versus 70/77 (91%) for control (relative risk [RR] 0.72, 95% confidence interval [CI] 0.61– 0.98, number needed to treat for an additional beneficial outcome [NNTb] 5, 95% CI 2.83– 8.62, P < 0.001). Massage and warm compress during pushing decreased the perineal suturing, major perineal injury, and episiotomy rates and improved maternal satisfaction.
5.	Simic M., et al (2017)	Duration of second stage of labor and instrumental delivery as risk factors for severe perineal lacerations: population-based study.	Study population included 52 211 primiparous women undergoing vaginal delivery with cephalic presentation at term.	Unconditional logistic regression analysis was used to calculate crude and adjusted odds ratios (OR), using 95% confidence intervals (CI). Risk of severe perineal lacerations increased with duration of second stage of labor. Compared with a second stage of labor of 1 h or less, women with a second stage of more than 2 h had an increased risk (aOR 1.42; 95% CI 1.28–1.58). Compared with non-instrumental vaginal deliveries, the risk was elevated among instrumental vaginal deliveries (aOR 2.24; 95% CI 2.07–2.42).
6.	Demirel G., et al (2015)	Effect of perineal massage on the rate of episiotomy and perineal tearing	Healthy pregnant women presenting for their first or second delivery at 37–42 weeks of pregnancy were enrolled during the first stage of labor. Participants were	Both groups contained 142 participants. Episiotomy was performed among 44 (31.0%) women 24 in the massage group and 99 (69.7%) in the control group (P=0.001). Lacerations were recorded among 25 (4.2%) women in

			randomly assigned (1:1) to the massage group (10-minute perineal massage with glycerol four times during the first stage and once during the second stage of labor) or control group (routine care)	the massage group and 6 (4.2%) in the control group (P=0.096).
7	Akhlaghi F., et al (2019)	Effect of perineal massage on the rate of episiotomy.	The study is a double-blind randomized clinical trial conducted with 99 patients (n=49 controls; n=50 cases).	The need for episiotomy was significantly lower in the PM group than in the control group (p = 0.05). Spontaneous perineal tears were significantly higher in mothers of the PM group (p = 0.05. The spontaneous tear degree in the 20 mothers who did not require episiotomy (p = 0.5) and the degree of perineal tear in mothers who needed an episiotomy (n = 79; p = 0.1) were not significantly different in the two groups. In the PM group members who did not require episiotomy (n = 14) and the mother underwent a spontaneous tear, first-degree tears were more frequent than second-degree ones. The median duration of the active stage of labor until the stage completion was lower in the PM group than in the control group, although the difference did not reach statistical significance (p = 0.3).

3. LABOR

Labor is described as the process by which the foetus, placenta and membrane are expelled through the birth canal. Labor begins when uterine contractions become consistent and cervical effacement and distention increase [9]. A woman in labor undergoes three stages. They are First stage – Onset of true labor pain to complete dilation of cervix (up to 10cm), Second stage – Full

dilation of cervix to expulsion of foetus from birth canal and the Third stage - begins after expulsion of foetus to expulsion of placenta.

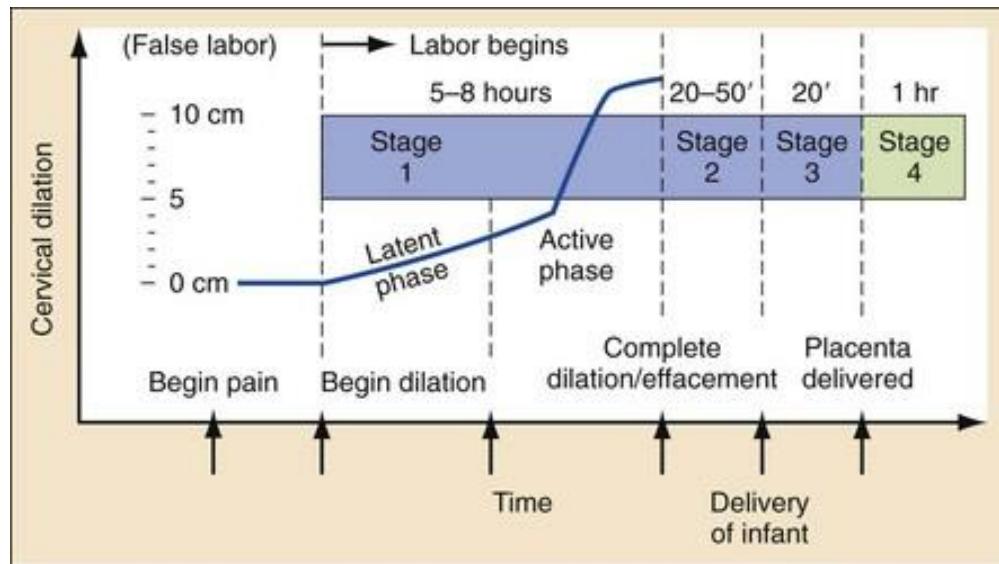


Figure 1. Stages of labor (<https://aneskey.com/labor-and-delivery-and-their-complications/>)

Extended second stage of labour has been linked to serious perineal cuts and other negative mother outcomes [6]. During the second stage of labor the foetal head may complicate the perineum, causing the anus to enlarge as it descends. Consequently, a pad can be utilised to support the perineum by holding it in place and protecting the anus while the other hand maintains flexion. This helps to control the head's rate of passage, lessen perineal expansion, and minimise tearing [9].

4. PERINEAL TEARS

The perineum is separated into the anterior urogenital and posterior anal triangles and runs from the pubic arch to the coccyx. Any damage to the labia, anterior vagina, urethra, or clitoris is referred to as anterior perineal trauma. Injury to the posterior vaginal wall, perineal muscles, external, internal, or both anal sphincters, and anorectal mucosa is referred to as posterior perineal trauma [8,9]. Perineal injuries of varying degrees occur in 53–89% of women experiencing vaginal delivery, with the highest incidence in primiparous women and with 4% to 11% sustaining an obstetrical anal sphincter injury (OASIS) [7,10]. A number of risk factors, including midline episiotomy, fundal pressure, upright delivery postures (deep squatting or lithotomy), protracted second stage of labour (>60minutes), vaginal surgical operations, epidural use, and foetal macrosomia, have been identified as contributing to the development of severe perineal injuries. Nonetheless, the primary risk factor has been shown to be nulliparity [8,9]. The grading of perineal tear are as

- First-degree tear occurs spontaneously in the perineal skin
- Second- degree tear consists of the perineal muscles and skin
- Third-degree tears include the anal sphincter complex
 - 3a: Less than 50% of external anal sphincter thickness torn.
 - 3b: More than 50% external anal sphincter thickness torn.
 - 3c. both external anal sphincter and internal sphincter torn.
- Fourth-degree tears include anal sphincter complex and anal epithelium^(9, 13).

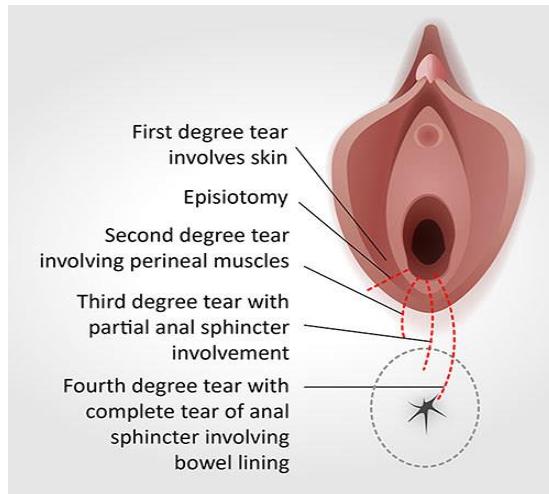


Figure 2. Degrees of Perineal Tear (<https://www.rcog.org.uk/for-the-public/perineal-tears-and-episiotomies-in-childbirth/perineal-tears-during-childbirth/>)

The prevalence of First-degree tear range from 5.5% to 16.4%, second-degree tears range from 29.0% to 35.1%, third-degree tears is 1.8% to 7.1%, and fourth-degree tears range from 0% to 0.3% [10]. The degree of perineal tear depend on the perineal length, Infant's head circumference and birth weight ≥ 3150 grams posed a risk of third and fourth degree perineal tear. In spontaneous vaginal delivery, if mediolateral episiotomy was performed among patients with short perineal length of ≤ 3 cm remained a significant risk factor for third- and fourth-degree perineal tears with a probability of 26.64%. It was nearly certain that third and fourth degree perineal tears would occur if the baby's head circumference was more than 33.5 cm [8]. The overall incidence of wound complications after perineal trauma includes infection rates of 0.1% to 23.6% and dehiscence rates of 0.21% to 24.6 % [11].

5. EPISIOTOMY

Episiotomy is a surgical enlargement of the posterior aspect of the vagina by an incision to the perineum during the last part of the second stage of labor [13]. According to the Royal College of Obstetricians and Gynaecologists, the episiotomy rate was 8% in the Netherlands, 14% in the UK, 50% in Europe, and 99% in Eastern Europe. Episiotomy has a protective role against the trauma of sphincter ani, especially in primipara and labor process with aids. An episiotomy is an example of second degree perineal tear [9]. There are two primary kinds of episiotomies performed. In the posterior fourchette, a midline (sometimes called a median) episiotomy begins within 3 mm of the midline and extends 0 degree to 25 degree downward in the sagittal plane. In the posterior fourchette, a Medio lateral episiotomy begins within 3 mm of the midline and is conducted laterally towards the ischial tuberosity at an angle of at least 60 degrees from the midline [12]. Episiotomy is performed only when the head is visible during a contraction to a diameter of 3 to 4cm and if episiotomy is used in conjunction with forceps delivery, it is performed only after the application of blades [14].

6. PERINEAL MASSAGE

Perineal protective delivery procedures are advised in order to avoid perineal cuts and the morbidity that goes along with them. Perineal massage prevents perineal laceration, protect perineal integrity and enable women to rapidly regain function during postpartum period. Perineal

massage has its unique advantages as a simple, affordable, and easy preventative intervention [4]. It can be administered both antenatally and also during the second stage of labor. Early postpartum perineal pain may be reduced more successfully when perineal massage is given during the second stage of labour. Throughout the antenatal phase and the second stage of labour, perineal massage can enhance a variety of perineal outcomes, such as greater perineal integrity, a lower risk of episiotomy, and a lower incidence of second-degree perineal tears. Perineal massage during the antenatal period significantly reduces the faecal and flatus incontinence in postpartum and when given only during second stage aids in reduction of postpartum haemorrhage whereas given during both periods can reduce the duration of second stage of labor. Antenatal massage during pregnancy reduced the risk of perineal damage (second- and third-degree tears), instrumental delivery, episiotomy, and the subsequent postpartum perineal pain [15]. Perineal massage was restricted to during contraction- coordinated pushing to minimize procedure- related pain or discomfort. A soft perineal massage is performed between 3 o'clock and 9 o'clock positions (U-shaped reciprocating motion) wearing sterile gloves and lubricated their hand with sterile lubricant. A commercial water-based gel is used for perineal massage. The perineum will be massaged with the lubricated gloved index and middle fingers just inside the lower vagina, moved from side to side (about 1 s in each direction) with gentle downward pressure on the perineum. The pressure will be maintained at an intensity at which the woman did not feel any pain. The massage will be continued for the duration of pushing coordinated with contractions until near- crowning. Perineal massage reduces stress and pressure, enhancement of blood circulation and pain relief [16, 17].

7. CONCLUSION

Perineal trauma remains a frequent complication of vaginal delivery, particularly among primiparous women. While episiotomy has traditionally been performed to reduce severe tears, routine use is not supported by current evidence. Interventions such as perineal massage and warm compresses during the second stage of labour have demonstrated consistent benefits, including lower rates of episiotomy, reduced incidence of obstetric anal sphincter injuries, and improved maternal comfort. Antenatal perineal massage further enhances perineal integrity and reduces postpartum morbidity. Adoption of these simple, low-cost strategies can contribute significantly to maternal health by preserving perineal function, reducing pain, and improving recovery in the puerperium. Further large-scale randomized trials are warranted to standardize techniques and guide practice across diverse clinical settings.

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