

Perineal Massage to Prevent Perineal Trauma in Childbirth

Leonid Kalichman PT PhD

Department of Physical Therapy, Steyer School of Health Professions, Sackler Faculty of Medicine, Tel Aviv University, Ramat Aviv, Israel

Key words: perineal massage, perineal trauma, genital tract trauma, childbirth, episiotomy

*IMAJ*2008;10:531–533

Perineal trauma is defined as any damage to the genitalia occurring during childbirth, either spontaneously or because of a surgical incision or episiotomy [1,2]. A large British study showed that 85% of women delivering vaginally will sustain some form of perineal trauma [3]. Over two-thirds of such women will require suturing. Genital tract lacerations after childbirth also weaken the pelvic floor muscles. Perineal trauma affects women's physical, psychological, and social well-being in the immediate postnatal period as well as in the longer term. Possible deleterious effects include painful intercourse, urinary and fecal incontinence, and persistent perineal pain [2,4]. Thus, at 8 weeks after birth, 22% of new mothers reported continued perineal pain, and for some women, pain may persist for a year or longer [5]. The likelihood of perineal pain and sexual problems in the postpartum period is the least for women whose perineum remains intact [6].

Recently, several studies showed that perineal massage can reduce the likelihood of perineal trauma and ongoing perineal pain and is generally well accepted by women. This editorial will discuss the evidence for the beneficial effect of perineal massage on perineal trauma.

Perineal massage in the last weeks of gestation

Perineal massage was shown to reduce the occurrence of perineal trauma in two small pilot controlled trials [7,8]. However, both these studies had serious methodological flaws. In the first, large numbers of women were excluded from the analysis, and, in the second, participants chose their own study group. In a retrospective descriptive study, Davidson et al. [9] evaluated the association between 13 different factors and perineal laceration. They found that prenatal perineal massage was associated with fewer perineal lacerations in two groups of women: a) primiparous women and b) multiparous women with one previous birth who had an episiotomy with that birth. Massage was not, however, associated with decreased lacerations in multiparous women with one previous birth who had not had an episiotomy. Another non-randomized controlled study [10] demonstrated that performing perineal massage during pregnancy showed neither a protective nor a detrimental effect on the occurrence of perineal trauma. The failure to reach a statistically significant outcome could be explained by the smaller sample of women included in this study (N=121) and the non-randomized study design. The recent prospective observational study of Eogan and team [11] showed that postnatal perineal pain was much reduced in the group of women who practiced antenatal perineal massage

compared with the controls ($P = 0.029$). Women over the age of 30 in the massage group were more likely to be delivered with an intact perineum than controls, although the impact did not reach statistical significance in this study.

A recent systematic review that was published in The Cochrane Database of Systematic Reviews [12] included three randomized controlled trials of high methodological quality [13–15] that involved 2434 women. Labrecque et al. [13] reported on their pilot study involving just 46 women. Labrecque et al. [13] and Shipman et al. [14] studied only women whose previous delivery was not vaginal. Labrecque et al. [15] involved women with and without a previous vaginal birth and the randomization of participants was stratified by parity. All trials were of digital perineal massage performed by the woman or her partner. The main findings of this systematic review were that antenatal massage was associated with an overall reduction in the incidence of trauma requiring suturing – three trials, 2417 women, relative risk 0.91 (95% confidence interval 0.86–0.96), number needed to treat 16 (10–39). This reduction was statistically significant only for women whose previous delivery was not vaginal – three trials, 1925 women, RR 0.90 (95%CI 0.84–0.96), NNT 14 (9–35). Women who practiced perineal massage were less likely to have an episiotomy – three trials, 2417 women, RR 0.85 (95%CI 0.75–0.97), NNT 23 (13–111). Again, this reduction was statistically significant only for women whose previous delivery was not vaginal – three trials, 1925 women, RR 0.85 (95%CI 0.74–0.97), NNT 20 (11–110). No differences were seen in the incidence of first or second-degree perineal tears or third/fourth-degree perineal trauma. Only women who had previously delivered vaginally reported a statistically significant reduction in the incidence of pain at 3 months postpartum – one trial, 376 women, RR 0.68 (95%CI 0.50–0.91) NNT 13 (7–60). No significant differences were observed in the incidence of instrumental deliveries, sexual satisfaction, or incontinence of urine, feces or flatus for any women who practiced perineal massage compared with those who did not.

An additional randomized controlled trial evaluating the effectiveness of perineal massage during pregnancy in primiparous women was performed by Shimada [16] and published in Japanese. In that study 63 women were randomly assigned to an intervention group (30 women) and a control group (33 women).

RR = relative risk

CI = confidence interval

NNT = number needed to treat

The episiotomy rates in the intervention group were reduced by 21%, which cannot be said to be a statistically significant decrease. As for the comparison of the degree of perineal injury, women in the massage group had less injury than those in the control group. Massage that is performed in the last weeks of gestation neither impairs nor substantially protects perineal function at 3 months postpartum [17].

The paper by Mei-Dan et al. in this issue of *IMAJ* describes a prospective controlled clinical trial that was undertaken at the Soroka University Medical Center in Beer Sheva [18]. The authors compared two groups of nulliparous women: the intervention group comprising 99 women who chose to join this group, and the control group of 104 women who were recruited mostly in the delivery room prior to delivery and after verifying no prior use of massage during the current pregnancy. Women in the intervention group were asked to perform daily perineal massage starting from the 34th week of gestation. There were statistically significant differences in baseline parameters of the groups. The mean maternal age in the intervention group was significantly higher than in the control group (27.6 years and 25.4 years, respectively, $P < 0.05$). The mean gestational age at delivery and mean fetal birth weight were also greater in the massage group (39.3 vs. 38.9 weeks, $P = 0.03$; and 3237 vs. 3130 g, $P = 0.06$, respectively). Women in the intervention group needed more vacuum delivery and cesarean section compared to the control. Other baseline demographic characteristics and birth circumstances were similar between the two groups. On the other hand, the authors found no differences in the number of episiotomies or overall spontaneous tear rates between the groups. Taking into account the inferior baseline conditions of the intervention group, the results of this study suggest that perineal massage in the last weeks of gestation does have a beneficial effect by reducing episiotomy and tear rates.

The authors of all the aforementioned studies emphasized that perineal massage in the last weeks of pregnancy was harmless. And, taking into account the results of the Cochrane Systematic Review [12], pregnant women, especially those whose previous delivery was not vaginal, should be made aware of the likely benefit of perineal massage and should be provided with information on how to perform it.

Perineal massage during the second stage of labor

Stretching and perineal massage in the second stage of labor has been promoted by midwives [19]. We found only two randomized trials that directly evaluated the effect of massage in the second stage of labor [20,21] on different aspects of perineal trauma. Neither study found any evidence for such an effect. In a randomized control trial Stamp et al. [21] found that the massage and stretching of the perineum, that was performed by hospital midwives during the second stage of labor (full dilatation of the cervix or ≥ 8 cm if nulliparous or ≥ 5 cm if multiparous) with a water-soluble lubricant, does not increase the likelihood of an intact perineum or reduce the risk of pain, dyspareunia or urinary and fecal problems. Therefore, perineal massage during

the second stage of labor should not be automatically recommended in every case. On the other hand, both trials did provide good evidence of lack of harm, which itself may be of value. The authors therefore suggest that midwives and other clinicians decide whether to use perineal massage during the labor on the basis of maternal comfort and preferences and their own experience.

Women's views on prenatal perineal massage

Labrecque and co-authors [22] noted that in large randomized controlled trials [14,15] although perineal massage seems acceptable to most participants, a significant number of women do not comply with the instructions to practice massage daily for the last 6 weeks of pregnancy. They performed an observational study to evaluate how women who practiced perineal massage during pregnancy assessed the technique. On average, perineal massage was felt to be quite acceptable (mean \pm standard deviation, 4.09 ± 0.93 on a 6 point Likert scale). Pain and technical problems reported during the first week or two of massage tended to disappear after a few weeks. Women's assessment of the effect of massage on preparation for birth (4.34 ± 1.08) and on delivery (4.18 ± 1.37) was positive. Asked whether they would massage again if they were to have another pregnancy, 79% of the women answered affirmatively and 87% said they would recommend it to another pregnant woman. In the study of Labrecque et al. [15] about 80% of women in the massage groups also said that they would repeat the massage in any subsequent pregnancy and nearly 90% said they would recommend it to another pregnant woman.

Teaching methods and their effect on the practice rate

One randomized study compared the effect of the teaching methods of massage on the practice rate [23]. The experimental group received routine printed and verbal instruction and a 12 minute video demonstration of perineal massage; the control group received only the routine printed and verbal instruction. The rate of practice was much higher in the experimental group; the videotape instruction method was statistically non-significant (odds ratio 2.44, 95%CI 0.79–7.73). The authors suggest that videotape instruction can be offered, but more effective are face-to-face meetings with a physician, nurse-midwife or physical therapist that will allow the woman or couple to ask questions in privacy [23].

Conclusions

Perineal massage in the last weeks of gestation reduces the likelihood of perineal trauma (mainly episiotomies) and ongoing perineal pain. Moreover, this massage is generally well accepted by women. Therefore, women should be made aware of the likely benefit and should be provided with information on how to massage.

The mode of teaching needs further study. Due to the sensitive nature of the topic, printed instructions that can be distributed to pregnant women in a physician or nurse-midwife's

office seems appropriate. The explanation about perineal massage should be a routine part of open childbirth classes, which are usually offered by nurses or physical therapists. Perineal massage during the second stage of labor is not recommended.

References

1. Kettle C. Perineal Tears. London: Nursing Times Books, 1999.
2. Kettle C. Perineal care. *Clin Evid* 1999;2:522–32.
3. McCandlish R, Bowler U, van Asten H, et al. A randomised controlled trial of care of the perineum during second stage of normal labour. *Br J Obstet Gynaecol* 1998;105:1262–72.
4. Glazener CMA. Sexual function after childbirth: women's experiences, persistent morbidity and lack of professional recognition. *Br J Obstet Gynaecol* 1997;104:330–5.
5. Glazener CMA, Abdalla M, Stroud P, et al. Postnatal maternal morbidity: extent, causes, prevention and treatment. *Br J Obstet Gynaecol* 1995;102:282–7.
6. Klein MC, Gauthier RJ, Robbins JM, et al. Relationship of episiotomy to perineal trauma and morbidity, sexual function and pelvic floor relaxation. *Am J Obstet Gynaecol* 1994;171:591–8.
7. Avery MD, Burket BA. Effect of perineal massage on the incidence of episiotomy and perineal laceration in a nurse-midwifery service. *J Nurse Midwifery* 1986;31:128–34.
8. Avery MD, Van Arsdale L. Perineal massage. Effect on the incidence of episiotomy and laceration in a nulliparous population. *J Nurse Midwifery* 1987;32:181–4.
9. Davidson K, Jacoby S, Brown MS. Prenatal perineal massage: preventing lacerations during delivery. *J Obstet Gynecol Neonatal Nurs* 2000;29:474–9.
10. Bodner-Adler B, Bodner K, Mayerhofer K. Perineal massage during pregnancy in primiparous women. *Int J Gynaecol Obstet* 2002;78:51–3.
11. Eogan M, Daly L, O'Herlihy C. The effect of regular antenatal perineal massage on postnatal pain and anal sphincter injury: a prospective observational study. *J Matern Fetal Neonatal Med* 2006;19:225–9.
12. Beckmann MM, Garrett AJ. Antenatal perineal massage for reducing perineal trauma. *Cochrane Database Syst Rev* 2006;1:CD005123.
13. Labrecque M, Marcoux S, Pinault JJ, et al. Prevention of perineal trauma by perineal massage during pregnancy: a pilot study. *Birth* 1994;21:20–5.
14. Shipman MK, Boniface DR, Tefft ME, McCloghry F. Antenatal perineal massage and subsequent perineal outcomes: a randomised controlled trial. *Br J Obstet Gynaecol* 1997;104:787–91.
15. Labrecque M, Eason E, Marcoux S, et al. Randomized controlled trial of prevention of perineal trauma by perineal massage during pregnancy. *Am J Obstet Gynecol* 1999;180:593–600.
16. Shimada M. A randomized controlled trial on evaluating effectiveness of perineal massage during pregnancy in primiparous women [Abstract]. *J Jpn Acad Nurs Sci* 2005;25:22–9.
17. Labrecque M, Eason E, Marcoux S. Randomized trial of perineal massage during pregnancy: perineal symptoms three months after delivery. *Am J Obstet Gynecol* 2000;182:76–80.
18. Mei-Dan E, Walfisch A, Raz I, Levy A, Hallak M. Perineal massage during pregnancy: a prospective controlled trial. *IMAJ* 2008;10:499–502.
19. Enkin M, Keirse MJNC, Neilson J, et al, eds. *A Guide to Effective Care in Pregnancy and Childbirth*. Oxford: Oxford University Press, 2000.
20. Albers LL, Sedler KD, Bedrick EJ, et al. Midwifery care measures in the second stage of labor and reduction of genital tract trauma at birth: a randomized trial. *J Midwifery Womens Health* 2005;50:365–72.
21. Stamp G, Kruzins G, Crowther C. Perineal massage in labour and prevention of perineal trauma: randomised controlled trial. *BMJ* 2001;322:1277–80.
22. Labrecque M, Eason E, Marcoux S. Women's views on the practice of prenatal perineal massage. *Br J Obstet Gynaecol* 2001;108:499–504.
23. Mynaugh PA. A randomized study of two methods of teaching perineal massage: effects on practice rates, episiotomy rates, and lacerations. *Birth* 1991;18:153–9.

Correspondence: Dr. L. Kalichman, Dept. of Physical Therapy, Steyer School of Health Professions, Sackler Faculty of Medicine, Tel Aviv University, Ramat Aviv 69978, Israel.
Phone: (972-52) 276-7050
email: kalihman@zahav.net.il

Capsule



Adherence to Mediterranean diet and risk of diabetes

Martinez-Gonzalez et al. assessed the relation between adherence to a Mediterranean diet and the incidence of diabetes among initially healthy participants – 13,380 Spanish university graduates without diabetes at baseline followed for a median of 4.4 years. The main outcome measures were dietary habits assessed at baseline with a validated 136-item food frequency questionnaire and scored on a 9-point index. New cases of diabetes were confirmed by medical reports and an additional detailed questionnaire was posted to those who self-reported a new diagnosis of diabetes by a doctor during follow-up. Participants who adhered closely to a Mediterranean diet had

a lower risk of diabetes. The incidence rate ratios adjusted for gender and age were 0.41 for those with moderate adherence (score 3–6) and 0.17 for those with the highest adherence (score 7–9) compared with those with low adherence (score < 3). In the fully adjusted analyses the results were similar. A two-point increase in the score was associated with a 35% relative reduction in the risk of diabetes (incidence rate ratio 0.65), with a significant inverse linear trend ($P = 0.04$) in the multivariate analysis.

BMJ 2008;336:1348

Eitan Israeli