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DOES EPISIOTOMY INFLUENCE VAGINAL RESTING PRESSURE, PELVIC FLOOR MUSCLE STRENGTH AND ENDURANCE AND PREVALENCE OF URINARY INCONTINENCE SIX WEEKS POSTPARTUM?

Hypothesis / aims of study

Vaginal delivery is an established risk factor for weakening of the pelvic floor muscles (PFM) and development of pelvic floor dysfunctions such as urinary incontinence (UI) (1). The role of episiotomy on PFM function and prevalence of UI is debated and results differ between studies (1). The aim of the present study was to compare vaginal resting pressure (VRP), PFM strength and PFM endurance and prevalence of UI in women with and without lateral or mediolateral episiotomy six weeks postpartum.

Study design, materials and methods

Three hundred nulliparous pregnant women participating in a prospective cohort study giving birth at the same public hospital and able to understand the native language were recruited to the study. For this cross-sectional analysis six weeks postpartum only women with vaginal deliveries were included. Exclusion criteria were previous miscarriage after gestational week 16. Ongoing exclusion criteria were premature birth < 32 weeks, stillbirth and serious illness to mother or child. Lateral or mediolateral episiotomy was only performed on indications, e.g. foetal distress, imminent risk of severe perineal tear and in most cases when undergoing instrumental delivery. Vaginal resting pressure (cm H_2O), PFM strength (cm H_2O) and endurance (cm H_2Osec) were assessed by a vaginal balloon connected to a high precision pressure transducer. The method has been found to be responsive, reliable and valid when used with simultaneous observation of inward movement of the perineum during contraction (2). Two trained physical therapists blinded to the participants' report of pelvic floor dysfunction assessed PFM function. UI and stress urinary incontinence (SUI) were diagnosed with ICIQ-UI-SF using an electronic questionnaire. Comparison of differences in PFM variables between women with and without episiotomy was analyzed with Independent Sample Student t-test and differences in prevalence of UI with Chi-square/Fischer's test. The results are presented as means with SD or 95% CI or as percentages. P-value was set to ≤ 0.05.

Results

Two hundred and thirty-eight nulliparous women delivering vaginally with mean age 28.5 (SD 4.2) and BMI 23.8 (SD 4.0) provided data six weeks postpartum. Women with episiotomy had longer second stage of labor; 81.2 minutes (SD 48.5) vs 64.0 minutes (SD 48.4), p=0.01, higher infant birth weight; 3590.2 grams (SD 461.1) vs 3459.0 grams (SD 476.9), p=0.05, more women had epidural; 50% vs 35.5%, p=0.05 and more had instrumental assisted vaginal delivery; 33.3% vs 12.7%, p<0.001 than women without episiotomy. Table 1 shows no statistically significant differences in VRP, PFM strength and endurance between women with and without episiotomy. There were no differences in prevalence of UI or SUI between women with and without episiotomy (Table 2).

Table 1. Pelvic floor muscle function six weeks post-partum in primiparous women delivering vaginally with and without episiotomy (n=238)

	No episiotomy n=166	Episiotomy n=72	Mean diff	P-value
VRP (cm H_2O)	30.3 (6.8)	30.3 (8.7)	0.0 (-2.1 to 2.1)	0.1
PFM strength (cm H_2O)	16.0 (12.1)	14.6 (11.1)	1.3 (-1.9 to 4.6)	0.4
PFM endurance (cm H_2O sec)	112.9 (84.0)	100.9 (81.8)	12.1 (-11.0 to 35.1)	0.3

Data within groups expressed as mean with standard deviation (SD), and between group difference as mean difference with 95% confidence interval (CI).

Table 2. Difference in prevalence of UI and SUI 6 weeks postpartum in primiparous women with and without episiotomy (n=235)*

	No episiotomy n=163	Episiotomy n=72	P-value
UI	76 (46.6%)	27 (37.5%)	0.2
SUI	58 (35.6%)	17 (23.6%)	0.1

* n=235, as 3 out of 238 did not answer questionnaire 6 weeks postpartum. Data expressed as n (%).

Interpretation of results

The findings that longer second stage of labor, higher infant birth weight, use of epidural and instrumented vaginal delivery was associated with episiotomy corresponds with other studies. The aim of the present study, however, was to assess a possible influence of episiotomy on PFM variables and prevalence of UI 6 weeks postpartum. No such effects were found and further exploratory statistical analyses were therefore not performed. The strength of the present study is the prospective design, use or a responsive, reliable and valid method to assess PFM function and blinding of the assessors towards UI. Limitation is that there was no a-priori power calculation for assessment of PFM function and UI in relation to episiotomy.

Concluding message

Episiotomy did not affect VRP, PFM strength and endurance or prevalence of UI six weeks postpartum in this cohort of primiparous women.

References

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Disclosures

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