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DOES A MEDIOLATERAL EPISIOTOMY PREVENT A THIRD OR FOURTH DEGREE PERINEAL TEAR DURING AN ASSISTED INSTRUMENTAL VAGINAL DELIVERY?

Hypothesis / aims of study
It has been proven that an assisted instrumental vaginal delivery is associated with an increased risk of a third or fourth degree perineal tear.(1),(2) It remains unclear if structural use of a mediolateral episiotomy during an assisted instrumental vaginal delivery will decrease the risk of a third or fourth degree perineal tear. To evaluate whether a mediolateral episiotomy is preventive for developing a third or fourth degree perineal tear in women undergoing an assisted instrumental vaginal delivery and to asses in these women the prevalence of a third or fourth degree perineal tear.

Study design, materials and methods
A retrospective cohort analysis between 2001 and 2009, using data from the clinical obstetric-database of the Amphia Hospital, Breda, The Netherlands. We selected all patients with live born infants beyond a gestational age of 34 weeks and delivered by an assisted instrumental vaginal delivery. Exclusion criteria were: multiple gestations, breech deliveries, congenital anomalies, and the use of a median episiotomy. The outcome measure was a third or fourth degree perineal tear. Continuous variables were compared using the Student's t test or the non-parametric Mann-Whitney U test. The $\chi 2$ test was used for categorical variables. Continuous variables were summarized as means with standard deviations, or medians with interquartile ranges (IQR). A logistic regression model was used for the risk assessment of the use of a mediolateral episiotomy on the risk for developing a third of fourth degree perineal tear. Treatment effect was presented as odds ratio with 95% confidence interval (CI).

Results
The baseline characteristics of the two groups are shown in table 1. Patients in the group with a mediolateral episiotomy (MLE +) were younger (33.7 vs. 35.8, P< 0.001), used more epidural anesthetics (20.6% vs. 11.8%, P<0.001) and had more blood loss (516 ml vs. 409 ml, P<0.001) compared to the group without a mediolateral episiotomy (MLE -). In the group without a mediolateral episiotomy were more primipara (27.3% vs. 12.3%, P<0.001), and more occiput anterior position (88.2% vs. 82.1%, P<0.001) compared to the group with a mediolateral episiotomy. P <0.05 was considered statistical significant. There were 2970 assisted instrumental vaginal deliveries performed who met the criteria. The incidence of a third or fourth degree perineal tear was 5.7% (n=168/2970). In the group patients with a mediolateral episiotomy the risk of a third or fourth degree perineal tear was 3.3% (n=80/2403), compared to 15.5% (n=88/567) in the group without a mediolateral episiotomy, OR 0.19 (95% CI: 0.14-0.26). After correction was made for gestational age at birth, parity, birth weight, maternal age, use of epidural analgesia, indication for instrumental delivery, cephalic fetal position, and duration of the second stage the risk estimate remains the same, OR 0.20 (95% CI: 0.12-0.34).

Interpretation of results
The risk of developing a third or fourth degree perineal tear in women undergoing an assisted instrumental vaginal delivery is statistical significant fivefold decreased by the use of a mediolateral episiotomy.

Concluding message
We advocate the structural use of a mediolateral episiotomy during an assisted instrumental vaginal delivery, instead of selective use of a mediolateral episiotomy in order to prevent a third or fourth degree perineal tear.

Figure 1. Flow diagram.

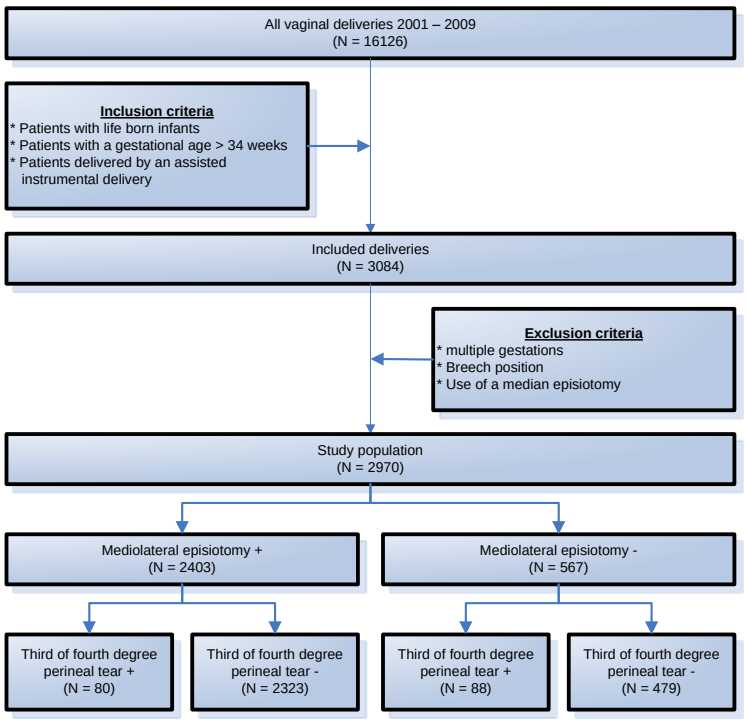

Table 1. Baseline characteristics	MLE +§	(n = 1382)	MLE -#	(n=248)	P
Mother					
Maternal age (years)#	33,7	(± 4,8)	35,8	(± 5,4)	<0,001
Pregnancy					
Gestational age (days)†	282	(274 - 288)	282	(275 - 288)	0,319
Primipara‡	296	(12, 3%)	155	(27, 3%)	<0,001
Delivery					
Occiput anterior position‡	1973	(82, 1%)	500	(88, 2%)	<0,001
Usage of epidural anesthetics‡	494	(20, 6%)	67	(11, 8%)	<0,001
Indication for instrumental delivery (= fetal distress)‡	636	(26, 5%)	163	(28, 7%)	0,271
Duration second stage (minutes)†	70	(41-90)	55	(25 - 83,75)	0,13
Blood loss (ml)#	516	(± 498)	409	(± 336)	<0,001
Daytime obstetrics‡	988	(41, 1%)	232	(40, 9%)	0,931
Child					
Male‡	1331	(55, 4%)	324	(57, 1%)	0,45
Birth weight (gram)#	3467	(± 488)	3409	(± 552)	0,955

#: mean ± sd

†: median (p25 - p75)

‡: n (%)

§: with a mediolateral episiotpmy

#: without a mediolateral episiotomy

References

1. Factors associated with anal sphincter laceration in 40,923 primiparous women. Int Urogynecol J Pelvic Floor Dysfunct 2007; 18:985.
2. Risk factors for anal sphincter tear during vaginal delivery. Obstet Gynecol 2007; 109:29.

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Is this a clinical trial?	**No**
What were the subjects in the study?	**HUMAN**
Was this study approved by an ethics committee?	**No**
This study did not require ethics committee approval because	**the study design is a retrospective cohort analysis with**

	anonymous patient data which did not require approval of the ethical committee of the hospital.
Was the Declaration of Helsinki followed?	**Yes**
Was informed consent obtained from the patients?	**No**