

## THIRD AND FOURTH DEGREE PERINEAL TEARS: PREVALENCE AND RISK FACTORS IN THE THIRD MILLENNIUM

### Hypothesis / aims of study

Prevalence of third and fourth degree perineal tears differs considerably among different populations. Reported prevalence rates vary from 0.5% to 7%, and in some countries there is a significant rise over the last three decades [1,2]. There is also conflicting data regarding the significance of various obstetric risk factors. Among multiple examined obstetric parameters, only nulliparity and instrumental assisted deliveries were consistently found as significant risk factors.

The present study was undertaken to evaluate the current prevalence and risk factors for third and fourth degree perineal tears in a single university-affiliated maternity hospital with approximately 10,000 deliveries per year.

### Study design, materials and methods

The study population comprised 50,905 consecutive women who delivered in our Maternity hospital from January 2005 to December 2009. Of these, 43.9% were primiparae and 56.1% multiparae. Vaginal deliveries and caesarean sections were performed in 76.4% and 23.6% of the women, respectively. The rate of instrumental deliveries was 4.2%; all were carried out by vacuum extraction. Epidural analgesia was administered in 67.1% of the women. Dysfunctional labor was defined by clinical criteria proposed by the American College of Obstetricians and Gynecologists. A third degree tear was defined as disruption of the anal sphincter muscles. Tears involving the rectal mucosa were classified as fourth degree. The study protocol was approved by the local hospital Helsinki committee.

Demographic, medical and obstetric data were prospectively documented and stored in a computerized data base. Obstetric parameters included: maternal age, ethnicity, parity, weight and height, gestational age at delivery, length of first and second stages of labor, use and type of analgesia (epidural, narcotics), labor induction or augmentation, use of oxytocin, mediolateral episiotomy, mode of delivery, newborns birth weight and gender. During the study period, third or fourth degree perineal tears occurred in 96 women (0.25% of the vaginal deliveries). Data from these deliveries were analyzed and compared to data from vaginal deliveries without severe perineal tears. Statistical analysis was performed using Student's *t*-test for continuous data or  $\chi^2$  for categorical data.  $P < 0.05$  was considered statistically significant. Data are summarized as mean  $\pm$  standard deviation (SD), or percentage according to the variables.

### Results

96 women (0.25% of the vaginal deliveries) had third (84 women), or fourth (12 women) degree perineal tears. The mean age of the women was 30.5  $\pm$  4.8 (range 20-41 years). 65 (68%) women were primiparae, and 14 (14.6%) were of Asian origin (12 of whom were from the Philippines). 45 (47%) women received oxytocin for either labor induction or augmentation, and 74 (77%) received epidural analgesia. Duration of the second stage of labor was 83  $\pm$  68 minutes. 15 (16%) women had, by definition, prolonged second stage. 76 (79%) women had spontaneous vaginal deliveries and 20 (21%) delivered by vacuum extraction. Fetal presentation was persistent occipito posterior in 8 (8.3%) cases. A mediolateral episiotomy was undertaken in 37% of the 76 spontaneous vaginal deliveries, and in all of the vacuum extractions. Mean birth weight was 3278  $\pm$  432 grams, 6 (6.25%) of the newborns were heavier than 4000 grams.

Of the various obstetric parameters, Asian ethnicity, nulliparity, persistent occipito posterior and vacuum extraction were significantly more common among women who had third or fourth degree perineal tears than those who did not.

### Interpretation of results

Results of our study demonstrate a very low prevalence rate of third and fourth degree perineal tears. It is quite possible that the true rate is higher since some injuries are probably not accurately diagnosed. Nevertheless, the rate is much lower than previously reported. Asian ethnicity, nulliparity, persistent occipito posterior presentation and assisted-vacuum deliveries were found to be significant risk factors among our patients.

### Concluding message

Third and fourth degree perineal tears were diagnosed in 0.25% of vaginal deliveries in a single university-affiliated maternity hospital. Identification of patients at risk may facilitate the use, or avoidance, of certain obstetric interventions in order to prevent such significant injuries.

### References

1. Int Urogynecol J 2005; 16:304-307.
2. Europ J Obstet Gynecol Reprod boil 2009; 146:71-75.

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|--|---------------------------|
| <b>Specify source of funding or grant</b>              | None                      |
| <b>Is this a clinical trial?</b>                       | No                        |
| <b>What were the subjects in the study?</b>            | HUMAN                     |
| <b>Was this study approved by an ethics committee?</b> | Yes                       |
| <b>Specify Name of Ethics Committee</b>                | Hospital Ethics Committee |

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| <i>Was the Declaration of Helsinki followed?</i>        | Yes |
| <i>Was informed consent obtained from the patients?</i> | Yes |

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