

# Risk Factors For Perineal Tears During Delivery Of Singletons In Cephalic Presentation

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## Abstract

**Aim:** To study risk factors for perineal lacerations and therefore to prevent them given that they are associated with short and long term maternal complications like perineal pain and superficial dyspareunia.

**Methods:** This retrospective study was conducted from the 1st of January to the 31st of December 2010 in the maternity of the University Teaching Hospital Yaoundé (Cameroon). All cases of perineal tears that occurred during delivery of singletons in cephalic presentation were recruited.

**Results:** The incidence of perineal tears was 13.5% (230/1695). First degree perineal tears occurred in 176 cases (76.5%), second degree in 51 cases (22.1%) and 3rd degree perineal tear in 3 cases (1.3%). No 4th degree perineal tear was observed. Risk factors for 2nd and 3rd degree perineal tears were nulliparity, maternal age of 27 and above, fetal weight >3500 g, instrumental deliveries, deliveries of adolescents.

**Conclusion:** In the above mentioned conditions, the perineum must be well protected and a mediolateral episiotomy should be done to prevent severe perineal tears if many risk factors are present.

## INTRODUCTION

Perineal lacerations during delivery were observed in 18.3% of parturitions in our service in 2004<sup>1</sup>, and this rate had to be reduced. Perineal lacerations are associated with short term complications like perineal pain, haemorrhage, partial dehiscence, asymmetry, infection. Long term complications like superficial dyspareunia<sup>2,3</sup> and persistent perineal pain<sup>2</sup> could occur. Perineal tears need to be prevented. Some risk factors are known and these include primiparity, large fetal head circumference, macrosomia, advanced maternal age, fetal head malposition, former perineal scar.<sup>4</sup> Severe perineal lacerations (3rd and 4th degree perineal tears) can occur if the perineal length is less than 3 cm, if midline episiotomy is done, in cases of prolonged second stage and oxytocin use.<sup>4,5</sup> Mediolateral episiotomy is used to prevent severe perineal tears, but some studies have shown that avoiding episiotomies when tears are presumed to be imminent increases the number of patients with intact perineum and the number of cases with only minor perineal trauma.<sup>6</sup> Black women seem less prone to have severe perineal lacerations.<sup>7</sup> The aim of this study was to identify risk factors for perineal lacerations in order to try to avoid these perineal tears.

## PATIENTS AND METHODS

This retrospective study was conducted from 1st January to 31st December 2010 in the maternity of the University Teaching Hospital of Yaoundé (Cameroon). All singletons in cephalic presentation whose deliveries were complicated by perineal tears were recruited. For each case, the following parameters were recorded: maternal age and parity (after delivery), gestational age, fetal birth weight, Apgar score at the 1st and 5th minutes, and the status of the birth attendant. The delivery room records were screened to have the total number of singleton vertex deliveries during the period of study. This study was approved by the institutional ethics committee. Our data were analysed using SPSS 16.0. The Student's t-test and the Fisher's exact test were used for comparison. The significance level was 0.05.

## RESULTS

During the period under study, 230 perineal tears occurred out of 1695 singleton cephalic deliveries giving 13.5%. First degree perineal tears occurred in 176 cases (76.5%), second degree in 51 cases (22.1%) and 3rd degree perineal tear in 3 cases (1.3%). No 4th degree perineal tear was recorded. Furthermore, 163 (9.6%) episiotomies (all mediolateral) were conducted.

Mean age of patients who had 1st degree perineal tears was

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26.4 ± 5.2 years with a range of 16 to 41 years while it was 27.9 ± 5.5 years with a range of 17 to 41 years in patients who had 2nd and 3rd degree perineal tears (P>0.05).

The parity ranged between 1 and 7 with a mean of 1.7 ± 1.1 in the group with 1st degree perineal tears.

Parity ranged between 1 and 6 with a mean of 1.9 ± 1.3 amongst those with 2nd and 3rd degree perineal tears. When compared with 1st degree perineal tears, the difference in parity was not significant (P>0.10). Perineal tears occurred frequently in primipara and paucipara (Table I & II).

**Table 1**

Distribution of perineal tears by parity.

Parity	number	%
1	137	59.6
2	51	22.2
3	21	09.1
4	9	03.9
5	8	03.5
6	3	01.3
7	1	00.4
<b>Total</b>	<b>230</b>	<b>100</b>

**Table 2**

Distribution of 2nd and 3rd degree perineal tears by parity.

Parity	number	%
1	30	55.6
2	12	22.2
3	07	13.0
4	01	01.8
5	03	05.6
6	01	01.8
<b>Total</b>	<b>54</b>	<b>100</b>

The gestational ages varied between 35 and 44 weeks with a mean of 39.4 ± 1.4 weeks in the group with 1st degree perineal tears and between 34 and 43 weeks with a mean of 39.9 ± 1.4 in the group with 2nd and 3rd degree perineal tears (P<0.05).

Fetal weights ranged between 2101 and 4117 g with a mean of 3253 ± 400 g in the group with 1st degree perineal tears and between 2781 and 4738 g with a mean of 3878 ± 427 g

in the group with 2nd and 3rd degree perineal tears (P<0.001).

The mean Apgar score at the 1st minute was 8.2 ± 1.6 in the group with 1st degree perineal tears with a range of 0 to 10. In the group with 2nd and 3rd degree perineal tears, it ranged between 0 and 10 with a mean of 7.9 ± 2.0 (P>0.10).

Main risk factors for 2nd and 3rd degree perineal tears were maternal age of 27 and above and fetal weight above 3500 g (Table III).

**Table 3**

Risk factors for 2nd and 3rd degree perineal tears:

Risk factors	Number	%
Big fetus (>3500 g) + Maternal age ≥ 27 years	33	61.1
Fetal birth weight > 3500 g	11	20.4
Maternal age ≥ 27 years	04	07.4
Instrumental deliveries	02	03.7
Adolescent (≤ 19 years)	02	03.7
Not found	02	03.7
<b>Total</b>	<b>54</b>	<b>100</b>

First degree perineal tears occurred more when the delivery was conducted by midwives (197 cases /1391) than when it was conducted by obstetricians and residents (31 cases /304), but the difference was not statistically significant (P>0.07, OR 0.6, 95% CI 0.4, 0.9). Second and third degree perineal tears occurred more when the delivery was conducted by obstetricians and residents (12 cases /304) than when it was conducted by midwives (42 cases /1391), but the difference was not statistically significant (P>0.37, OR 1.1, 95% CI: 0.6, 2.2).

## DISCUSSION

The incidence of perineal tears in our study (13.5%) is lower than that of 18.8% found by other authors.<sup>8</sup> First degree perineal tears are the most encountered (76.5% in our study). Perineal tears affected mostly primipara (Table I & II). This has already been noticed in other studies.<sup>9,10</sup> This may be due to poor maternal compliance when pushing. Mean maternal age was slightly increased in patients who had 2nd degree perineal tears, but the difference was not statistically significant.

The mean gestational age was higher in women who had 2nd and 3rd degree perineal tears and this was statistically significant. This is related to the increasing fetal weight with increasing gestational age.

Concerning the mean fetal birth weight, it was higher in patients who had 2nd and 3rd degree perineal tears with a

statistically significant difference. This has already been noticed by some authors.<sup>5,9</sup>

Mean Apgar score at the 1st and 5th minutes was slightly lower in patients who had a 2nd or 3rd degree perineal tear than in those who had a 1st degree perineal tear, but the difference was not statistically significant. This might be explained by the fact that the fetal head might have slightly been traumatised when it was tearing the perineal muscles. It is hence advised to perform episiotomy in cases of acute fetal distress, rigid perineum or prematurity.

Risk factors for 2nd and 3rd degree perineal tear were maternal age  $\geq 27$  years and excessive fetal weights ( $> 3500$  g). When these 2 factors co-existed, the risk of having a 2nd or 3rd degree perineal tear was highly increased (Table III).

This may be due to the rigidity of perineum observed with increasing maternal age. These observations have already been made by some authors.<sup>4,11</sup> Other risk factors were instrumental deliveries when episiotomy was not done and adolescent parturients ( $\leq 19$  years).

There was no statistically significant difference in the occurrence of perineal tears when deliveries were conducted by obstetricians, residents or midwives.

Since perineal lacerations are associated with early and late maternal complications, they must be prevented. For instance, Schaub et al observed that systematic vaginal application of an obstetric gel showed a significant reduction in the length of the 2nd stage of labour and a significant increase in perineal integrity.<sup>12</sup>

### CONCLUSION

This study has shown that risks factors for 2nd and 3rd degree perineal tear was primiparity especially when women was 27 years and above, fetal birth weight above 3500 g, instrumental deliveries and adolescent deliveries. When 2 of these factors co-existed, the risk was highly increased. Perineum should be well protected in those cases and we should not hesitate to perform a mediolateral episiotomy when imminent tear is present in order to prevent high degree perineal tears.

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