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The Relation Between Perineal Length and Lacerations During Labor

Fatma Ahmed Abo-Romia[a]

Abstract:
Background: Perineal length is thought to affect the risk of perineal lacerations in vaginally delivered women **Aim of research:** to investigate the possible role of perineal length as a risk factor for development of perineal lacerations during vaginal delivery. **Study design: correlation descriptive.** The study was conducted at Elhelal Elahmar hospitals in Alexandria . **Subjects and methods:** A convenience sample of Eighty women with singleton pregnancies who went into spontaneous labor at term during the study period were included in the study. All participants were subjected to general examination, abdominal palpation and vaginal examination was performed to assess cervical effacement/length, dilatation, cervical position, consistency, membranes, liquor, presentation, position, caput, moulding and station. Perineal measurements (to the nearest 0.5 cm) were taken at the beginning of the active phase of labor (effacement of 80-100% and 3-4cm dilatation). The length of the perineum was determined as the distance between the fourchette and center of the anal orifice. **Results:** Comparison between women with perineal length ≤ 3.5 cm (group I) and those with perineal length > 3.5 cm (group II) revealed that women in GI had significantly longer 2nd stage of labor and significantly higher frequency of perineal lacerations. Comparison between those with perineal lacerations (PL) and women without in those who didn't have episiotomy has shown that women with perineal lacerations had significantly longer 2nd stage of labor and larger head circumferences of the newborn baby. **Conclusions:** Women with short perineal length are at increased risk of perineal lacerations during vaginal delivery. Other factors associated with increased prevalence of perineal lacerations are prolonged 2nd stage of labor and increased neonatal head circumference.

Keywords: perineal length – perineal lacerations

INTRODUCTION

Perineal trauma during childbirth is very common, occurring in about 40 % of women during their first birth and about 20% in subsequent births.(1) Any laceration involving more than the perineal skin and the subcutaneous tissue must be regarded as an obstetric complication. Lacerations involving the perineal and other vulvae muscles, resulting in rectal incontinence and sexual dysfunction, have a major impact on the quality of life of the women and should be avoided whenever

[a]Obstetric and Gynecologic Nursing, Faculty of Nursing, University of Tanta

possible.[2] Severe perineal tears which involve the anal sphincters and/or the rectal mucosa are identified in 0.6-0.9 % of vaginal deliveries.[3]

Perineal lacerations occur during delivery of the head and shoulders of the fetus. During a normal vertex delivery it must be taken into account that the final step in the mechanism of normal birth. Therefore, it is recommended that the perineum should be supported during the process of gradual stretching, and the presenting part must be assisted in extension.[2] Recognized risk factors for perineal lacerations include maternal factors (precipitate labor and very narrow introitus), fetal factors (large fetus, occipitoposterior position and abnormal presentation) and obstetric care factors (uncontrolled/precipitate delivery, assisted deliveries, maldirected episiotomy, extended episiotomy by tearing).[4,5]

However, very little is known about the relative interaction or confounding effect of the length of the perineum as a potential risk factor.[6] Hence, a ‘‘short’’ or ‘‘long’’ perineum is often cited in the literature as a risk factor for severe perineal injury without a clear description of the normal measurements of the perineum.[7] Episiotomy relationship to perineal length is also rarely, if ever, described in obstetric or operative texts.[8]

Aim of the study to the present study aims to investigate the possible role of perineal length as a risk factor for development of perineal lacerations during vaginal delivery

Materials And Method:

Study design: correlation descriptive design

Hypothesis was that patients with a shortened perineal body during labor are at increased risk of more extensive posterior lacerations than those with a perineal body of normal length.

Materials

This is a prospective observational study

Setting

The study was conducted at Elhelal Elahmar hospital in Alexandria.

Subject

A convenience sample of eighty women who were available and met the criteria of the research study in the place in which of the study sample collected with singleton pregnancies who went into spontaneous labor at term during the study period were included in the study. Women with multiple pregnancies, preterm or induced labor, and those who had a cesarean delivery were excluded.

Tool of data collection

Based on review of relevant literature, questionnaire was used to interview the studied women about their age and obstetric characteristics and women with perineal lacerations .and other tool of the examination.

Method

It was tested for content validity by 5 juries, who were experts in the related field for the purpose of the study women will be approached and informed about the purpose of study before they will be asked to participate in the study and their consent will be obtained

All participants were subjected to general examination, abdominal palpation to determine the fundal level, fundal grip, pelvic grip, umbilical grip fetal lie, presentation and position. Assessment of the head engagement, expected fetal weight, monitoring of uterine contraction and auscultation of fetal heart rate were also performed. Vaginal examination was performed to assess cervical effacement/length, dilatation, cervical position, consistency, membranes, liquor, presentation, position, caput, moulding and station.

Perineal measurements (to the nearest 0.5 cm) were taken in the beginning of the active phase of labor (effacement of 80-100% and 3-4cm dilatation). The length of the perineum was determined as the distance between the fourchette and center of the anal orifice. Perineal measurements

were obtained using a non stretchable flexible measuring tape disinfected by betadine against the perineal tissue.[9] As suggested elsewhere,[10] we used the perineal measurement of 3.5 cm as cut off to divided the studied women into two groups: group I (G I) with perineal length ≤ 3.5 cm and group II (GII) > 3.5 cm.

Statistical analysis

Statistical analysis was achieved using the Statistical Package for Social Science 11.0 computer program (SPSS). Numerical data were represented in the form of mean ± SD while categorical data were represented in the form of number and percent. Student t test was used to compare the basic study findings while chi-square test was used to compare categorical data.

RESULTS

The mean age and obstetrical findings of the studied women were shown in table-1. The studied women had a mean age of 23.2 ± 3.3 years and a mean gestational age of 38.2 ± 0.8 weeks. Among the 80 studied women, 56 were primiparous (70.0 %), 20 (25%) had perineal length ≤ 3.5 cm, 64 had episiotomies (80.0 %) and 6 women had perineal lacerations (7.5 %). The delivered infants had a mean weight of 3.3 ± 0.7 kg and a mean head circumferences of 33.8 ± 0.6 cm.

Table. 1 Distribution of the studded women by mean age and obstetric characteristics

Mean Age (years)	23.2 ± 3.3	
Mean Gestational age (weeks)	38.2 ± 0.8	
Parity	Primiparous	56 (70.0 %)
	Multiparous	24 (30.0 %)
Mean Duration of the 1st stage of labor (hours)		4.4 ± 0.8
Mean Duration of the 2nd stage of labor (minutes)		35.7 ± 5.5
Perineal length	≤ 3.5 cm	20 (25.0 %)
	> 3.5 cm	60 (75.0 %)
Episiotomy		64 (80.0 %)
Perineal lacerations		6 (7.5 %)
Mean Infant weight (kg)		3.3 ± 0.7
Infant sex	Male	42 (52.5 %)
	Female	38 (47.5 %)
Mean Head circumference (cm)		33.8 ± 0.6

The sample size(n=80)

Comparison between women with perineal length ≤ 3.5 cm (GI) and those with perineal length > 3.5 cm (GII) regarding the the mean age and obstetrical characteristics is shown in table-2. It is clear that women in GI had significantly longer 2nd stage of labor and significantly higher frequency of perineal lacerations.

Table-2 Comparison between women with perineal length ≤ 3.5 cm (GI) and women with perineal length > 3.5 cm (GII) regarding the mean age and obstetrical characteristics (n=80)

		G I (n=20)	**GII (n=60)**	**P value**
Age (years)		22.9 ± 4.3	24.2 ± 3.5	0.72
Gestational age (weeks)		39.5 ± 0.2	38.5 ± 0.5	0.51
Parity	Primiparous	15 (75.0 %)	41 (68.3 %)	0.57
	Multiparous	5 (25.0 %)	19 (31.7 %)	
Duration of the 1st stage of labor (hours)		4.3 ± 0.7	4.5 ± 0.9	0.48
Duration of the 2nd stage of labor (min.)		**37.3 ± 3.2**	32.6 ± 5.1	0.017*
Episiotomy		17 (85.0 %)	47 (78.3 %)	0.52
Perineal lacerations		4 (20.0 %)	2 (3.3 %)	0.014*

* Significant results "at p≤ 0.05

Comparison between women with perineal lacerations (PL) and those without in women who didn't have episiotomy regarding their age and obstetrical characteristics is illustrated in table-3. Women with perineal lacerations had significantly longer 2nd stage of labor and larger head circumferences of the newborn baby.

Table-3 Comparison between women with perineal lacerations (PL) and women without in those who didn't had episiotomy regarding the mean obstetrical characteristics (n=16)

		PL (n=6)	No PL (n=10)	P value
Age (years)		24.3 ± 2.9	22.8 ± 3.5	0.28
Gestational age (weeks)		39.1 ± 0.2	38.4 ± 0.3	0.25
Duration of the 1st stage of labor (hours)		4.1 ± 0.7	4.5 ± 1.0	0.19
Duration of the 2nd stage of labor (min.)		39.2 ± 1.3	33.9 ± 3.2	0.011*
Infant weight (kg)		3.4 ± 0.6	3.2 ± 0.8	0.15
Infant sex	**Male**	4 (66.7 %)	5 (50.0 %)	0.52
	Female	2 (33.3 %)	5 (50.0 %)	
Head circumference		35.2 ± 0.4	32.9 ± 0.9	0.009*

* Significant results "at p≤ 0.05

DISCUSSION

The diagnostic and prognostic potential of perineal length had been previously highlighted by the International Continence Society.[11] In the present study,

The present study showed no statistically significant differences between GI and GII patients as regards the duration of first stage of labor but the second stage of labor was significantly longer in duration in GI than that in GII. This coincides with the results of Rizk et al2005.[3] who found that a short perineum prolongs the second stage of labor. On the other hand, The present result was not in accordance with that obtained by Deering et al. 2004[12] who found no statistically significant differences between women with perineal body ≤ 3.5 cm and women with perineal body > 3.5 cm as regards the duration of second stage of labor.

The present study had also shown a significantly higher frequency of perineal lacerations in GI women when compared

with GII women. This agrees with the results of Aytan et al.[13] In their study there was increased risk of perineal tears in the group of women with perineal lengths ≤ 3cm. They found that the perineal length was the only maternal factor associated with lacerations in a statistically significant manner in the whole group.

Comparison between women with perineal lacerations (PL) and those without in women who didn't had episiotomy had revealed that patients with perineal lacerations had significantly longer 2nd stage of labor and larger head circumferences of the newborn baby. This is in line with the findings of Aytan et al.[13],who noted that fetal head circumference is associated with severe perineal lacerations. Also, Rizk et al.[3] reported that prolonged 2nd stage of labor was associated with increased prevalence of perineal lacerations.

So when we spot a light on the deferent between the current study and anther one, we find for what extent the midwife' should have the back ground knowledge and the detected of surrounded characteristics of labor moments.

CONCLUSIONS

From the present study the find of the following conclusion:

Women with short perineal length are at increased risk of perineal lacerations during vaginal delivery. Other factors associated with increased prevalence of perineal lacerations are prolonged 2nd stage of labor and increased neonatal head circumference.

RECOMMENDATIONS

Based on the findings the following recommendation is suggested: precautions should be taken when delivering women with short perineal length as they are highly exposed to perineal lacerations.

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