Original Article

Frequency of Perineal Tear in Primigravida Delivered Without Episiotomy at a Tertiary Care Hospital

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Abstract

Objective: To determine the frequency of perineal tear in primigravida women delivered without episiotomy.

Methodology: This cross sectional study was conducted in the Department of Obstetrics and Gynecology of Nishtar Hospital Multan from 1st November 2019 to 10th April 2020. A total of 194 primigravida women, singleton pregnancy, gestational age at 37-42 weeks, vertex presentation, occiptoanterior position and vaginal birth (Spontaneous/Induced) were included. Women were evaluated after admission and basic demographics data like age, weight and BMI (kg/m^2) were recorded. Demographic characteristics of the patients along with frequency of Perineal tear after vaginal delivery were noted. A post-stratification chi-square test was applied, considering $p \leq 0.05$ as significant.

Results: The mean age was 26.391±4.22 years, mean gestational age 39.015±1.54 weeks, mean weight 70.933±12.99 Kg, mean height was 1.5460.092 meters, mean BMI 29.708±5.05 Kg/m2 and mean infant head size was 34.087±0.83 cm. The majority of the patients, 100 (51.5%), belonged to 18-25 years age group. Short perineal body was seen in 132 (68.0%) patients. Perineal Tear was seen in 46 (23.7%) patients.

Conclusion: High frequency of perineal tear in primigravida women delivered without episiotomy was noted in our study. Perineal tear was significantly associated with increasing size of fetal head.

Keywords: Primigravida, Vaginal delivery, Perineal tear.

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Introduction

Perineal tear is described as any damage to the genitalia during childbirth, occurring spontaneously or due to intentional surgical incision (episiotomy).[1] Anterior perineal tears are injuries to the labia, anterior vagina, urethra, or clitoris, and are usually linked with less morbidity.[2] Posterior perineal tears are injuries to the posterior vaginal wall, perineal muscles or anal sphincter.[3] Spontaneous tears are classified as 1st degree when only the perineal skin is involved; 2nd degree tears involve the perineal muscles and skin; 3rd degree tears involve the anal sphincter complex and 4th degree tears involve both the anal sphincter complex and the anal epithelium.[4]

Perineal trauma may occur due to spontaneous or assisted vaginal delivery while women undergoing 1st vaginal delivery are most vulnerable to perineal trauma.[5] The most commonly found risk factors of perineal trauma are large fetal size, mode of delivery and malpresentation or malposition of the fetus. The most frequently observed maternal risk factors include ethnicity (white women), older age, abnormal collagen synthesis or malnutrition.[6] Clinician's choices of intrapartum interventions might influence the severity and risk of perineal trauma. Perineal trauma is known to have an impact on a woman's physical, psychological, and social well-being, as well as breastfeeding, family life, and sexual relationships. [7] Bodner K et al evaluating primigravida cases delivered without episiotomy revealed 36.2% of cases to have perineal tears.[8] Samuelsson E al found the frequency of perineal tears to be as high as 93.4% among primigravida women delivered without episiotomy.[9]

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There is paucity of literature investigating the frequency of perineal tear in primigravida women delivered without episiotomy in our general population. Studies on international populations have showed variable results,[8,9] So there is a dire need to get local evidence on this topic in our general population. My study results will identify the need for future research on this subject to be conducted in this area for the better management of primigravida women delivered without episiotomy.

Methodology

This Cross Sectional Study was carried out in the Department of Obstetrics and Gynaecology of Nishtar Hospital Multan from 1st November 2017 to 10th April 2018. A sample size of 194 was calculated with a prevalence (p) of condition (Perineal tear) = 93.4%[9] by using the following formula: n = z2 * p * (1 - p) / e2 where z= 1.96 and e = 3.5% with 95% confidence level. The sampling technique was Non-probability consecutive sampling. Primigravida at age of 18-35 years with Singleton pregnancy on ultrasound at gestational Age of 37-42 weeks on ultrasound with vertex presentation & occiptoanterior position on ultrasound and Vaginal birth planned (Spontaneous/Induced) were included. Women with malpresentation and malposition on ultrasound, History of previous vaginal and anal surgery, converted to episiotomy (surgical incision made in the perineum area (between the vagina and anus), converted to caesarean section and patients with history of hypertension were excluded from the study.

Approval from the institutional ethical committee was taken (reference no.3843/NMU & H dated 03/03/2021). Written consent was acquired. Women were evaluated after admission and basic demographics like age, weight, and BMI (kg/m^2) were recorded. Women with spontaneous delivery (infants born on the onset of labor, spontaneously via the cervix and vagina, in the vertex position (the head of the foetus presenting)) were treated as per protocol. Women with no uterine contractions and cervical dilation <3 cm assessed by vaginal examination was given prostaglandin E 2 vaginal gel 1 gm and the same dose repeated at six hourly intervals for a maximum of three doses under the supervision of the consultant. After delivery, infant head size was measured by wrapping a flexible measuring tape around the broadest part of baby's forehead, just above the ears and at the midpoint of the back of the head and also noted. The frequency of genital tear after vaginal delivery was noted as per operational definition by the researcher herself and recorded on especially designed proforma.

Data analysis was performed using IBM-SPSS version 26.0. Mean±SD was presented for quantitative variables while frequency and percentage was computed for qualitative variables. Stratification was performed for age, gestational age, BMI and infant head size to determine the effect of these variables on the perineal tear. A post-stratification chi-square test was applied, considering p ≤0.05 as significant**.**

Results

The mean age was 26.391±4.22 years, the mean gestational age was 39.0151.54 weeks, the mean weight was 70.93312.99 Kg, mean height was 1.5460.092 meters, the mean BMI was 29.7085.05 Kg/m2 and the mean infant head size was 34.087±0.83 cm. Most patients belong to 18–25 years age group 100 (51.5%). A short perineal body was seen in 132 (68.0%) patients. Perineal Tear was seen in 46 (23.7%) patients, as shown in Table I.

Table I: Frequency and percentage of patients according to sort perineal body and Perineal Tear (N=194)

Characteristics	Mean ± SD	
Age (years)	26.391±4.2	
Gestational age (weeks)	39.015±1.54	
Weight (Kg)	70.933±12.99	
Height (m)	29.708±5.05	
BMI (Kg/m2)	34.087±0.83	
Infant Head Size (cm)	26.391±4.22	
	Yes/No	**N (%)**
Short Perineal Body	Yes	132 (68.0%)
	No	62 (32.0%)
Perineal Tear	Yes	46(23.7%)
	No	148 (76.3%)

Table II: Stratification of Perineal Tear with respect to different Characteristics

Characteristics		Perineal Tear		P Value
		Yes	NO	
Age Groups In Years	18-25	22(22%)	78(78%)	0.563
	26-35	24(25.5%)	70(74.5%)	
Gestational Age (weeks)	37-39	36(26.5%)	100(73.5%)	0.166
	40-42	10(17.2%)	48(82.8%)	
BMI (Kg/m^2)	≤ 25	12(23.5%)	39(76.5%)	0.972
	> 25	34(23.8%)	109(76.2%)	
Short Perineal body	Yes	33(25%)	99(75%)	0.538
	No	13(21%)	49(79%)	
Infant Head Size(cm)	<35	11(7.5%)	136(92.5%)	<0.001
	≥ 35	35(74.5%)	12(25.5%)	

Stratification of Perineal Tears with respect to age, gestational age, BMI, short perineal body and infant head size is shown in Table II. Large-infant head size

was associated with a significantly increased frequency of perineal tears (p<0.001).

Discussion

In this study, we found the rate of perineal tears to be 23.7%. A recent multicenter study revealed perineal tears to be involved 21% cases, which is close to what we noted.[10] Authors in the past have described even higher rates of perineal tears.[11] Bodner K et al. found 36.2% of the primigravida cases delivered without episiotomy to have perineal tears[8] Samuelsson E et al. found 93.4% of the primigravida cases delivered without episiotomy to have perineal tears.[9] A local study published by Jogezai et al.[10] from Quetta has also reported 31% perineal tears in primigravida, similar to our results.

Various risk factors have been identified regarding perineal tears by previous researchers, like gestational age, short perineal body and large-infant size,10,12,13 but we could only find large-infant head size to be significantly associated with perineal tear.

To increase the reliability of this research, we excluded women undergoing instrumental delivery. In our setting, we usually delivery children as per general guidelines regarding the last stage of delivery-like hand of the obstetrician needs to control the speed of the head crowning through the vaginal introitus, whereas the other hand supports the perineum. The women are then asked to stop the pushing, and when most of the head is out, the perineal ring is pushed under the newborn's chin.[14] Controversy exists between comparisons of "hands-on," "hands-off" or "hands-poised" methods, but some researchers have shown favorable outcomes adopting "hands-on" and "hands-poised" methods.[15-18] Some others also endorse the "hands-on" method to accompany clear benefits.[14] Recent data demonstrate no effects of "hands-on" or "hands-off" methods on 3rd and 4th degree tears.[19,20]

Recent "midwifery guidelines" also state that either method is appropriate.[21] Literature has shown that midwives prefer their own choice of approach depending upon a specific clinical scenario rather than a standardized technique.[22,23]

It is important to reveal the rates of perineal tears at different settings that will help obstetricians reflect on current practices aiming for better outcomes. It has revealed that rates of perineal tears are linked with clinical ascertainment[24] while levels of recognition may vary.[25,26] Recent data from Australia showed that 71% of the midwives and doctors had acquired training regarding the diagnosis of severe perineal tears, while only 16% of them were highly confident about the diagnosis.[23] As we know that obstetricians generally assess the integrity of the perineum in all women, so diagnostic bias regarding the perineal tear should be considered minimum.

Conclusion

High frequency of perineal tear in primigravida women delivered without episiotomy was noted in our study. Perineal tear was significantly associated with increasing size of fetal head.

Limitation: We were unable to evaluate some factors like perineal support and competency of the midwives/obstetricians linked with the perineal tears. One can also argue about the clinical relevance of low-grade perineal tears so future studies can be done in this regard.

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