

## Frequency and Severity of Perineal tears among women during vaginal delivery

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### Abstract

**Objective:** to arbitrate the frequency and severity of perineal tears among the patients of Vaginal delivery. **Study Design:** A Cross-sectional Study. **Place and Duration of study:** Department of Obstetrics and Gynecology Nishtar Hospital Multan and Allied Hospital, Faisalabad from 29 December 2016 to 28 June 2017. **Methodology:** the study was conducted after obtaining the approval of ethical committee for collecting data from patients. The patients aged 20-40 years were included in the study, both multipara and primipara. An examination was performed on the perineum, vulva, vagina, and cervix at the third stage of labor in order to discover any tears or injuries. All the informations were collected on per designed Performa. Collected data was entered and analyzed by using SPSS software. **Results:** the incidence of perineal tears was calculated to be 79.89%. The most commonly observed injury was the first-degree perineal tear. it accounted for 101(68.70%) cases. while the second-degree perineal tear was found to be 39(26.53%) cases. third and fourth degree perineal tear remained the least in observed frequency as in 2.72% and 2.04% of cases respectively. **Conclusion:** The observations of our study concluded that majority of patients delivered vaginally experienced perineal tear, among those first degree perineal tear was more prevalent.

**KEY WORDS:** Perineal tear, perineal trauma, severity of perineal tears.

### **Introduction**

One of the recurrently worn obstetric traditions is operative vaginal delivery. But one of the main complications it presents is the perineal injury which adversely affects the health and life of a woman<sup>1</sup>. According to a recent study conducted in the UK, its incidence has increased in the past few years. It is seen to occur in 85% of vaginal delivery and some extent of vaginal injury is experienced by such women<sup>2</sup>. Out of these, 60-70% women need suturing to be done. The traumatic tear can also occur in internal or external anal sphincter which may lead to fecal incontinence or fecal urgency respectively. Almost 2.8% of primigravida and 0.4% of multigravida experience third-degree tears<sup>3</sup>.

Multiple risk factors are found to be responsible for the occurrence and severity of perineal tears such as instrumental manipulation, good size baby, labor induction, episiotomy, use of analgesia etc<sup>4</sup>. it has been observed that limitation in the approach of episiotomy is better for the patient<sup>5</sup>.

Another study (retrospective study) was performed in the university teaching hospital of Yaoundé (Cameron). According to this study, the incidence of perineal tears was found to be 13.5%. First degree perineal tears were encountered in 76.5% whereas 22.1% patients experienced second-degree tears. While third-degree tears were observed in only 1.3%. There was no evidence of the fourth-degree perineal tear in any patient in the study<sup>6</sup>.

There is a difference in the of incidence of anal sphincter and perineal injury differs according to the countries as well as the delivery units. there is evidence of increasing incidence of OASIS over the past few decades<sup>7</sup>. A number of factors have been studied over time but they failed to explain the rising frequency of OASIS. These factors include increasing maternal age, larger infants and expanding the use of instrumental manipulation during delivery<sup>8</sup>.

The end result of pregnancy can be demonstrated by the management of childbirth in any country. This fact forms the basis of the belief that the presence of a skilled health care professional at the time of delivery is a vital foundation of safe motherhood from pregnancy till childbirth<sup>9</sup>. The study conducted here is going to demonstrate the rate of occurrence and severity of perineal tears during vaginal delivery. It also provides a guide to improve the obstetric proceedings by practicing pertinent precautions<sup>10</sup>.

### Methodology:

Cross-sectional descriptive study was conducted in Department of Obstetrics and Gynecology Nishtar Hospital Multan and Allied Hospital, Faisalabad from 29 December 2016 to 28 June 2017. The study was conducted after obtaining the acknowledgment of ethical committee for the purpose of collecting data from patients. The patients aged 20-40 years were included in the study, both multipara and primipara. Nonprobability consecutive sampling technique was applied to obtain the sample of the study. Those patients upon which episiotomy was performed or those undergoing instrumental vaginal delivery were precluded from the study.

The number of patients included in the study was 184. Only those patients were chosen who fulfilled the inclusion criteria. An elaborate history was obtained from each patient. the weight of the babies at birth was also recorded. As a regular protocol, an examination was performed on the perineum, vulva, vagina and cervix at the third stage of labor in order to discover any tears or injuries. The patients were then handled on the basis of the severity. The software SPSS version 11 for Windows was used to analyze the obtained data. For age, parity and BMI, mean  $\pm$  SD was estimated. For outcome variable (perineal tears and its severity), frequency and percentage were computed. The method of stratification was used to control the effect modifiers such as, parity, baby weight and body mass index (BMI). The Chi-square test was applied according to the sample size. P value of less than 0.05 was taken as significant.

### Results:

Among 184 cases, majority of the cases i.e. 72(39.13%) were in age group 26-30 years. Age group 20-25 years was next in a row i.e. 59(32.06%). 22.28% of cases were in age group 31-35 years and least number of cases were in age group 36-40 years i.e. 6.52%. Mean age of the study group was  $27.89 \pm 4.44$ .

Analysis of parity distribution showed that majority of the cases i.e. 113(61.41%) were primipara (P1). 49(26.63%) were P2, 19(10.32%) were P3 and 1.63% of cases were having their parity four or more than four. Mean parity of the patients were  $1.52 \pm 0.746$ .

Among 184 cases, majority of the cases i.e. 105(57.06%) were having BMI between 20 to 25 and 79(42.93%) of cases were having their BMI 26-30. Mean BMI was  $25.01 \pm 2.02$ . Majority of babies i.e. 110(59.78%) was having birth weight more than 3 kg and 74(40.21%) babies were having birth weight  $\leq 3$  kg.

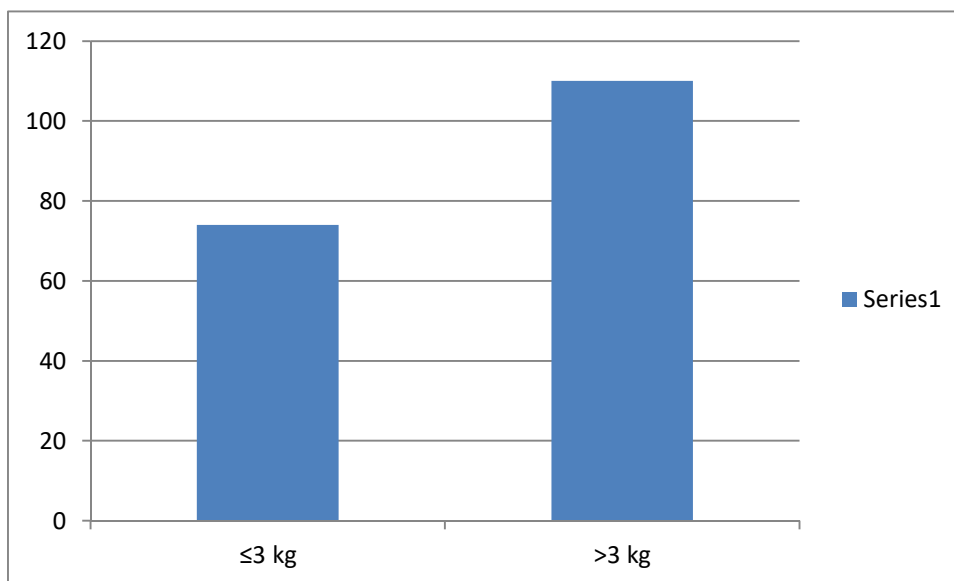
Out of 184 cases, perineal tears were observed in 147(79.89%) cases and in 37(20.10) there were no perineal tears. Frequency of perineal tears was 79.89% . Among 147 cases of perineal tears, first degree perineal tear was the most frequent finding observed. It was present in 101(68.70%) cases. Second degree perineal tear was next in a row i.e. it was observed in 39(26.53%) cases. Third and fourth degree perineal tears were observed in 2.72% and 2.04% of cases respectively.

**Table No. 1: Demographic Features (n=184)**

Age	Number of patients	Percentage
20-25	59	32.06
26-30	72	39.13
31-35	41	22.28
36-40	12	6.52
Mean age $27.89 \pm 4.44$		
Parity	Number of patients	Percentage
P1	113	61.41
P2	49	26.63
P3	19	10.32
$\geq P4$	3	1.63
Mean parity $1.52 \pm 0.746$		

BMI (Kg/m <sup>2</sup> )	Number of patients	Percentage
20-25	105	57.06
26-30	79	42.93
Mean BMI 25.01±2.02		

**Figure No. 1**  
**Birth weight of babies (n=184)**



Majority of babies i.e. 110(59.78%) was having birth weight more than 3 kg

**Table No. 2**  
**Frequency of the perineal Tears (n=184)**

Perineal tears	Number of patients	Percentage
Yes	147	79.89
No	37	20.10
Total	184	99.99

Frequency of perineal tears was 79.89%.

**Table No. 3**  
**Severity of the perineal Tears (n=147)**

Severity of perineal tears	Number of patients	Percentage
1 <sup>st</sup> degree	101	68.70
2 <sup>nd</sup> degree	39	26.53
3 <sup>rd</sup> degree	4	2.72
4 <sup>th</sup> degree	3	2.04
Total	147	99.99

First degree perineal tear was the most frequent finding observed in this study.

#### Discussion:

One of the matters of warning during childbirth is perineal injury. it not only concerns t health of the woman giving birth but also the also provides a challenge to the obstetrician and the caretakers of the patient. In order to prevent initial damage as a result of vaginal delivery, it has been observed in a study that large populations of British obstetricians choose the mode of Cesarean section for their patient. The adverse effects of perineal trauma encountered by the woman are a matter of concern and bring a negative brunt on the part of the patient. The momentary problems faced by the woman include primary postpartum hemorrhage, pain and a dire need to suture. It interferes with the process of breastfeeding and the daily routine of the mother. In the long run, the issues faced by the mother are chronic pain, urinary incontinence, and dyspareunia.

A study by Alison J. Macarthur et al <sup>11</sup>, suggested that Perineal trauma is found to be more common in woman who are primiparous, who had an instrumental vaginal delivery and the ones who were given epidural analgesia during the second stage of labor. Severe pain was experienced by the patients having perineal injury during the labor. The statistics showed that the incidence of pain among those having first or second-degree tear was 95% and 60%; while those having third and fourth-degree tear had the incidence of 100% and 91%. At the time of 6 weeks, it was observed that there was no statistical difference in the frequency of pain among different trauma groups.

Between the years of 2000 and 2009, a study was conducted by Thomas Schmitz et al<sup>12</sup> upon 19,442 patients for vaginal delivery. out of these 88 women were reported with severe perineal lacerations (0.5%). several independent risk factors were determined including "Instrumental delivery (aOR 4.17, 95% CI 2.51–6.90), nulliparity (aOR 2.58, 95% CI 1.55–4.29), persistent posterior orientation (aOR 2.24, 95% CI 1.02–4.94) and increased birth weight (aOR 1.28, 95% CI 1.03–1.60)". while mediolateral episiotomy was found to have shielding impact as aOR 0.38, 95% CI 0.23–0.63. while the highest risk of severe perineal laceration was found to be associated with instrumental delivery of neonates who were less than 4500g and were in constant posterior position as determined by CART model. on the other hand, the patients who delivered neonates that were larger than 3200g spontaneously after a mediolateral episiotomy was the patients with the lowest risk of as much as 0.1%.

A similar study was done by Yvonne L.Hauckab et al <sup>13</sup> showed similar results. the incidence of severe perineal trauma was found to be 3%, while 4.5% was for primipara and 1.7% was for multipara patient. An unusual set of risk factors was discovered by this study. They included "Asian or Indian ethnicity, shoulder dystocia and assisted delivery". In the primiparas, the protective factors included episiotomy, preterm birth, and

epidural analgesia. In multiparas woman episiotomy was associated with increased risk of perineal trauma. Other risk factors for primiparous women were occipito=posterior delivery and prolonged second stage of labor. For multiparous women, the additional factors were gestational diabetes and birth weight more than 4000g.

Numerous risk factors are responsible for perineal lacerations. As stated by Vasileios Pergialiotis et al <sup>14</sup>. In a meta analysis of 22 studies, severe perineal trauma in women was encountered due to "heavier infants (mean difference 192.88 g [95% CI, 139.80–245.96 g]), an episiotomy (OR 3.82 [95% CI, 1.96–7.42]), or an operative vaginal delivery (OR 5.10 [95% CI, 3.33–7.83])". Some other common factors involved in perineal trauma were labor induction, labor augmentation, and epidural anesthesia. The study also suggests future research on these determinants to find out their co-relation.

The frequency and severity of perineal tears are greatly influenced by the race and ethnicity of the woman. As elaborated by the study conducted by Linda M.Hopkins et al <sup>15</sup>, different ethnicities are at wide risk of developing perineal lacerations but it has little effect on vaginal or cervical lacerations. The study depicted that Filipino (OR = 1.92, 95% CI 1.64-2.25) and Chinese women (OR = 1.60, 95% CI 1.33-1.92) are at high risk for lacerations during a vaginal delivery. These lacerations comprise third and fourth-degree tears. While there is only slightly increased the risk for only Filipino and Asian women for the vaginal laceration. There is no difference among the incidence of cervical lacerations.

There are various techniques to reduce the morbidity in terms of perineal tears among woman having a vaginal delivery. As demonstrated by a study was done by Leila Barreto Scarabotto et al <sup>16</sup>, perineal injection of Hyaluronidase prevents the tears. Further research must be conducted in this regard to have a better outcome. Similarly, another study <sup>17</sup> showed that massaging the perineal area during the second stage of labor reduces the risk of perineal tears as well as decreased the requirement of episiotomy. Likewise, obesity can be assumed as a protective factor against perineal tears <sup>18,19,20</sup>.

#### **Conclusion:**

The observations of our study concluded that majority of patients delivered vaginally experienced perineal tear, among those first degree perineal tear was more prevalent.

#### **Recommendations:**

Risk factor assimilation, circumspect control of labor, and adequate perineal support is advised in order to lessen the likelihood of perineal trauma. Apart from the fact that perineal injury is destined to occur in almost all the settings of the vaginal deliveries, It must be noted that the frequency and severity can be reduced by the presence of professional and vigilant supervisor.

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