Original Article

Vaginal Deliveries and Frequency of Perineal Tears

Humaira Bashir, Shazia Rafiq, Asma Akhtar, Ayesha Khan Khakwani, Kanwal Raza and Saba Rafique

ABSTRACT

Objective: To determine the frequency, risk factors, and severity of perineal tears in women during vaginal delivery.

Study Design: Cross-sectional study.

Place and Duration of Study: This study was conducted at the Nishtar hospital, Multan in the labour room from January 2023 to October 2023.

Methods: The study commenced after receiving approval from the ethical committee to collect patient information. The study included 200 patients aged 20 to 40 years, both primipara and multipara. A complete history of patients was taken and the weight of babies at the time of birth was recorded. By following standard protocol detailed examination of the cervix, vagina, vulva, and perineum was done during 3rd stage of labor to diagnose any injury or tear.

Results: The mean age of the 200 study patients was 32.64 ± 6.89 years, and the mean BMI was 23.25 ± 2.02 kg/m². Most patients, specifically 94 (47.0%), had a parity of 1, while 21 patients (10.5%) had a parity of 4 or more. Additionally, 113 babies (56.5%) had a birth weight of ≤3 kg, whereas 87 babies (43.5%) had a birth weight of over 3 kg. Perineal tears were observed in 169 patients (84.5%), with the majority experiencing first-degree perineal tears.

Conclusion: The study highlights that perineal trauma during vaginal delivery is highly prevalent, with our research identifying a frequency of 84.5% for perineal tears. Among these, first-degree perineal tears were the most common. Perineal tears contribute significantly to maternal morbidity.

Key Words: Perineal Tears, Vaginal delivery, Severity of tear, Degree of injury.

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INTRODUCTION

Operative vaginal delivery, a commonly practiced obstetric tradition, is associated with the risk of perineal injury, which can significantly impact a woman's health and quality of life[1]. Literature has shown an increase in the incidence of perineal injuries in recent years. Incidence of perineal injuries was reported in about 85% of the literature, among them about 70% required suturing[2]. This traumatic injury to the perineal area can damage the sphincter internally and externally which can lead to some severe complications like decal urgency and incontinence[3].

However, even minor degree tears can lead to complications, such as an increased risk of pelvic organ prolapse and sexual dysfunction[4].

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Risk factors of perineal tear incidence and its severity include delivering large babies, instrumental manipulation, episiotomy, labor induction, and required analgesia[5]. Observations of many researchers indicate that a conservative approach for episiotomies is more beneficial for patients' point of view[6]. The incidence rate of perineal and anal sphincter injuries varies between countries and healthcare facilities and it was observed that this incidence is increasing day by day[7].

The literature identifies several risk factors associated with perineal tears. Independent risk factors for major tears include a prolonged second stage of labor, instrumental vaginal delivery (IVD), birth weight greater than 4 kg, occiput-posterior presentation, and Asian ethnicity[8]. The association between episiotomy and perineal tears is controversial. Some studies suggest that episiotomy has a protective effect against severe perineal tears[9].

The outcome of pregnancy is often influenced by the approach to childbirth management in different countries, highlighting the importance of having a skilled healthcare professional present during delivery to ensure safe motherhood from pregnancy through childbirth[10]. This study aims to examine the rate and severity of perineal tears during vaginal delivery and to

provide guidance on improving obstetric practices by implementing appropriate precautions.

METHODS

This cross-sectional study was conducted over a six-month period in the labor room of Nishtar Hospital, Multan, from January 2023 to October 2023. The study commenced after receiving approval from the ethical committee to collect patient's information. The study included 200 patients aged 20 to 40 years, both primipara and multipara after obtaining consent form all patients. Patients who had undergone vaginal delivery. Sample size was calculated by using openepi.com with 95% confidence interval, power of study and frequency of perineal tears 11.9% taken from study conducted by Ibrar et al[4].

Complete history of patients was taken and weight of babies at the time of birth was recorded. By following standard protocol detailed examination of cervix, vagina, vulva and perineum was done during 3rd stage of labor to diagnose any injury or tear. Management of patients was planned according to severity of injury. SPSS version 27.2 was used for data entry and recording of numerical (age and BMI) and categorical variables (Parity, perineal tear and severity) as per mean and SD required. P value less than or equal to 0.05 was taken as significant.

RESULTS

The mean age of the 200 study patients was 32.64 ± 6.89 years, and the mean BMI was 23.25 ± 2.02 kg/m². Most of the patients, specifically 94 (47.0%), had a parity of 1, while 21 patients (10.5%) had a parity of 4 or more. Additionally, 113 babies (56.5%) had a birth weight of ≤3 kg, whereas 87 babies (43.5%) had a birth weight of more than 3 kg. Perineal tears were observed in 169 patients (84.5%), with the majority experiencing first-degree perineal tears.

Table. No. 1: Demographic profile of mothers and distribution of baby weight at birth

Variable	N (%)	Mean ± S.D
Age (years)		32.64±6.89
BMI (kg/m^2)		23.25±2.02
Parity		
1	94 (47.0)	
2	71 (35.5)	
3	14 (7.0)	
≥ 4	21 (10.5)	
Total	200 (100.0)	
Baby weight at birth		
≤ 3 kg	113 (56.5)	
> 3 kg	87 (43.5)	
Total	200 (200.0)	

Table. No. 2: Perineal tears distribution

Perineal tears	N (%)
Yes	169 (84.5)
No	31 (15.5)
Total	200 (100.0)

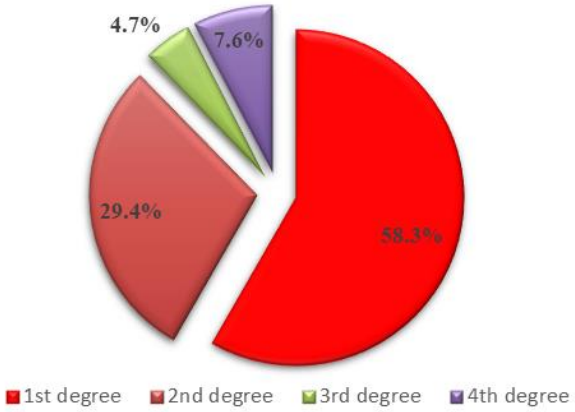

Figure. No. 1: Distribution of severity of perineal tears among perineal tears patients

DISCUSSION

Perineal injury during childbirth is a significant concern, affecting not only the woman's health who are giving birth but also posing a challenge to obstetricians and caregivers. To prevent initial damage resulting from vaginal delivery, many British obstetricians have been observed to opt for Cesarean sections as a mode of delivery for their patients[11].

In this study mean age of patients was patients was 32.64 ± 6.89 years, and the mean BMI was 23.25 ± 2.02 kg/m, but there was no association between the age of patients and the frequency of perineal tears. Another local study conducted by Parveen et al[12] reported mean age of patients was 27.89±4.44 years and the mean BMI was 25.01±2.02 kg/m2. A perineal tear during vaginal delivery was reported in 79.8% of patients. This perineal tear was an incident in 84.5% of the population.

In this study most common type of tear was 1st degree tear observed in found in 58.3% of patients. A study complied by Ali et al[13] reported 1st-degree tear as the most common type of tear accounting for 68.7% of patients who underwent spontaneous vaginal delivery. Second-degree tear occurred in 26.5% and 3rd degree in 2.7% of patients.

A retrospective study conducted by Faith et al[14] the in Cameroon found that the incidence of perineal tears was 13.5%. Among these cases, 76.5% involved first-degree tears, 22.1% were second-degree tears, and only 1.3% of patients experienced third-degree tears. Notably, no cases of 4th degree tears were observed in this study[14].

A study by Cakwira et al[15] reported that primiparous women are more prone to perineal injury, especially in those cases who were operated on with instrumented

delivery and administered epidural analgesia at the time of 2nd stage of labor. Patients with perineal injury during labor experienced severe pain. Study shows incidence of pain was 95% for those with first-degree tears, 60% for second-degree tears, and 100% for third-degree tears, while 91% of those with fourth-degree tears experienced pain. However, by six weeks postpartum, there was no statistically significant difference in pain severity and frequency among the different types of trauma groups.

A study by Thomas Schmitz et al[16] on 19,442 women found that 88 (0.5%) had severe perineal lacerations. Key risk factors included instrumental delivery, nulliparity (aOR 2.58), persistent posterior orientation (aOR 2.24), and increased birth weight (aOR 1.28). Mediolateral episiotomy reduced risk (aOR 0.38). The highest risk was with instrumental delivery of neonates <4500g in posterior position, while the lowest risk was with spontaneous delivery of neonates >3200g after mediolateral episiotomy (0.1%).

Yvonne et al[17] found a 3% incidence of severe perineal trauma, with 4.5% in primiparas and 1.7% in multiparas. Risk factors included assisted delivery and shoulder dystocia in the Indian and Asian populations. In primiparas, episiotomy, preterm birth, and epidural analgesia were protective, while occipital-posterior delivery and prolonged second stage were risks. In multiparas, episiotomy increased trauma risk, and additional factors included gestational diabetes and birth weight over 4000g.

According to a meta-analysis conducted by Vasileios et al[18] severe perineal traumas in women during childbirth are significantly associated with several factors. These include the birth of heavier infants, with a mean difference in birth weight of 192.88 grams; the use of episiotomy; and the occurrence of operative vaginal deliveries. Additionally, the study identifies labor induction, labor augmentation, and epidural anesthesia as common contributors to severe perineal trauma. The authors recommend that future research should further investigate the relationship between these factors and the incidence of perineal trauma to better understand and potentially mitigate this complication. The incidence and severity of tears in the perineal area at the time of vaginal delivery are also associated with ethnicity and race.

The frequency and severity of perineal tears during vaginal delivery are significantly influenced by race and ethnicity. A study was conducted on Chinese and Filipino women by Park et al[19] and reported that these two populations are at higher risk of perineal tears. However, this increased risk does not extend to vaginal or cervical lacerations, where the incidence is similar across different ethnic groups.

Various techniques can help reduce morbidity related to perineal tears during vaginal delivery. For instance, a study by Gimovsky et al[20] demonstrated that injecting Hyaluronidase into the perineal area can prevent such tears. Further research is needed to improve outcomes in this area. Additionally, another study showed that massaging the perineal area during the second stage of labor not only reduces the risk of perineal tears but also decreases the need for episiotomy. Interestingly, obesity may also serve as a protective factor against perineal tears.

CONCLUSION

The study highlights that perineal trauma during vaginal delivery is highly prevalent, with our research identifying a frequency of 84.5% for perineal tears. Among these, first-degree perineal tears were the most common. Perineal tears contribute significantly to maternal morbidity. To reduce the risk of such trauma, it is important to assimilate risk factors, manage labor carefully, and provide adequate perineal support. Although perineal injury is likely in almost all vaginal deliveries, the frequency and severity of these injuries can be mitigated by having a professional and vigilant supervisor present.

Author's Contribution:

Concept & Design or acquisition of analysis or interpretation of data:	Humaira Bashir, Shazia Rafiq
Drafting or Revising Critically:	Asma Akhtar, Ayesha Khan Khakwani, Kanwal Raza, Saba Rafique
Final Approval of version:	All the above authors
Agreement to accountable for all aspects of work:	All the above authors

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