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Prevalence and Pattern of Perineal Tear Following Vaginal Birth in Kano, Northern Nigeria, A 2 Year Study

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Authors' contributions

This work was carried out in collaboration among all authors. All authors read and approved the final manuscript.

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Original Research Article

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ABSTRACT

Introduction: Perineal trauma following vaginal birth is a common postnatal complication. As many as 85% of women suffer some form of perineal trauma, which has both short and long terms effects on women's physical, psychological and social wellbeing. It can also occasionally disrupt breast feeding, family life and sexual relationships.
Objectives: To assess the incidence and pattern of perineal tear following vaginal delivery in Aminu Kano Teaching Hospital, Kano, North Western Nigeria.
Methods: A retrospective review of the records of all parturients who delivered in the labour ward of Aminu Kano Teaching Hospital Kano, during the period of the review (1st January 2016 to 31st December 2017). Necessary information for the review such as age, parity, type of tear, birth weight, APGAR score, and blood loss were retrieved and recorded in a proforma. The data

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collected was analysed using SPSS (version 23) statistical software and the result was presented as frequencies and percentages using simple statistical tables.
Results: The incidence of perineal tear in AKTH was found to be 11.4%. First and second degree tears were common among multiparous women, while third and fourth degree tears were common among primiparous patients. There was a statistically significant association between parity and severity of perineal tear.
Conclusion: The incidence of perineal tear is high in the hospital, antenatal and intrapartum risk reduction will play a vital role in reducing the incidence and severity of this condition, thereby improving the associated postpartum morbidity.

Keywords: Vagina; birth; perineal; tear; Kano; Nigeria.

1. INTRODUCTION

Perineal tear following vaginal delivery can occur either spontaneously or as an extension from episiotomy. It could be multiple or single and anterior involving the labia, the vagina, urethra or clitoris and/or posterior affecting the vagina, anal sphincters and rectal mucosa [1,2].

Perineal trauma following vaginal birth is a common postnatal occurrence. As many as 85% of women suffer some form of perineal trauma after vaginal delivery with 60-70% requiring repair, about 0.6% have severe perineal tear which involve the anal sphincter and rectal mucosa, and up to one third of women following their first delivery may develop occult sphincter injury [1,2]. Perineal tear is also found to be generally more extensive following first delivery [2-5]. The incidence of perineal tear was found to be 9.1% in a tertiary hospital in South-South Nigeria [6], and 14.1% at a hospital in Kano, North-West Nigeria [7]. It has both short and long term effects on women's physical, psychological and social wellbeing; it has also been found to disrupt breast feeding, family life and sexual relationships [2,3].

According to RCOG guidelines, 2015, perineal tears are classified as first degree tear if there is injury to the perineal skin and /or vaginal mucosa, second degree in case of injury to the perineum involving perineal muscles but not involving the anal sphincter and third degree when the injury to the perineum involves the anal sphincter complex [8]. Fourth degree tear involves the anal sphincter complex and anorectal mucosa; if the tear involves the rectal mucosa with intact anal sphincter complex, it is by definition a rectal buttonhole tear [8].

The risk factors for perineal tear include primiparity, infibulation of the external genitalia, induction of labour, long or very short second stage of labour, persistent foetal occipitoposterior position, foetal macrosomia, assisted breech delivery, episiotomy (especially midline), shoulder dystocia and instrumental delivery [9,10]. Perineal tear that require repair have increased gradually as episiotomies decreased, it was noticed that where episiotomy is restricted, an increase in anterior vaginal trauma is seen [9,10]. Historically, it was believed that episiotomy reduced spontaneous perineal injury by controlling the direction and extent of tissue damage [11-16]. Short term complications of perineal tear include, haemorrhage, perineal pain and infection, while late complications include dyspareunia, psychosocial problems, morbid fear of subsequent delivery and rectovaginal fistulae [3].

The incidence of perineal trauma following vaginal delivery can be reduced by perineal assessment early in the antenatal period and involvement of senior obstetrician if a history of sphincter trauma or genital mutilation is identified [9,10]. Digital perineal massage makes no measurable difference to the average rate of perineal tear; however, it does reduce the severity of the tear in primigravidae.[12] Massaging may cause transient discomfort in the first few weeks postpartum. It also has the benefit of reducing the incidence of postpartum perineal pain, not related to episiotomy. The use of perineal stretching device, which stretches the vagina and perineal muscles in preparation for vaginal delivery also decreases the incidence of perineal tear and that of episiotomy in high episiotomy setting [9-12]. De-infibulation of female genital mutilation (FGM) is also recommended for women from countries where FGM is performed [9-12]. Intrapartum measures that decreases the risk of perineal tear include upright maternal position; this has been found to reduce the risk of episiotomy, assisted vaginal delivery and severe postpartum pain. Use of stool or chair in labour decreases the rate of

episiotomy but also increase the risk of 2nd degree tear. There is also decrease severity of perineal tear in hand-knees and left lateral positions. Pushing technique, in which parturients are encouraged to push actively in response to their own urge, and slowing the birth of the foetal head at the time of crowning also decreases the risk of perineal trauma [15,16].

1.1 Objectives

The objective of this study is to assess the incidence and pattern of perineal tear following vaginal delivery in Aminu Kano Teaching Hospital (AKTH), Kano, Nigeria.

2. METHODOLOGY

2.1 Study Area

The study was carried out in Aminu Kano teaching hospital, a tertiary healthcare institution in Kano state, North West Nigeria. The hospital receives clients not just from Kano state but also from nearby states such as Jigawa, Kaduna and Katsina. There is an average of 3,269 deliveries performed per annum, which include vaginal deliveries and all categories of caesarean sections.

2.2 Study Design

It was a retrospective review of the records of all parturients who delivered in the labour ward of Aminu Kano Teaching Hospital between 1st January 2016 to 31st December 2017. Data was collected through a review of the women's folders retrieved from the Health Records department of the hospital. A proforma was designed and information such as age, parity, episiotomy, perineal tear, type of perineal tear, birth weight, APGAR score, and blood loss were retrieved from the folders and recorded.

2.3 Data Analysis

The data collected was then transferred into a spread sheet on Microsoft excel and analysed using SPSS version 23.0 statistical software (IBM SPSS Statistics for Windows, Version 23.0. Armonk, NY: IBM Corp). Mean and standard deviations were calculated for the qualitative variables while percentages and frequencies were used for the quantitative variables. The result was presented as frequencies and percentages using simple statistical tables. Chi-square test was used to test for association between categorical variables, with the level of significance set at ≤0.05.

3. RESULTS

There was a total of 6354 deliveries during the period of the review, out of which 5488 were spontaneous vaginal deliveries, and 866 had caesarean sections. Out of the 5488 parturients who had spontaneous vaginal deliveries, 623 had various degrees of perineal tear, and 1232 had episiotomies. The episiotomy rate was therefore 22.5% and the incidence of perineal tear was found to be 11.4%.

Table 1. Sociodemographic Characteristics

Age	**Frequency**	**Percentage (%)**
< 20	7	1.1
20 – 29	332	53.3
30 – 39	266	42.7
40 – 49	18	2.9
Ethnicity	**Frequency**	**Percentage (%)**
Hausa	593	95.2
Igbo	10	1.6
Yoruba	8	1.3
Others	12	1.9
Education	**Frequency**	**Percentage (%)**
Primary	96	15.4
Secondary	403	64.7
Tertiary	124	19.9
Parity	**Frequency**	**Percentage (%)**
Primipara	53	8.5
Multiparas	452	72.6
Grandmultiparas	118	18.9
Total	**623**	**100**

Table 2. Relationship between birth weight and type of perineal tear

Birth weight	1^0 Tear	2^0 Tear	3^0 & 4^0 Tear	Total
< 4.0 kg	539	39	10	588
≥ 4.0kg	30	5	0	35
Total	569	44	10	623

1^0 : 1^{st} degree 2^0 : 2^{nd} degree 3^0 :3^{rd} degree 4^0 : 4^{th} degree

Table 3. Relationship between parity and type of perineal tear

Parity	1^0 Tear	2^0 Tear	3^0 & 4^0 Tear	Total
Primipara	38	7	8	53
Multipara	420	30	2	452
Grand multipara	111	7	0	118
Total	569	44	10	623

1^0 : 1^{st} degree 2^0 : 2^{nd} degree 3^0 :3^{rd} degree 4^0 : 4^{th} degree

Majority of the parturients are between the ages of 20 – 29 (53.3%) and most are multiparae (72.6%). The mean age was found to be 29.03 (Table 1).

Majority of the parturient who had perineal tear had 1^{st} degree tear (n=569, 91.3%) and only a few (n=10, 1.6%) had 3^{rd} and 4^{th} degree tears. The mean birth weight was found to be 3.2kg and most of the tears (n=588, 94.4%) occurred among those women who deliver babies of less than 4kg. A chi-square test of association showed there was no statistically significant association between foetal birth weight and type of perineal tear. X^2> 0.05 (0.18) df =2 (Table 2).

Although majority of the parturients who had perineal tear were multiparae (n=452,72.6%) and grand multiparae (n=118, 18.9%), the incidence of 3^{rd} and 4^{th} degree tear was more among primiparae (80%). A chi-square test of association showed a statistically significant association between parity and type of tear. X^2 <0.05 (0.000001) df=4 (Table 3)

4. DISCUSSION

The incidence rate of perineal tear from this study was found to be 11.4 % which is slightly higher than the findings of Charles et al in Calabar, South South Nigeria where an incidence of 9.1 % was found [6], it is also slightly lower than 12.35 % recorded in India [17]. This disparity may be explained by the fact that only parturients who had suturing were considered in South-South Nigeria, while the study in India included ruptured uterus. However, this study included all parturients who had perineal tear regardless of whether they had suturing or not. The incidence is lower than the findings of Ibrahim et al in the same centre 6 years prior to this study in which perineal tear rate of 14.1% and episiotomy rate of 41.4% was found. This indicates that both the episiotomy and incidence of perineal tear has decreased over the years in the hospital. This is in contrast with the findings of Carroli G & Belizan J, which showed that when episiotomy is restricted perineal tear increases [9]. The drop in the incidence of both episiotomy and perineal tear over the years is an indicator of improve obstetric care in the study centre, with an episiotomy rate close to the WHO recommendation of 10% [7].

The mean age of the parturient in this study was 29, this is similar to the findings of Brandie et al in which the mean age was 28 [3]. It is also similar to the findings of Charles et al, where perineal tear was higher among the age group 21 – 30 years [6]. The mean birth weight of the babies born during the review period was found to be 3.2kg which is also similar to the findings of 3.4kg by Brandie and Mackenzie et al [3]. Both the incidence and severity of perineal tear was found to be more among parturient with birth weight less than 4kg, this is similar to the findings of Charles et al, in South-South Nigeria in which perineal tear was more common among women who give birth to babies with birth weight between 3.0kg - 3.9kg [6]. It is also similar to the findings of Kaur et al in India [17].

Multiparous women were also found to be more affected with perineal tear than primiparous patients in this study; this may be as a result of previous perineal trauma sustained during previous pregnancies. This is similar to the findings of a hospital based study in North America, where it was found that the incidence of perineal tear is higher in those who had previous

episiotomy or perineal tears in their first deliveries compared to those with intact perineum [17]. In this study the incidence of 1st and 2nd degree perineal tears were commoner among multiparous women, while 3rd& 4th degree tears were commoner among primiparae. This is also similar to the findings of Kettle el al in which perineal tear was found to be more extensive following first vaginal delivery [3,5].

There was no statistically significant association between the neonatal birth weight and type of perineal tear (P>0.5) in this study, this is similar to the findings of Brandie et al [3] However there was a statistically significant association between parity and perineal tear. This is consistent with the findings of Kettle C and Brandie el al in which perineal tear was more extensive in primiparae [3,5].

5. CONCLUSION

The incidence of Perineal tear following vaginal delivery in this facility was found to be decreasing over the years, with concurrent reduction in episiotomy rate. However, more training and retraining of both midwives and doctors on antenatal and intrapartum perineal tear risk reduction will go a long way in further improving the situation.

DISCLAIMER

The products used for this research are commonly and predominantly use products in our area of research and country. There is absolutely no conflict of interest between the authors and producers of the products because we do not intend to use these products as an avenue for any litigation but for the advancement of knowledge. Also, the research was not funded by the producing company rather it was funded by personal efforts of the authors.

CONSENT

As per international standard or university standard, patients' written consent has been collected and preserved by the author(s).

ETHICAL APPROVAL

As per international standard or university standard written ethical approval has been collected and preserved by the author(s).

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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