

Episiotomy And Perineal Trauma Prevalence And Obstetric Risk Factors In Port Harcourt, Nigeria

Enyindah, C. E., Fiebai, P. O., Anya, S. E., Okpani, A. O. U.

Department of Obstetrics and Gynaecology University of Port Harcourt Teaching Hospital
Port Harcourt, Nigeria

Abstract

Background: Perineal trauma sustained during vaginal delivery may predispose to short and long-term complications such as postpartum haemorrhage and sexual dysfunction. Most published literature on perineal trauma and episiotomy come from developed countries and there is limited information from developing countries. The objective of this study was to determine the rate and risk factors for episiotomies and perineal trauma at the University of Port Harcourt Teaching Hospital (UPTH), Nigeria.

Methods: A retrospective review of vaginal deliveries at the UPTH between 1st January 1996 and 31st December 2000.

Results: The episiotomy rate in 4720 vaginal deliveries during the period of study was 39.1% in all parturients, while in primigravidae, it was 77.1%. Rates for first and second degree perineal tears in all women were 10.6 and 25% respectively. The incidence of episiotomy decreased with increasing parity while the incidence of perineal tears slightly increased with parity. Nulliparity, vaginal breech deliveries and instrumental vaginal deliveries were identified as risk factors for episiotomy.

Conclusion: Episiotomy rate at the UPTH is high but the procedure appears to have prevented the occurrence of third degree and complete perineal tears.

Key words

Episiotomy, perineal tears, obstetric factors, Port Harcourt, Nigeria

Paper accepted for publication 14th February 2007

INTRODUCTION

Perineal trauma during vaginal delivery is very common occurring in about 40% of primigravidae and 20% of multiparous women.¹ Severe perineal trauma during vaginal delivery is associated with short- and long-term complications such as haemorrhage, perineal pain, dyspareunia, incontinence of flatus and faeces, and uterovaginal prolapse. Prevention of perineal damage is important during vaginal delivery, the objective being to

reduce severe trauma and prevent morbidity and mortality.²

Episiotomy is the surgical enlargement of the vaginal orifice by an incision of the perineum during the last part of the second stage of labour to facilitate vaginal delivery. Since it was first described in the 16th century³, it has become one of the most frequently performed obstetric procedures worldwide.⁴ Indications for episiotomy include the prevention of maternal perineal tears, prevention of fetal intracranial injury, shortening of the second stage of labour, operative vaginal delivery and prevention of subsequent symptomatic pelvic relaxation.

The routine use of episiotomy in women attempting vaginal delivery results in high episiotomy rates where this is practiced. Current evidence however supports the restrictive use of episiotomy over routine use because the former is associated with less posterior perineal trauma, less need for suturing, and fewer complications associated with healing.^{4,9} Despite the evidence supporting restrictive use of episiotomy, there is currently no consensus as to what constitutes an appropriate episiotomy rate.⁴

Most published reports on perineal trauma and episiotomy come from developed countries with relatively sparse data from the developing world. There is wide variation in reported episiotomy rates between countries, within countries and within health provider units indicating that there is no uniform policy for episiotomy. There is currently insufficient evidence-based data to recommend the use of episiotomy, especially routine use of episiotomy, and clinical judgement is thought to remain the best guide for this procedure.⁵

We sought to determine the prevalence rate and obstetric risk factors for episiotomy and perineal trauma in vaginal deliveries at the UPTH. This would also

provide baseline data which may assist in auditing obstetric practices in our centre, and facilitate further research.

METHODS

This was a retrospective review of 4,720 vaginal deliveries at the maternity unit of the UPTH during the five year period from January 1, 1996 to December 31, 2000. All patients who had an episiotomy were identified from the delivery register from which relevant data were collected and entered into a spreadsheet using SPSS 11.0 for Windows computer software. Case notes of individual patients were used to obtain information when the entries in the delivery register were incomplete. Information extracted included maternal parity, gestational age at delivery, type of vaginal delivery, birth weight of the newborn and Apgar score at one minute. Perineal trauma was classified as episiotomy, first degree tear, second degree tear and third degree tear as described previously.¹

Our departmental policy at the time of this study was one of selective episiotomy. Regardless of parity, episiotomy was recommended only when indicated. Episiotomy was usually given by the accoucher who most times was a midwife attending uncomplicated vaginal delivery. Resident doctors and consultants performed operative vaginal delivery and took complicated deliveries. The medio-lateral episiotomy was routinely used, and all episiotomy repairs were carried out by doctors.

Associations between obstetric factors and perineal trauma were assessed using appropriate statistical methods. The chi-square test was used to evaluate differences between categorical variables and odds ratios were calculated with 95 percent confidence intervals. P values less than 0.05 were considered statistically significant.

RESULTS

Of the 4,720 vaginal deliveries during the study period, 1846 (39.1%) parturients had episiotomies. Five hundred (10.6%) of these parturients had first degree perineal tears while in 118 (2.5%) it was second degree. Most of the mothers 2926 (61.7%) were Para 1 - 4; 534 (11.3%) were grandmultiparous and 1260 (26.7%) were nulliparous. Most 2945 (62.4%) deliveries were at term, 1397 (29.6%) were preterm and 143 (3.0%) were post term. The gestational age was uncertain in 235 (5.0%) cases. With regards to birth weight, 458 (9.7%) babies were of low birth weight, 3908 (82.8%) were normal weight and 354 (7.5%) were macrosomic. There were

few instrumental vaginal deliveries 76 (1.6%) and assisted vaginal breech deliveries 63 (1.3%) while most were spontaneous vertex deliveries 4581 (97.1%). Eight hundred and fifty (18.0%) babies had birth asphyxia and 158 (3.3%) were stillborn.

Table I. Selected demographic characteristics of parturients at the UPTH (n = 4720)

Characteristics	Frequency	Percentage
<u>Parity</u>		
Para 0	1260	26.7
Para 1 - 4	2926	61.7
Para 5 & above	534	11.3
<u>Gestational age at delivery (Weeks)</u>		
(36) and below	1397	29.6
Term (37-41)	2945	62.4
Post term (42 and above)	143	3.0
Uncertain	235	5.0
<u>Perineum</u>		
Intact perineum	2256	47.8
Episiotomy	1846	39.1
First degree tears	500	10.6
Second degree tears	118	2.5
<u>Birth weight (kilograms)</u>		
≤ 2.49	458	9.7
2.50 - 3.99	3908	82.8
≥ 4.00	354	7.5
<u>Mode of Delivery</u>		
Spontaneous vaginal (vertex)	4581	97.1
Instrumental vaginal	76	1.6
Assisted vaginal breech	63	1.3
<u>APGAR Score</u>		
0	158	3.3
1 - 6	850	18.0
≥ 7	3712	78.7

Risk factors for episiotomy and perineal trauma (Table II) were as follows:

Parity

Episiotomy rates were highest among primigravidae 972 (77.1%) and least in grandmultiparous women 52 (9.7%). There was a significant decline in episiotomy rate with increasing parity ($p = 0.00006$).

Gestational age

Women who delivered post-term were more likely to be given episiotomy than those who delivered at term ($p = 0.00$). There was no significant difference in the risk of having episiotomy between preterm and term deliveries ($p = 0.1$) or between preterm and post term deliveries ($p = 0.1$). In addition, the risk of sustaining a second degree perineal tear was significantly higher with post term deliveries compared to term and preterm deliveries ($p < 0.05$; RR = 10.5; 95% CI = 6.9 - 16.0).

Type of Vaginal Delivery

Instrumental vaginal delivery was more likely to be associated with episiotomy compared to spontaneous vertex and assisted breech deliveries ($p = 0.01$).

Birth Weight

There was no significant relationship between birth weight and episiotomy rate ($p = 0.19$).

Apgar Score

Twenty two per cent of the subjects who had stillbirths had episiotomies while 38.2% of parturients who had asphyxiated babies and 40.1% of those that had non-asphyxiated babies were given episiotomies. Deliveries associated with live births were more likely to have episiotomies compared to those with stillbirths (RR = 2.30; 95% CI = 1.70–3.10). In contrast, first degree perineal tears were significantly higher amongst stillbirth deliveries (20.9%) than live births (asphyxiated babies, 11.5%; non-asphyxiated babies 9.9%). [RR = 2.04; 95% CI = 1.49–2.80.]

Table II. Risk factors for episiotomy and perineal trauma at the UPTH

Selected characteristics	No. of subjects (n)	No trauma	Episiotomy	First degree perineal tear	Second degree perineal tear	No. (%)	
Parity[†]							
Para 0	1260	254 (20.2)	972 (77.1)	14 (1.1)	20 (1.6)		
Para 1 – 4	2926	1601 (54.7)	822 (28.1)	421 (14.4)	82 (2.8)		
Para 5 & above	534	401 (75.1)	52 (9.7)	65 (12.2)	16 (2.9)		
Gestational age at delivery (weeks)[‡]							
Preterm (Below 37)	1397	729 (52.1)	521 (37.3)	126 (9.0)	21 (1.5)		
Term (37–41)	2945	1372 (46.6)	1183 (40.2)	335 (11.4)	55 (1.9)		
Post term (42 and above)	143	61 (42.7)	41 (28.7)	13 (9.1)	28 (19.6)		
Uncertain	235	94 (40)	101 (43.0)	26 (11.1)	14 (5.9)		
Birth weight (kilograms)^{§*}							
≤ 2.49	458	276 (60.3)	164 (35.8)	11 (2.4)	7 (1.5)		
2.50 – 3.99	3908	1840 (47.1)	1551 (39.7)	415 (10.6)	102 (2.6)		
≥ 4.00	354	140 (39.5)	131 (37.0)	74 (20.9)	9 (2.5)		
Mode of Delivery^{¶¶}							
Spontaneous vaginal (vertex)	4581	2234 (48.8)	1737 (37.9)	493 (10.8)	117 (2.5)		
Instrumental vaginal	76	5 (6.6)	67 (88.2)	3 (3.9)	1 (1.3)		
Assisted vaginal breech	63	17 (2.7)	42 (66.7)	4 (6.3)	0 (0)		
APGAR Score							
0	158	87 (55.1)	34 (21.5)	33 (20.9)	4 (2.5)		
1 – 6	850	399 (46.9)	325 (38.2)	98 (11.5)	28 (3.3)		
≥ 7	3712	1770 (47.7)	1487 (40.1)	369 (9.9)	86 (2.3)		

* Mantel-Haensel Odds Ratio = 9.79 (8.90 < 11.93). $p = 0.00$

† Term vs. Post term ($p = 0.00$)

‡ $p = 0.19$

§ $p = 0.01$

Discussion

A large proportion 2464 (52.2%) of parturients in this study suffered some form of perineal trauma. High perineal trauma rates were likewise reported from Lagos (73.7%)¹⁰ and Benin (64.1%)¹¹ also in Nigeria. Most of these Nigerian studies on perineal trauma associated with vaginal delivery lay emphasis on episiotomy and its prevention. Perineal tears contribute to perineal trauma and its sequelae in parturients and also need to be evaluated.

A high episiotomy rate (39.1%) noted in this study is comparable to 35.6% reported from Zaria, Nigeria.¹² Higher episiotomy rates were reported from the earlier quoted Lagos (54.9%) and Benin (46.6%) studies, and in another study from Zaria (49%).¹³ The variation in episiotomy rates in Nigeria is similar to what obtains in most other parts of the world.⁴ Episiotomy was more frequently performed in primiparae (77.1%) in this study and others from Nigeria with rates ranging from 87.4–90.4%.^{10–12} Reports from other developing countries also revealed episiotomy rates higher than 90% (mean, 93%; range, 91–100%) among nulliparae.¹⁴ Similarly high episiotomy rates are prevalent in developed countries though there appears to be a declining trend in episiotomy in those countries.

The perineal tear rate is similar to that reported from rural Zimbabwe and intermediate between figures reported from Ibadan and Benin City both in Nigeria.^{7,10} Second-degree perineal tears were however, relatively uncommon. This may be attributed to the high episiotomy rates and is supported by the high rate of second degree tears associated with an unexpectedly low episiotomy rate following post-term deliveries. There was no third or fourth degree tear in this study and in the reports from Ibadan and Benin City studies. This may be due to the tradition in Nigeria of performing medio-lateral episiotomies which apparently have a role in preventing third and fourth degree perineal tears compared to midline episiotomies.¹³

High episiotomy rates in nulliparous women may suggest that the procedure was undertaken routinely in this group but selectively in parous women. Indeed a straw poll of ten midwives from six developing countries including Nigeria revealed that episiotomy is carried out routinely in primigravidas to prevent third degree perineal tears.¹⁵ Some of the midwives reported that some episiotomies were performed to allow midwifery and medical students the opportunity to practise the procedure. Rigidity of the perineum of nulliparous

women is reported to be the most frequent indication for episiotomy in them. Systematic reviews have however shown that episiotomy rates of 10% and below can be safely achieved in in nulliparous women, and routine episiotomy is not advisable.^{5,6,14}

Pre-term and post-term deliveries were not significant risk factors for episiotomy in our study. Episiotomy has been advocated in preterm deliveries to reduce pressure on the fetal head during vaginal delivery. Similarly, a higher rate of episiotomy would be expected in post-term deliveries due to the larger fetal size in those situations. In this study the higher proportion of second degree perineal tears in post-term compared to term and pre-term births suggests that episiotomy was more indicated in the post-term group.

Birth weight had no influence on the episiotomy rate in this study. This is similar to the report of Bansal et al.¹² Live births were more likely to be associated with episiotomy rate compared to stillbirths. Delivery of stillbirths is usually not hurried and often there is overriding of their skull bones with a reduced presenting diameter. Most units try to avoid episiotomies in this situation as there is a high risk

of wound breakdown from infection especially in macerated still births. This may have contributed to the lower rate of episiotomy among women with still births.

Vaginal breech and instrumental deliveries in our study subjects were high risk factors for performing an episiotomy in line with a tradition of routine episiotomy during assisted vaginal deliveries. There were a few perineal tears associated with ventouse deliveries which do not mandatorily require episiotomy and some assisted breech deliveries were also complicated by perineal tears. A more detailed review would be necessary to determine factors responsible for perineal tears in these deliveries.

Nulliparity, prolonged pregnancy and assisted breech deliveries appear to be risk factors for episiotomy at the UPTH. A well designed prospective study is needed to properly evaluate episiotomy rates in our hospital, as several other factors may influence the practice of episiotomy. An effective policy aimed at reducing the high episiotomy rates seen in this study is desirable at our hospital and other centres where high rates have been recorded.

References

1. Steer PJ. Labor: an overview. In: James DK, Steer PJ, Weiner CP, Gonik B (Eds). High Risk Pregnancy, Management Options, 2nd Edition. WB Saunders, London 2001: 1071-1078.
2. Stepp KJ, Siddiqui NY, Emery SP, Barber MD. Textbook recommendations for preventing and treating perineal injury at vaginal delivery. *Obstet Gynecol.* 2006;107(2 Pt 1):361-6.
3. Ould FA. A treatise of Midwifery. London: J. Buckland 1741; 145-6.
4. Graham ID, Carroli G, Davies C, Medves JM. Episiotomy Rates Around the World: An Update. *Birth* 2005; 32(3):219-23.
5. Hartmann K, Viswanathan M, Palmieri R, Gartlehner G, Thorp J, Lohr KN. Outcomes of routine episiotomy: a systematic review. *JAMA* 2005;293:21418.
6. Carroli G, Belizan J. Episiotomy for vaginal birth (Cochrane Review). In: The Cochrane Library, Issue 1, 2006. Chichester, UK: John Wiley & Sons, Ltd.
7. Thacker B, Banta HD. Benefits and Risks of Episiotomy: An Interpretative Review of the English Literature, 1860-1980. *Obstet Gynaecol Surv* 1983; 38: 322-8.
8. Royal College of Obstetricians and Gynaecologists (RCOG) Guidelines. No. 23: Methods and Materials used in Perineal Repair Jan 2000: 1-2.
9. World Health Organization. Managing Complications in Pregnancy and Childbirth. Section 3 - Procedures. 2000. Access at: http://www.who.int/reproductive-health/impac/procedures/episiotomy_P71_P75.html
10. Ola ER, Bello O, Abudu OO, Anorlu RI. Episiotomies in Nigeria--should their use be restricted? *Niger Postgrad Med J.* 2002;9(1):13-6.
11. Otoide VO, Ogbonmwan SM, Okonofua FE. Episiotomy in Nigeria. *Int J Gynaecol Obstet* 2000, 68(1):13-7.
12. Sule ST, Shiitu SO. Puerperal complications of episiotomies at Ahmadu Bello University Teaching Hospital, Zaria, Nigeria. *East Afr Med J.* 2003;80(7):351-6.
13. Onwuhafua PI. Childbirth in Germany and Nigeria compared. *Niger J med.* 2006; 15(4):387-92.
14. Kropp N, Hartwell T, Althabe F. Episiotomy rates from eleven developing countries. *Int J Gynaecol Obstet.* 2005;91(2):157-9.
15. Maduma-Butshe A, Dyall A, Garner P. Routine episiotomy in developing countries. Time to change a harmful practice. *Brit Med J* 1998; 316: 1179-80.