
CURRENT TRENDS IN THE UTILITY OF EPISIOTOMY IN A UNIVERSITY HOSPITAL, BENIN CITY, NIGERIA

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ABSTRACT

BACKGROUND: *Episiotomies have been performed for several years for various indications. Routine use of episiotomy has gone into disfavor with many obstetricians and midwives in Europe and North America but many studies from Latin America, Asia and Africa continue to document prevalence of 50% or higher.*

OBJECTIVE: *This study sought to examine the current trend in the utilization of episiotomy in our hospital amidst an observation of increasing reports of episiotomy complications.*

METHODS: *The case records of women who delivered vaginally in the University of Benin Teaching Hospital, Benin City from January 2010 to December 2014 were retrospectively studied. Sociodemographic and clinical information were retrieved and analyzed.*

Results: *There were 5,398 women studied, among which 1,975 (36.6%) had episiotomy. Episiotomy was more likely in women younger than 30 years (60%), nulliparas (80.5%) and term pregnancies (94.2%). Midwives administered 82.0% of the episiotomies while consultants were involved in only 1.1%. Spontaneous vaginal delivery was 15.1% less likely to involve episiotomy than forceps, vacuum and breech deliveries together (35.6 vs 50.7%, RR 0.722 95%CI 0.608-0.856; P < 0.001). The 6-week appointment was kept by 40.1% (792) of the patients with 24.1% (191/792) reporting complications. Extension to the perineum*

occurred in 11.5% while episiotomy breakdown occurred in 8.4% of them.

Conclusion: *Episiotomy remains widely utilized in our facility especially amongst young and nulliparous women with a considerable complication rate. A deliberate policy of selective episiotomy will probably improve the overall utility of the procedure.*

INTRODUCTION

Episiotomy is one of the commonest operations performed on women. Over the years, due to the dynamic nature of obstetric practice, the decision to or not perform an episiotomy has been influenced by various factors. The earliest practitioners, including Sir Fielding Ould recommended it solely for the tight perineum especially in cases where labour seemed prolonged¹. It was later introduced into the United States of America in the mid-19th century and recommended for all nulliparous women to avoid perineal trauma². Beyond that era, the application of episiotomy has been swayed toward the prevailing regional practice, the cadre of health provider as well as the experience of individual practitioner. The prevalence of episiotomy varies widely worldwide with figures as low as 1% reported in Sweden and 80% in Argentina³. Otoide et al⁴ reported an incidence of 46.6% in the University of Benin Teaching Hospital (UBTH).

Considering that most deliveries are attended by nurses and/or midwives, they are also expected to perform more episiotomies than doctors working in the setting of labour and delivery. In many instances, episiotomies are not promoted by midwives except in situations where they anticipate risk of injury to maternal tissue or the fetus especially with regards to primigravidae⁵. On the other hand, doctors usually conduct deliveries

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necessitating more manipulations such as vacuum, forceps and assisted breech deliveries, and in many of these cases episiotomy is often utilized⁴.

Other lower cadre health workers like community health extension workers (CHEW), community health officers (CHO) and auxiliary nurses and midwives who may not have the proficiency for managing episiotomy are likely to allow more spontaneous distension of the perineum by the fetal head. The corollary is that the episiotomy rate is likely to be lower but this practice is also thought to allow ragged tears should there be any significant risk for perineal injury. Some observers have thus documented the role of provider experience on the utilization of episiotomy, suggesting higher rates with increasing experience^{6,7}. It will appear to be the case that established practice is often a reflection of experiential depth, so that clinicians with a wealth of experience are more likely to sustain the practice of routine episiotomy even in the face of current evidence suggesting otherwise.

In the last few decades, opinion on the use of episiotomy has shifted between selective and routine use. What remains clear however is the continued presence of some strict criteria for episiotomy such as previous extensive repair of vaginal or perineal lacerations and previous 3rd degree perineal tear. Amidst this debate, some common ground has been gained by the practitioners with opinions coordinated by bodies like the World Health Organisation (WHO), International Confederation of Midwives (ICM) and International Federation of Obstetricians and Gynaecologists (FIGO) who have recommended target rates for episiotomy administration. In this regard, the WHO recommends 10% prevalence while promoting restrictive over routine episiotomy⁸.

With respect to the impact of episiotomy on maternal outcome it is generally accepted that the use of mediolateral or midline episiotomy does not decrease the risk of anal sphincter

damage, and a midline episiotomy almost surely increases this risk. Again, episiotomies are thought to increase the frequency and severity of perineal damage compared to what would have occurred spontaneously⁹⁻¹¹. However, an episiotomy is believed to reduce the risk of anterior tears, doing so at the expense of the much greater morbidity of posterior perineal injury.

In UBTH empirical evidence suggests that the use of episiotomy is high among nulliparous women and those attempting their first vaginal delivery after one previous Caesarean section (CS). There is a tendency towards selective use of episiotomy in other categories of parturient women. It is believed that promoting a more selective approach of episiotomy administration will further drive down the current prevalence of episiotomy in our hospital, in an attempt to meet the WHO recommendation. Therefore, this study aims to document the current trend in the application of episiotomy during vaginal delivery at the UBTH, the findings of which are expected to direct attention to the clinical utility of this age-long procedure.

METHODOLOGY

We conducted a retrospective study in the Department of Obstetrics and Gynaecology of University of Benin Teaching Hospital (UBTH), Benin City, Nigeria from January 2010 to December 2014 with Institutional Research and Ethics Committee approval. UBTH is a major referral centre in Edo State which attracts patients from neighboring states of Kogi, Delta and Ondo. The delivery rate in the hospital in the last five years has been around 2,700 per year, which gives an average monthly delivery rate of 225. The labour ward has 10 beds, including 7 delivery couches. The attendance rate at the six weeks postnatal clinic has been observed to be between 40 and 70%. The hospital has a total antenatal and postnatal bed capacity of 82 spaces, and there are 2 operating theatres attached to the labor ward.

In UBTH, mediolateral episiotomy administered on the right side of the posterior

perineum is preferred. Prompt repair of the episiotomy, following local anaesthetic infiltration of perineal skin, is carried out by the junior obstetric staff on duty, except in very rare extensive cases requiring a senior registrar or consultant input. The choice of suture is usually Chromic Catgut No 0 and technique applied is continuous interlocking in the posterior vaginal wall, simple interrupted for the perineal muscle layer and subcuticular perineal skin closure. Broad spectrum antibiotics and analgesics are frequently prescribed following repair of episiotomy or perineal injury.

All vaginal deliveries taken during the study period were included; the women were managed based on our established labour ward protocol¹². Only cases with complete information up to six weeks postnatal appointment were analyzed for episiotomy complications. The case notes, birth registers and ward records were accessed to retrieve information on the patients. Data collected included maternal age, parity, gestational age,

mode of delivery (spontaneous vertex, assisted vaginal breech, vacuum, forceps), designation of the accoucheur, complications following administration and repair of episiotomy and the birth weight of the babies that were delivered. The data was subjected to statistical analysis with a personal computer using SPSS version 20.0 (SPSS IBM Corp, Armonk, NY) and GraphPad InStat 3 (GraphPad Software Inc., San Diego, CA). Univariate analysis was conducted using Chi-square test or Fisher's Exact Test as appropriate. Cross tabulation was conducted to determine associations, and results were presented as proportions and simple percentages displayed in tables and charts. Statistical significance was assumed at P value < 0.05.

RESULTS

A total of 5,398 women had vaginal birth during the 5-year study period. Episiotomy was performed for 1,975, giving an incidence of 36.6% (1,975/5,398).

TABLE 1: DEMOGRAPHIC AND CLINICAL PARAMETERS AT DELIVERY

Parameter	Frequency (n=1975)	Percentage (%)
Age (year)		
=19	31	1.6
20-29	1131	57.3
30-39	793	40.1
=40	20	1.0
Parity		
0	1589	80.5
1	295	14.9
=2	91	4.6
Gestational age (week)		
<34	84	4.3
34-36	29	1.5
=37	1862	94.2
Birth weight (Kg)		
<2.5	174	8.8
2.5-3.9	1721	87.1
=4.0	80	4.1

About 60% of women who had episiotomy were younger than 30 years. Nulliparas accounted for the majority (80.5%) of women given episiotomy. The use of episiotomy was rare amongst women who were para 4 and above. Term pregnancies accounted for the majority (94.2%) of patients who required episiotomy at delivery. Pregnancies with normal birth weights were associated with the majority (87.1%) of episiotomy in this group

of women. (Table 1)
The majority (82.0%) of episiotomy in our series were administered by midwives who often take most of the deliveries in our hospital. Consultants were involved in only 1.1% of the cases while junior residents administered episiotomy in 9.1%, and the senior residents gave the episiotomy for 4.5% of the women. (Fig 1)

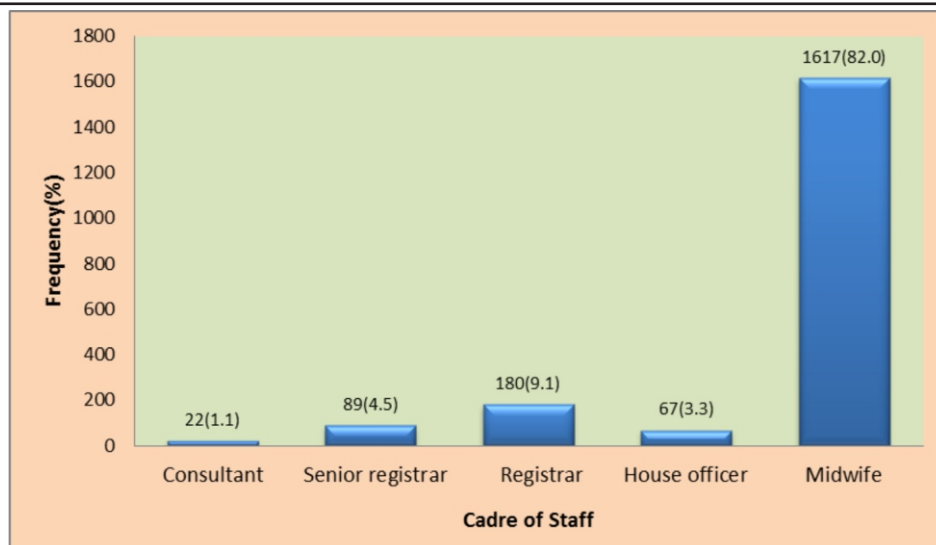


FIG 1: BAR CHART SHOWING CADRE OF STAFF WHO ADMINISTERED EPISIOTOMY

Among women who had spontaneous vaginal delivery, 35.7% had episiotomy whereas the majority of assisted vaginal deliveries were assisted with episiotomy. Forceps delivery had the highest rate of episiotomy utilization of 62.9%, followed by assisted vaginal breech delivery with 48.6% of women requiring

episiotomy, and vacuum deliveries had a frequency of 41.9% episiotomy utilization. Forceps delivery was associated with 27.2% more risk of episiotomy use than spontaneous vertex delivery (62.9% vs 35.7, Chi square 41.748, df=3; P<0.001). (Table 2)

TABLE 2: EPISIOTOMY UTILIZATION FOR DIFFERENT FORMS OF DELIVERIES

Form of delivery	Episiotomy Frequency (%)	No episiotomy Frequency (%)	P value
Spontaneous delivery (n=5039)	1797 (35.7)	3242 (64.3)	0.001
Assisted breech delivery (n=179)	87 (48.6)	92 (51.4)	
Forceps delivery (n=94)	59 (62.9)	35 (37.1)	
Vacuum delivery (n=86)	36 (41.9)	50 (58.1)	

Mediolateral episiotomy was uniformly applied in all the women, as this is the type of episiotomy that is commonly done in our hospital.

TABLE 3: COMPLICATIONS OF EPISIOTOMY

Type of complication	Number of women affected	Percentage (%)
Extension to perineum or anorectum	22	11.5
Difficulty with walking	24	12.6
Infected episiotomy	36	18.8
Break down of episiotomy	16	8.4
Dyspareunia	93	48.7

Information up to 6 weeks postpartum was available for 792 of the women making up 40.1% follow up rate, out of which 24.1% (191/792) reported varying categories of episiotomy complications. Dyspareunia was the most documented complication accounting for 48.7% while episiotomy breakdown occurred in 8.4%. Extension to the perineum noted at the time of repair was recorded in 11.5% of these cases. (Table 3)

The women reporting above complications at the 6-week postnatal clinic also had the occurrence of persistent perineal pain in 16.2% (31/191) of them (Information not in table).

DISCUSSION

This study found that episiotomy rate in our hospital was 36.6%. Women younger than 30 years were more likely to have episiotomy. Over 80% of nulliparous women had episiotomy, and most of the normal birth weight babies delivered at term required episiotomy. Forceps delivery was a common predictor of episiotomy use in our study. Varying degrees of episiotomy complications including dyspareunia, episiotomy site infection and poor healing were reported by over 24% of the women who attended the scheduled 6-week post-delivery appointment.

In a WHO report in 2003, a worldwide episiotomy prevalence of 27% was documented, with India having 56%³. Other studies have reported 82.6% from Argentina¹³, 46% among primigravidae from Burkina Faso⁷, and 12.5% from Rwanda¹⁴. In Nigeria, studies documenting rates of episiotomy have reported 35.6% from Zaria¹⁵, 39.6% from Enugu¹⁶, 39.1% from Port Harcourt¹⁷, 34.3% from Ogbomoso¹⁸, and in Benin City, Otoide et al⁴ found an incidence of 46.6%. These rates are much higher than the recommended rate by the WHO. Though the worldwide figure reported by the WHO in 2003 is lower than most of these other rates reported in various studies, 27% appears far beyond the expectation of the WHO. Even then, our figure of 36.6% is similar to most of

the previous reports. The variation from region to region probably reflects a huge influence of established practice over time rather than adherence to clinical indication for episiotomy use, as the latter would likely produce a uniform rate across the globe. Again, the sheer difference between routine application of episiotomy and restrictive use of episiotomy can also significantly influence the observed rates from different parts of the world. This difference in approach may explain the finding by the American College of Obstetrics and Gynaecology that one in every 3 women ends up with episiotomy in the United States of America.¹⁹

In the WHO report of 2003, the rate among nulliparous women was double the worldwide rate at 54% whereas multiparous women had a rate of only 6%. In various studies, nulliparity has been shown to be associated with episiotomy. Enyindah et al¹⁷ in Port Harcourt reported 90% among nulliparous clients and the study by Alayande et al¹⁸ found 77.1% among the nulliparas. Otoide et al⁴ in Benin City also documented a rate of 90.5% episiotomy utilization in the primigravidae. In our study, episiotomy was done for 80.5% of nulliparous women, a figure which is in agreement with the reports of these previous researchers.

The reason why episiotomy is applied to most nulliparous women has often been the assumption that the perineum could stretch and tear raggedly because it had “not been previously tested.” Certainly, substituting a clean cut for a ragged tear to help minimize the pressure on the fetal head, and probably shorten the last portion of the second stage of labour, appears attractive. Even so, it may be rationalized that allowing first-time mothers earn episiotomy can help drive down the rates among them; and this may possibly reduce the overall incidence of episiotomy considering that the majority of episiotomy currently are done for nulliparas.

In our study, term pregnancies constituted the majority of those who had episiotomy for delivery. Shmueli et al²⁰ had reported that episiotomy was more likely with increasing gestation, while other authors documented

that episiotomy use for their patients was associated with gestation beyond 41 weeks²¹. The gestation at delivery probably stands proxy for fetal size so that women delivering beyond 37 weeks are expected to have larger babies, and thus require episiotomy. Hence, macrosomia has been correlated with the need to give episiotomy as reported by Ogunyemi et al²². This was not the case in our study as majority of the episiotomies were done for normal weight babies, while macrosomic neonates had 4.1% episiotomy rate in our patient population. Perhaps, the difficulty in diagnosing macrosomia before birth contributed to the low level of application of episiotomy in this group, suggesting that many of the babies who turned out macrosomic could have been unanticipated.

Forceps and other forms of assisted vaginal deliveries are often attended by the use of episiotomy as standard care. Chigbu et al²³ reported that most cases of forceps deliveries studied by them involved the use of episiotomy (10 out of 11) and 85% of their vacuum deliveries were assisted with episiotomy. Similarly, assisted breech deliveries have commonly been associated with episiotomy as reported by Sule et al¹⁶. We found episiotomy was required in 62.9% of forceps deliveries, 41.9% of vacuum deliveries and 48.6% of assisted vaginal breech deliveries. These figures are quite in agreement with findings of previous studies but many authors have continued to question the rationale for applying episiotomy in these settings, suggesting lack of benefit²⁴ or associated increased rates of significant perineal trauma²⁵. This contrary opinion has developed from the continued evidence over the years challenging the role of episiotomy during vaginal birth. Even then, the marked difference in opinion might reflect the pervading influence of the practice in the different regions where these works were carried out, considering that Latin American and South East Asian episiotomy rates will be expectedly higher than Western European figures with North America and sub-Saharan Africa lying in between³.

In our series, episiotomy use was complicated in 24.1% of the women who presented up to 6 weeks. It appears safe to assume that women who had significant complications would be among those who presented for further review. Almost a quarter rate of complication appears high, despite the possibility that having a problem could have prompted the women to return for follow up, especially in the face of low compliance with postnatal visit of 40.1%. Previous workers have documented various complications associated with episiotomy. Abubakar et al²⁶ showed that perineal pain was a common complaint following episiotomy with no patient complaining about dyspareunia. Similarly, Sule et al¹⁶ found perineal pain to be the most commonly reported complication. In contrast, we found that 48.7% of our patients who kept the follow up appointment at 6 weeks recalled having had dyspareunia or still experienced it at the time of evaluation. And this is similar to the findings of Langer²⁷ who reported high rates of dyspareunia and perineal pain in the weeks immediately following vaginal delivery. A possible link to time of resumption of coitus emerges from this observed difference in dyspareunia rates. It appears reasonable to conclude that the women who resumed coital activities within 6 weeks postpartum were more likely to experience dyspareunia.

Other forms of complications have been reported by different authors to include perineal extension of episiotomy incision, episiotomy site infection and breakdown, difficulty with walking, persistent perineal pain, and urinary incontinence^{4,10,11,16}. Episiotomy breakdown in our series occurred in 8.4% of the women, a significant burden for the women who most times had to endure secondary wound repair. The factors associated with wound breakdown have been suggested to be poor attention to asepsis, poor perineal hygiene, which could lead to infection¹⁶ with resultant breakdown. In our study, we did not report the contributing factors to episiotomy breakdown. It will be instructive to examine the determinants of episiotomy outcome in future studies, as

empirical data from our facility currently suggests that individual patient characteristics and poor wound care following repair are prominent determinants of episiotomy repair outcome. Clinician cadre-specific breakdown rate could also form a focus for further research.

In this study, we reviewed episiotomy utilization including over 5000 women, a sample size that appears large enough to improve the external validity of our findings. Furthermore, we documented the utility of episiotomy in many routine procedures which currently form the bulk of our labour ward activities, highlighting the important place of episiotomy in our practice. While admitting that the incidence of episiotomy can be safely reduced by the approach of selective or indicated use, it has also been brought to the fore that improvements in the utilization of episiotomy also require more focused attention in order to reduce complication rates.

The retrospective design of this study has some inherent drawbacks of lack of temporality and inadequate documentation from source of information. Despite these inadequacies, we have been able to add to the body of knowledge regarding the ongoing debate on the continued utility of episiotomy in modern day obstetric practice.

In conclusion, the incidence of episiotomy remains high in our hospital. However, many obstetric procedures continue to require the application of episiotomy, hence the need to focus on a more selective approach to episiotomy utilization. We recommend a prospective multicenter study to evaluate the continued role of episiotomy in our practice, and to determine ways to improve the overall outcome.

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Author Contribution

FO Ilevbare: Project development, Data

collection, Data analysis, Initial draft
NO Enaruna: Project development, Data analysis, Manuscript writing
Both authors read and approved the final manuscript.

CONCLUSION

This review is summary of the immunology of schistosomiasis which reflects the pathogenesis of the disease in humans. Host immune responses to the various developmental stages of the parasite produce cell mediated responses, granulomatous reaction and fibrosis.

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