

Prevalence and Determinants of Episiotomy: Cross Sectional Survey

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Abstract

Introduction: Episiotomy is one of the most common procedures in obstetrics; defined as perineum enlargement incision during the second stage of labor to increase the diameter of vaginal outlet to facilitate baby birth. Restrictive episiotomy involves performing an episiotomy only when there is an indication. The 2018 WHO episiotomy policy recommend to avoid routine or liberal use of episiotomy for women undergoing spontaneous vaginal birth. However, high prevalence of episiotomy are reported in developing countries and there is limited assessments in the study area.

Methods: Cross sectional study design was employed to assess the prevalence and determinants of episiotomy in St.Paul's Hospital, Addis Ababa, Ethiopia. The study included all vaginal deliveries from July- June2016 in the hospital. Medical charts for 344 deliveries in the selected period were reviewed for analysis. Systematic sampling was followed to employ study participants. Data were cleaned and analyzed using the Statistical Package of Social Sciences (SPSS) version 23.0 for Windows. Means, Percentages and Ratios were be calculated and cross tabulation used to compare different variables and subjected to Chi-square analysis to assess various relationships with a significance level of $P < 0.05$.

Result: A total of 344 women who had a vaginal delivery were included in the study. The age of the women ranges from 18-40 years, with the mean age of 25.53 (SD± 4.601) years. The prevalence of episiotomy was 41.9%. Binary logistics analysis showed statistically significance relationship between practice of episiotomy with parity ($P < 0.001$) and place of ANC follow up ($P = 0.019$), with duration of second stage of labour ($P = 0.001$) and weight of the new born ($P < 0.001$).

Conclusion: The study indicated high prevalence of episiotomy practice compared to the WHO recommended restrictive practice. Guidelines and evaluation of the practice has to be in place to improve the safe practice of episiotomy in the institution.

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Introduction

Episiotomy is one of the most common procedures in obstetrics; defined as perineum enlargement incision during the second stage of labor to increase the diameter of vaginal outlet to facilitate baby birth (1). Globally, approximately 140 million births occur every year. The majority of these are vaginal births among pregnant women with no identified risk factors for complications, either for themselves or their babies, at the onset of labour (2).

Episiotomy is responsible for complications, such as perineum lesion extension, increased maternal blood loss, edema, infection, hematoma, dyspareunia, rectovaginal fistulas, myonecrosis, neonatal intoxication from lidocaine, hypersensitivity reactions to anesthetics, endometriosis in scar, need of surgical correction due to irregular or excessive cicatrization problems, pain after delivery or maternal rejection of the newborn due to pain (1)(3). In addition, complications of episiotomy such as poor wound healing, incontinence, abscess and cellulitis as well as delay in resumption of sexual activity have led to some limitations against routine episiotomy (4)(5)(6)(7).

Restrictive episiotomy involves performing an episiotomy only when there is an indication. The 2018 WHO episiotomy policy recommend to avoid routine or liberal use of episiotomy for women undergoing spontaneous vaginal birth (2). Similarly, the American College and Gynecologists (ACOG) has concluded that restricted use of episiotomy is preferred to routine use. Thus, episiotomy should be considered for indications such as shoulder dystocia, breech delivery, macrosomic fetuses, operative vaginal deliveries, persistent occiput posterior positions,

and other instances in which failure to perform an episiotomy will result in significant perineal rupture(8).

Evidence has led to a decline in the incidence of episiotomy in many maternity centers around the world, especially in developed countries as a result of many randomized controlled trials and meta-analysis favoring restrictive rather than routine episiotomy as earlier practiced (5)(9)(6)(7)(10)(11). Studies about the episiotomy rates, around the world, showed that this surgery ranged from 9.7% (western) to 96.2% (South America-Ecuador) with lowest episiotomy rates in English speaking countries and it remained high in South America, South Africa, and Asia (12).

The World Health Organization (WHO) recommends an episiotomy rate of 10% for normal deliveries (13). Studies in Ethiopia depicted 42% prevalence in the norther (14) and 35.2% in Addis Ababa selected public health facilities(15).These findings indicated that, in developing countries like Ethiopia, the prevalence of episiotomy is very high compared to the WHO recommended rate of 10%.

St Paul's Millennium Medical College, as it is known today, was established through a decree of the Council of Ministers in 2010, although the medical school opened in 2007 and the hospital was established in 1968 by the late Emperor Haile Selassie. It is governed by a board under the Federal Ministry of Health. Obstetrics and gynecology is one of the clinical services offered to clients from the capital Addis and the surrounding regions (16). This study aimed to determine the prevalence and determinants of the practice of episiotomy at St.Paul's Hospital, Addis Ababa, Ethiopia.

Methodology

Cross sectional study design was employed to assess the prevalence and determinants of episiotomy in St.Paul's Hospital, Addis Ababa, Ethiopia. The study included all vaginal deliveries from July- June 2016 in the hospital. We excluded delivery by instrumental vaginal delivery (vacuum, forceps and destructive delivery), vaginal breech delivery and twin deliveries.

Sample size was determined using single population proportion sample size determination. Prevalence of 40% in previous study at tikur anbesa hospital, 95% confidence interval and 5% margin of error were used. Since the total population was less than 10,000, final sample size was adjusted with finite population sample size adjustment formula and yielded 344. Medical charts for 344 deliveries in the selected period were reviewed for analysis. Systematic sampling was followed in which the calculated sample size was divided from the total population then after selecting the first sample randomly every 14th delivery was selected from medical records of delivery until it reaches the total sample size.

Data collection tool to retrieve information from medical charts was prepared based on previous literatures (17). Pretest was conducted and the tool was revised to capture the required data. The tool had two parts covering sociodemographic and obstetric conditions of the mother and the new born and associated factors. Data collectors were trained on the tool before the data collection.

The collected data were cleaned and reviewed for completeness before analysis by the principal investigator. Data were analyzed using the Statistical Package of Social Sciences (SPSS) version 23.0 for Windows. Means, Percentages and Ratios were be calculated and cross tabulation used to compare different variables and subjected to Chi-square analysis to assess various relationships with a significance level of $P < 0.05$.

Research approval was sought from the medical school ethical and research committee. Permission was secured from the hospital administration through the academic provost of the school. All information from medical records were treated with utmost confidentiality and used only for the intended purpose.

Results

A total of 344 women who had a vaginal delivery were included in the study. The age of the women ranges from 18-40 years, with the mean age of 25.53 (SD± 4.601) years. Out of these, 144 (41.9%) were episiotomy procedures. There were 14 cases of perineal tear of which 3 (21.4%) of them were those who had episiotomy. From those with episiotomy 2 of them are extensions and only 1 is first degree tear. Of total there were 5 (35.7%) first degree, 7 (50%) second degree and 2 (14.3%) episiotomy extension tears.

A total of 283 (82.3%) of the newborns had Weight lying between 2500 - 4000 gm, 55 (16%) had weight between 1000 – 2499 gm (which is low birth weight if it is 1500-2499 and very low birth weight if it is from 1000-1499) and only 6 (1.7%) of the newborns had weight >4000 gm (Table 1).

During the study period the average value for APGAR score at first and fifth minute was 7.35 (SD±1.65) and 8.37 (SD±1.817) respectively. 13 (3.8%) of the newborns are still births. Furthermore, 36 (10.5%) of the newborns had 1st minute low APGAR score (<7). In this study 81% of labour was spontaneous .and 56% were primiparity. Half of them had less than 1 hour second stage of labour and followed by residents (doctors attending specialization on gynecology and obstetrics) (Table 1).

Table 1: sociodemographic and obstetrics history of study participants

Characteristics	Category	N	Percent
Age	<20	23	7%
	20-34	304	88%
	>34	17	5%
	Total	344	100%
Region	Addis Ababa	167	49%
	Oromia	177	51%
	Total	344	100%
Gestational age during delivery	<37 weeks	36	10%
	37-42 weeks	281	82%
	>42 weeks	27	8%
	Total	344	100%
Mechanism of Onset of labour	Spontaneous	277	81%
	Induced	39	11%
	Augmented	28	8%
	Total	344	100%
Parity	Primiparity	194	56%
	Multiparity	150	44%
	Total	344	100%
Other illness	Yes	64	19%
	No	280	81%
	Total	344	100%
Duration of 2nd stage of labour	>2hr	6	2%
	1-2 hr	144	48%
	<1hr	151	50%
	Total	301	100%
Labour attendant	Intern	54	38%
	Resident	71	49%
	Midwife	19	13%
	Total	144	100%
Birth weight (gm)	1000-2499	55	16%
	2500-4000	283	82%
	>4000	6	2%
	Total	344	100%

Binary logistics analysis showed statistically significance relationship between practice of episiotomy with parity ($P<0.01$) and place of ANC follow up ($P=0.019$). There was also statistically significance association of practice of episiotomy with duration of second stage of labour ($P=0.001$) and weight of the new born ($P<0.01$) (Table 2).

The status of episiotomy after binary logistic analysis, urban residence has 1.6 times increased risk of having episiotomy than rural mothers (OR=1.624, 95% CI 1.055-2.500). Similarly primiparity of women was linked with more than times increased risk of episiotomy (OR=8.514, 95% CI 5.042-14.376). Duration of second stage of labor, < 1hr. also posed women to 3 times increased risk of episiotomy than duration of 1-2 hour (OR=3.268, 95% CI 2.027-5.267). The odds of giving birth weight of ≥ 2500 gm has about 4 times more likely experience of episiotomy as compared with those weighing of 1500g-2499g (OR=3.890, 95% CI 1.888-8.018)

Table 2: Association of practice of episiotomy with obstetric factors

Variables	Category	Episiotomy done				P value
		Yes		No		
		N	%	N	%	
Parity	Primiparous	120	61.9	74	38.1	0.0001*
	Multipara	24	16	126	84	
Place of ANC follow up	Urban H/C	78	49.1	81	50.9	0.019*
	Rural H/C	62	36.3	109	63.7	
Onset of Labor	Spontaneous	119	43	158	57	0.143
	Induced	11	28.2	28	71.8	
	Augmented	14	50	14	50	
Duration of second stage of labor	< 1 hr.	44	29.1	107	70.9	0.0001*
	≥ 1 hr.	86	57.3	64	42.7	
Gestational age	<37wks.	10	27.8	26	72.2	0.193
	37-42wks.	122	43.4	159	56.6	
	>42 wks.	12	44.4	15	55.6	
Birth weight	1500-2499 g	10	18.2	45	81.8	0.0001*
	≥ 2500 gm	134	46.4	155	53.6	
Presence of Meconium	Yes	26	49.1	27	50.9	0.248
	No	118	40.5	173	59.5	
Time of Delivery	Day time	49	37.1	83	62.9	
	Evening	48	42.9	64	57.1	
	After midnight	47	47	53	53	

*Statistical significant association

Discussion

The study showed that the prevalence of episiotomy practice among women who give vaginal birth was 144 (41.9%) which is closer when compared with research done at Addis Ababa Tikur Anbessa Hospital, at public health institutions of Axum Town, in Fatemeh Teaching hospital that depicted 40.2%, 41.44% and 41.5% respectively (18)(14)(19).

However, the result is higher related with the akaki kality heath facilities result in Addis Ababa, public health institutions of shire town, Mizan Aman General Hospital, in a tertiary care Centre in Nigeria, Brazil and in Vietnamese which indicates the prevalence of episiotomy (35.2%), (35.4%), 30.6%, 25%, 29.1% (17) and 15.1% respectively (15)(20)(21)(22)(23). The possible reason for this high prevalence might be explained by the difference in study area, institutions difference which provide the service, due to the increased emphasis on the restrictive use of episiotomy at the institution in line with evidence-based recommendations and an increment of quality service through training

The lower prevalence in Brazil was the implementation of selective episiotomy Since 2002 at the Maternidade Professor Monteiro de Moraes, in Recife, state of Pernambuco, Brazil, indicated in pregnant patients with acute fetal distress and inadequate progress of labor (17).

The finding showed four fold higher figure from the WHO recommended prevalence (24). But a prospective cross-sectional study conducted in 2013 on the prevalence of episiotomy in primiparous, and related conditions in Turkey indicated even a higher prevalence than our study (56.3%) (25).

Episiotomy practice was more likely associated with primiparae mothers when compared with Multiparous women (OR=8.514, 95% CI 5.042-14.376). This result was consistent with the study done, at shire town which indicates primiparae women were 2.1 times more likely to be performed episiotomy and Akaki kality study [AOR=15.031 (6.369, 35.475)] (15)(20). A review conducted in the United States with 8,647 patients have shown 50% frequency of episiotomy in primiparous against 23% in secundiparous and multiparous women (OR=4.10), which was statistically significant (26) and in accordance with our findings. This may be most of the time primipara women were prone to perineum tight which is one indication of episiotomy and old recommendation of routine episiotomy in primiparous women's performed by many health professionals, might still have an influence in the indication of this procedure for those women's.

Duration of second stage of labor, > 1hr. also posed women to 3 times increased risk of episiotomy than duration of less than 1 hour (OR=3.268, 95% CI 2.027-5.267). Similary in a study conducted in Addis Ababa, there was significant association when the women stayed more than two hour during her second stage of labor when compared with women who stayed less than one hour with the practice of episiotomy [AOR=11.167 (2.567, 48.588)] (15). However, in a study conducted in Brazil labor over six hours (average for active phase of labor) and prolonged expulsion period (over 30 minutes) were assessed, with no significant association

evidenced for the episiotomy performance (17).

The odds of giving birth weight of ≥ 2500 gm has about 4 times more likely experience of episiotomy as compared with those weighing of 1500g-2499g (OR=3.890, 95% CI 1.888-8.018). Similarly, the akaki study portrayed the practice of episiotomy also had a significant association when newborn weight was greater than 4000 g as compared with women who gave birth between 1500-2499 g newborn [AOR=26.343 (26.159, 265.289)] (15). However, the study done at Nigeria and Axum town showed no significant association (22)(14).

During the construction of this research's causal model, the hypothesis that birth at night shift would be a risk factor for episiotomy was suggested. However, this hypothesis was not confirmed and no studies showing this association were found in literature (17).

Limitations of the study

The retrospective nature limited the scope of the study as the late complications of episiotomy could not be studied; data on social status of participants, including educational status and occupation were difficult to retrieve because of the incomplete record of the individuals.

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