

# Comparison of episiotomy rates, practice of analgesia and the maternal complications within first 24 hours at two tertiary care units: a comparative, descriptive and a retrospective study

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## Abstract

**Objectives:** Estimate the episiotomy rates at two tertiary care units. Find out the practice of analgesia, prior to performing the episiotomy at the two units. Find out the maternal complications within the first 24 hours after episiotomy at the two units. Compare the outcomes at the two units.

**Method:** Data collected from medical records of all normal vaginal deliveries (NVD); from 21st April to 20th May 2011 at Anuradhapura Teaching Hospital (ATH) and 20th March to 20th May 2012 at labour room C, Castle Street Hospital for Women (CSHW).

**Results:** The episiotomy rate at ATH was 59%, rate of 85% for primiparous women and a rate of 29.9% for multiparous women. The episiotomy rate at CSHW was 96.5%, a rate of 97.8% for primiparous women and a rate of 94% for multiparous women. All were medio-lateral episiotomies. Except for two women at CSHW who had epidural analgesia in labour, none of the other women had effective analgesia prior to performing episiotomies at both units. All women had 1% - 2% lignocaine infiltrations prior to repair of episiotomy at both the above units. The complications documented within 24 hours due to episiotomy at both units were haematomas, re-suturing, vaginal pack insertions and anaemia.

**Conclusion:** Episiotomy rate at CSHW was significantly higher than ATH. However at both units the episiotomy rates were higher than the recommended rates and there was no significant difference in the rate of complications at the two units.

**Key words:** episiotomy rate, child birth practices, analgesia for episiotomy, maternal morbidity

preterm delivery, breech delivery, foetal compromise or predicted macrosomia.

Vagina and vulva is composed of muscular and erectile tissue. These tissues are able to distend for birth and contract after parturition. Many of these tissues including blood vessels, nerves and erectile tissues can be damaged by episiotomy. Eventually these erectile tissues will lose its ability to contract and relax and the woman will end up having sexual dysfunctions. No evidence suggests that sexual function is improved by episiotomy; those who have episiotomy may be more likely to have pain with intercourse in the months after pregnancy and are slower to resume having intercourse<sup>1</sup>.

In Sri Lanka more than 95% of women deliver at hospitals. In some regions hospital delivery is almost 99%. There are trained birth attendants at all hospitals and there is free access to maternity care country wide in all regions. However evidence based child birth practices are not yet popular at many hospitals in Sri Lanka. There were approximately 15,500 deliveries per year at ATH during the year 2010. CSHW is a maternity hospital, in the commercial capital of Sri Lanka. There are five maternity units at CSHW with one specialist obstetrician heading each unit. This study was carried out at one unit (labour room C). There were approximately 3000 deliveries per year during the last three years at labour room C.

The norm in Sri Lanka is to perform episiotomy without anaesthesia, due to the popular belief that episiotomy could be performed painlessly without anaesthesia if it is performed at the peak of a contraction when the

## Introduction

Episiotomy during vaginal delivery was first recommended in 1920s. Episiotomy was initially considered to protect the pelvic floor from lacerations and protect the foetal head from trauma. Therefore it was soon adopted as a standard practice and has been widely used since then. The only surgical procedure more fre-

quently performed than episiotomy is cutting the umbilical cord. Since mid-1980s, there has been a growing body of evidence that episiotomy does not provide these proposed benefits. Evidence over the last two decades show that many women fare better without episiotomy, because the natural tears they suffer are often less severe than the episiotomy<sup>1</sup>. World Health Organization's evidence-based practice for normal birth does not recommend routine episiotomy, and episiotomy is classified as "can be harmful"<sup>2</sup>. The current recommendation is that "routine" episiotomy should be abandoned. Limiting the use of episiotomy is strongly recommended to help protect the integrity of the perineum<sup>2</sup>. Until further research is done, episiotomy should be considered only for certain conditions like; assisted vaginal delivery (forceps or vacuum),

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perineum is at full stretch<sup>3</sup>. This may be the popular belief among Sri Lankan birth attendants; however there are few maternity units where effective analgesia is given prior to performing episiotomy even in Sri Lanka. There is a dearth of published research or audits on child birth practices in Sri Lanka at present.

## Method

A hospital based retrospective study was performed by collecting data from the birth registry and medical records of all singleton, term, and vertex presentations, delivered vaginally. Excluded from the study were preterm births (<37 weeks gestation), non-vertex presentations, multiple pregnancies, vaginal births after caesarean section and instrumental deliveries. Data collected from 21st April to 20th May 2011 at ATH and 20th March to 20th May 2012 at labour room C, CSHW. At ATH data was collected during 30 consecutive days. At CSHW data was collected during 60 consecutive days. Episiotomy rate, type of analgesia used during labour and prior to episiotomy and complications due to episiotomy within 24 hours after delivery were evaluated as outcome measures. Pearson's chi square test was used to compare the proportions and independent sample t-test to compare the means.

## Results

The average age of the women in the study population at ATH was 25.6 years and at CSHW labour room C was 27.8 years. Age range was from 15 years to 42 years at ATH and 16 years to 43 years at CSHW. Average gestation at time of delivery was 39 weeks and 4 days (SD=1.5) at ATH and 39 weeks (SD=1.2) at CSHW (Table 1). Gestation at the time of delivery range was from 37 weeks to 42 weeks and 5 days at ATH and 37 weeks to 41 weeks at CSHW. The average birth weight at ATH was 2860.6g (SD=189) and 3000.7g (SD=194) at CSHW. The ranges of birth weights

were 1550g to 4110g at ATH and 1800g to 4530g at CSHW. At ATH the rate of macrosomia (BW=>3.5Kg) was 8% and at CSHW was 10%.

There were higher numbers of normal vaginal deliveries, 799, at ATH compared to CSHW labour room C, 283. At ATH out of 799 normal vaginal deliveries 463 women (59%) had a medio-lateral episiotomy at the time of delivery. At CSHW labour room C, out of 283 normal vaginal deliveries 273 women (96.5%) had a medio-lateral episiotomy at the time of delivery (Table 2).

There were 406 nulliparous women who had a normal vaginal delivery and 345 of those women had an episiotomy performed at the ATH, with a rate of 85% (Table 2). There were 135 nulliparous women who had a normal vaginal delivery at CSHW labour room C and 132 of those women had an episiotomy performed, with a rate of 97.8%. There were 393 multiparous women who had a normal vaginal delivery at ATH and 118 of those women had an episiotomy, with a rate of 29.9%. There were 148 multiparous women who had a normal vaginal delivery at CSHW and 139 of those women had an episiotomy, with a rate of 94% (Table 2).

Average time a woman was in the labour room until delivery was 176 minutes at ATH and 189 minutes at CSHW. The time range was twelve

minutes to 560 minutes at ATH and six minutes to 756 minutes at CSHW (Table 3). Only 29% of women at ATH and 33% at CSHW had pethidine as analgesia during labour. Two women had epidural analgesia during labour at CSHW labour room C (Table 3).

At both the above units none of the women who had an episiotomy had local infiltration of lignocaine prior to performing the episiotomy. Two women had epidural analgesia at CSHW labour room C during labour (Table 3).

Complications documented within 24 hours of normal vaginal delivery due to episiotomy were haematomas, re-suturing of the episiotomy, insertion of vaginal packs and haemoglobin less than 8g/dl (Table 4). The rate of complications at ATH was 2.59% and at CSHW 2.93% (Table 4).

In women who had a normal vaginal delivery and an episiotomy, there were documented five, third degree perineal tears at ATH and two at CSHW (Table 4). The rate of third degree perineal tears was 0.63% at ATH and 0.71% at CSHW (Table 4).

There were 124 (0.15%) women at ATH and 94 (0.33%) women at CSHW who stayed in hospital for more than 24 hours after a normal vaginal delivery (Table 5). The reason for delay in discharge from the hospital, in the majority of women was attributed to as a neonatal problem in the medical records (Table 5).

**Table 1. Comparison of gestation, birth weights and age of the women**

	ATH	CSHW	t test
Average gestation at delivery	39 weeks + 4days	39 weeks	P<0.01
Standard deviation	1.5	1.2	
Average birth weight	2860.6g	3000.7g	P<0.01
Standard deviation	189	194	
Average age	25.6 years	27.8 years	P<0.01
Standard deviation	4.2	4.7	

**Table 2. Comparison of episiotomy rates at the two units**

	ATH	CSHW	Pearsons's chi square test
Number of NVDs	799	283	
Total number of episiotomies	463	273	
Episiotomy rate	59%	96.5%	P<0.01
Number of primiparous women (number of episiotomies)	406 (345)	135 (132)	
Episiotomy rate among primiparous women	85%	97.8%	P<0.01
Number of multiparous women (number of episiotomies)	393 (118)	148 (139)	
Episiotomy rate among multiparous women	29.9%	94%	P<0.01

**Table 3. The time in labour room until delivery, analgesia during labour and analgesia prior to performing episiotomy at the two units**

	ATH	CSHW	Pearsons's chi square test
Average time in labour room until delivery	176 minutes	189 minutes	
Time range	12 - 560 minutes	06 - 756 minutes	
Analgesia during labour			
Pethidine	234 (29%)	94 (33%)	P=0.21
Epidural	0	02	
Analgesia prior to performing episiotomy	0	0	

**Table 4. Complications due to episiotomy up to 24 hours after delivery at the two units**

	ATH	CSHW	Pearsons's chi square test
Total number of episiotomies	463	273	
Complications due to episiotomy	12	08	
Rate of complications	2.59%	2.93%	P=0.7
Rate of complications in primiparous women	3.47% (12/345)	3.78% (05/135)	P=0.9
Rate of complications in multiparous women	0% (0/118)	2.27% (3/139)	P=0.1
Vaginal pack insertion	09	07	
Haematoma	05	03	
Haemoglobin <8g/dl	0	03	
Re-suturing	04	02	
Third degree perineal tears	05	02	
Rate of 3rd degree perineal tears	0.63%	0.71%	P=0.6
Labial tears	03	01	
Rate of Labial tears	0.64%	0.36%	P=0.6

**Table 5. Reasons for hospital stay for more than 24 hours after NVD at the two units**

<i>Reason for more than 24hour hospital stay after a NVD</i>	<i>ATH</i>	<i>CSHW</i>	<i>Pearsons's chi square test</i>
<b>Neonatal complications</b>	76	58	P=0.2
<b>Maternal complications (other than due to episiotomy)</b>	36	29	P<0.01
<b>Episiotomy complications</b>	12	08	P=0.7
<b>Total</b>	124 (15%)	95 (33%)	P<0.01

## Discussion

Episiotomy is often called the unkindest cut of all. It has been shown that in developing countries the change of child birth practices from traditional practice to evidence based practice is slow<sup>4</sup>. Compared to other developing countries, Sri Lanka has a better organised and well-structured health care system, that provide maternal and child health care from the primary care level to tertiary care level<sup>5</sup>. Sri Lanka has the lowest maternal and infant mortality rates in South East Asia. However there had been less attention given to child birth practices in terms of pain relief and support to women in labour. The time is ripe to consider giving priority to evidence based child birth practices in Sri Lanka.

There was a significant difference in the mean age, average gestation at delivery and the mean birth weights at the above two units (Table 1). The different induction of labour practices at the two units probably may have made the significant statistical difference of the mean gestation at delivery. The average birth weight (BW) in Sri Lanka by district in 2007, published by government statistics department gives Colombo district's average BW as 2935g and for Anuradhapura district 2857g. Significant statistical difference in the mean birth weights (2860.6g at ATH and 3000.7g at CSHW) at the two units can be attributed to the regional variations, like urban/rural populations.

The rate of episiotomy at ATH was 59% and at CSHW 96.5% (Table 2). At

ATH the rate of episiotomy was significantly lower compared to CSHW ( $p<0.01$ ). However at both the units the rate of episiotomy was higher than the recommended rates. WHO guideline on care in normal birth recommends a 10% rate of episiotomy, to be without harm to the mother or the infant<sup>2</sup>. Katherine Hartmann, et al, states that rates of episiotomy of less than 15% of spontaneous vaginal births should be immediately within reach<sup>1</sup>. Ian D. Graham, et al, published a study on episiotomy rates around the world concludes, that there is a large variation in the use of episiotomy from country to country, also there are variation within regions of a country<sup>6</sup>. The variation within regions of Sri Lanka too is shown in this study.

In many countries especially united Kingdom and Scandinavian countries the rate of episiotomy has come down drastically during the last two decades. In the year 2010 the rate of episiotomy in UK was 8.3% and 9.7% in Sweden in 2003<sup>7,6</sup>. A study of the morbidity associated with episiotomy by D S Weerasekera, published in 2002 gives a rate of episiotomy of 51.4% at the University Unit, Colombo South Teaching Hospital, in Sri Lanka<sup>8</sup>.

Routine episiotomy for nulliparous women is no longer recommended. There is no evidence of benefit from the use of routine episiotomy over restrictive episiotomy even in nulliparous women. Alperin M, et al concludes that episiotomy at first vaginal delivery increases the risk of

spontaneous obstetric laceration, including third and fourth degree perineal tears in the subsequent delivery<sup>9</sup>. At both the above units the rate of episiotomy was high among nulliparous women (85% at ATH and 97.8% at CSHW). Yet the rate of episiotomy was significantly higher statistically at CSHW among nulliparous women compared to ATH ( $p<0.01$ ). The rate of episiotomy among multiparous women at ATH (29.9%) was significantly lower compared to CSHW (94%). It is promising that ATH had a lower rate of episiotomy among multiparous women, as recommended by Lede RL to be justified within 30%<sup>10</sup> (Table 2). However there was no significant difference in the rate of complications due to episiotomy at both units ( $p=0.7$ ). Therefore this may indicate that the rate should come down more than 59% at ATH to prevent significant maternal complications within first 24 hours postpartum. Rate of episiotomy was lowest among the multiparous women at ATH and there were no episiotomy related complications documented in those women (Table 4).

A study done in Sri Lanka in 2009 states only 8% of mothers received local anaesthesia prior to performing an episiotomy, but 99% received local anaesthesia prior to episiotomy repair at North Colombo Teaching Hospital, in Sri Lanka<sup>11</sup>. National Institute for Health and Clinical Excellence (NICE), United Kingdom guideline on intrapartum care (2007) recommends that tested effective analgesia should be

provided prior to carrying out an episiotomy, except in an emergency due to acute foetal compromise. WHO guideline on episiotomy recommends use of local infiltration of lignocaine or pudendal block prior to performing episiotomy. It was unfortunate to find out none of the women at ATH or CSHW had effective analgesia prior to episiotomy, except in two women who had epidural anaesthesia at CSHW (Table 3).

Majority of the women had been in the labour room for approximately three hours (176 minutes at ATH and 189 minutes at CSHW) at the above units, until delivery (Table 3). Some of the women (29% of women at ATH and 33% at CSHW) had pethidine intramuscular injections as analgesia during labour (Table 3). Only few women will request effective analgesia during labour in Sri Lanka. The best pain relief most of them would get is intramuscular pethidine<sup>12</sup>. Epidural analgesia for pain relief in labour is only available in few tertiary care units in Sri Lanka. Although many assume that Sri Lankan women prefer natural labour, further research should be done to confirm women's attitudes and beliefs regarding pain relief in labour.

The documented complication rate due to episiotomy at ATH was 2.59% and at CSHW was 2.93% (Table 4). There was no statistically significant difference of complications due to episiotomy at the two units ( $p=0.7$ ). The complications documented in the medical records of the above two units have been previously reported in literature. Only at CSHW that low haemoglobin (<8g/dl) was documented in three women who had excessive bleeding / haematoma formation following episiotomy and had undergone re-suturing of the episiotomy (Table 4). These three women had normal pre delivery haemoglobin levels and needed blood transfusions after delivery. There was one woman at CSHW labour room C, who had a normal vaginal delivery had to have re-suturing of the episiotomy twice at the operating

theatre and also had a balloon catheter tamponade applied to the vagina for 24 hours to control the bleeding.

Vaginal pack insertion was the most frequently done additional procedure at both units following episiotomies which were complicated by haematomas or excessive per vaginal bleeding (Table 4). There were nine vaginal pack insertions at ATH; all were done at the labour room. There were seven vaginal packs insertion at CSHW; this includes one case of balloon tamponade application at the operating theatre. There were four re-suturing of the episiotomy done at ATH at the labour room. There were two re-suturing of episiotomy done at operating theatre at CSHW. There were five haematomas following episiotomy at ATH and three at CSHW (Table 4). Those women who had a haematoma either had a vaginal pack, re-suturing of the episiotomy or a balloon tamponade. The three women with haematomas at CSHW had haemoglobin <8g/dl, 24 hours after delivery.

Woolley systematically reviewed the literature from 1980 to 1994 concluded that a medio-lateral or midline episiotomy does not prevent damage to the anal sphincter and its sequelae<sup>13</sup>. Many studies have found that episiotomy is the factor with the strongest association with a third or fourth degree laceration, especially in the presence of a midline episiotomy<sup>14</sup>. Severe perineal tears which involve the anal sphincters and/or the rectal mucosa are identified in 0.6-0.9% of vaginal deliveries as reported in literature<sup>16</sup>. At the above two units third degree perineal tears (ATH 0.63% and CSHW 0.71%) were within the range of reported incidence in the literature (Table 4). There were three (0.64%) labial tears documented at ATH while at CSHW there was one (0.36%). There was no significant difference of the occurrence of perineal and labial tears at both units ( $p = 0.7$ ).

Although perineal pain is common after an episiotomy, none of the medical records had documented this

complication at both the above units. The post episiotomy analgesia recorded in the uncomplicated cases at both units was paracetamol 1000mg on request by the woman when in pain. There were no routine analgesia requests in the majority of the women except in the women with post op complications. The burden of mortality and morbidity related to pregnancy and childbirth remains concentrated in developing countries<sup>17</sup>.

Hospital stay for more than 24 hours after NVD at CSHW was significantly higher than ATH (Table 5). This significant difference is attributed to maternal complications other than episiotomy mainly medical complications. All women who had a complication due to episiotomy had stayed more than 24 hours in the hospital after a NVD.

## Conclusions

The rate of episiotomy at CSHW was significantly higher than ATH. However there was no significant difference in the rate of complications due to episiotomy. This may be due the higher rates of episiotomy than the recommended 10-15% at both units. Practise of analgesia for episiotomy was insufficient at both units.

We suggest that Sri Lankan birth attendants should be trained and educated to improve evidence based child birth practices, with more emphasis given to effective pain relief for episiotomy and labour. The principles of evidence-based practice are to encourage health professionals to use practices with proven benefit and eliminate the use of those shown to be ineffective or harmful. Effective implementation of safe and effective practices like restrictive episiotomy should lead to a reduction in maternal mortality and morbidities. Audits should be encouraged on labour ward practices such as episiotomy rates, complications due to episiotomy and practice of analgesia during labour and episiotomy. This will hopefully improve the safety and standards of child birth practices in Sri Lanka.

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