

A prospective clinical audit evaluating the incision angle at mediolateral episiotomy for vaginal delivery

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Abstract

Background: Increasingly, the angle at which the episiotomy is performed has come under scrutiny. The current recommendation is that because of distortion of the anatomy at crowning of the head, the incision should be at an angle of at least 60° from the midline to ensure that a post-delivery angle of 43° is achieved.

Method: A prospective clinical audit was performed in Castle Street Hospital for Women, Colombo, Sri Lanka, evaluating the post-delivery angle after suturing of episiotomy in a sample of consecutive vaginally delivered women. The angle after repair was defined as the angle formed by the suture line and the midline is measured at the end of the suturing. OASI Care Bundle, recently developed by the RCOG was used as the gold standard reference.

Results: A total of 105 consecutive vaginal deliveries with mediolateral episiotomy were evaluated. Mean age (SD) was 27.9 (6.0) years. Mean gestational age (SD) was 39.3 (1.7) and mean birthweight (SD) was 3.0 (0.5) kg. There were 97 (92.4%) spontaneous vaginal deliveries and 21 (20.0%) were diabetic. Majority, 48 (45.7%) had their first delivery. There were 6 (5.7%) third degree perineal tears and 24 (22.9%) had additional second degree perineal tears. Out of 105, 91 (86.7%) women had post-delivery angle of less than 45° and 33 (31.4%) of them were less than 30°. Only 14 (13.3%) episiotomies were having the correct post-delivery angle (45°). Majority (55.2%) had not been started from the midline.

Conclusion: Current practice of incision angle at medio-lateral episiotomy is not satisfactory. Training using 'Episiotomy angle-cutter demonstrator' in the OASI Care Bundle has been planned before the re-audit.

Key words: episiotomy; perineal trauma, OASIS, audit

Sri Lanka Journal of Obstetrics and Gynaecology 2020; **42**: 143-146

DOI: <http://doi.org/10.4038/sljog.v42i4.7969>

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Received 13th October 2020

Accepted 1st December 2020



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Background

Episiotomy is used almost routinely in vaginal deliveries in Sri Lanka¹. However, it is indicated in certain situations including the instrumental vaginal deliveries and shoulder dystocia^{2,3}. The most concerning complication of episiotomy is the potential extension of the incision into the anal sphincter, causing obstetric anal sphincter injury (OASI). Episiotomy should be reserved for situations where there is a clear indication to expedite delivery in fetuses thought to be otherwise hypoxic^{3,4}.

Current consensus is that an episiotomy should not be performed routinely and guidance in this regard has been issued by the numerous professional bodies promoting its restrictive application⁴. Hence Sri Lankan practice seems to perform excessive number of episiotomies. We planned to increase awareness and streamline the current local practice related to episiotomy. Evaluation of episiotomy practice aiming to lower unnecessary episiotomies is considered as a step reflecting the quality of care in obstetrics⁴.

Method

Design and setting

A prospective clinical audit was performed in a labour ward of Castle Street Hospital for Women, Colombo Sri Lanka. The post-delivery angle was assessed immediately after suturing of episiotomy in a sample of consecutive vaginally delivered women.

Standard audit reference

OASI Care Bundle developed by the RCOG, was used as the gold standard reference^{2,5}. According to the second element of this Care Bundle, if an episiotomy is indicated, it should be performed at a 60° angle on the woman's right as the fetal head is crowning^{2,5}. This would yield a post-delivery angle of 43°^{4,6}.

Method of angle measurement

The 'angle after repair' was defined as the angle formed by the 'suture line and the midline' and angle was measured at the end of the suturing. An angle measuring sketch, which was one-quarter of a circle with a radius of 10cm drawn on a cardboard was used to measure the 'angle after repair'. This design was similar to the 'Episiotomy angle-cutter demonstrator' (Figure 1) proposed by the Royal College of Obstetricians and Gynaecologists (RCOG). At the end of suturing, a

sterile gauze swab was placed over the episiotomy site, one end in line with the midline and the other crossing the suture line. The gauze swab was cut parallel to the suture line and this was used to compare with the above mentioned angle measuring sketch to get a rough estimate of the 'angle after repair'. This angle measurement did not require any additional time and performed as quickly as possible by the medical officer who performed the suturing. No patient identification data was obtained. Women's privacy and confidentiality was not affected as this audit was performed as part of a routine clinical care for them. No ethical concerns involved.

Results

A total of 105 consecutive vaginal deliveries were evaluated. Mean age (SD) was 27.9 (6.0) years and median (IQR) parity was 2.0 (1-3). Mean gestational age (SD) was 39.3 (1.7) and mean birthweight (SD) was 3.0 (0.5) kg. There were 97 (92.3%) spontaneous vaginal deliveries, 7 (6.7%) instrumental deliveries and 1 (1.0%) assisted vaginal breech delivery. Twenty one (20.0%) were diabetic. Majority, 73 (69.5%) were uncomplicated pregnancies and 48 (45.7%) had their first delivery.

Twenty-two (21.0%) episiotomies were performed without local analgesia. There were 6 (5.7%) third degree perineal tears and 24 (22.9%) had additional second degree perineal tears. Out of 105, 91 (86.7%) women had post-delivery angle of less than 45° and 33 (31.4%) of them were less than 30°. Only 14 (13.3%) episiotomies were having the correct post-delivery angle (45°). Majority (n=58, 55.2%) had not been started from the midline.

Discussion

The results of the present audit showed that the practice correct incision angle for episiotomy needs attention and proper training using the available resources, and regular re-audit is indicated in a setting with unlimited access to specific scissors developed for this purpose (EPISCISSORS-60).

It has been shown that an incision angle of medio-lateral episiotomy of 60° resulting in a low incidence of anal sphincter tearing (OASI), anal incontinence and perineal pain^{2,7}. The novel invention of EPISCISSORS-60 has resulted in a significant reduction in the anal sphincter injuries⁸. However, EPISCISSORS-60 has restricted use due to higher cost

and newer devices such as 'Rane's Episiotometer' might yield a solution for this in near future⁹. It might be helpful for the low resource settings.

This audit showed that 21.0% episiotomies were performed without local analgesia. A previous Sri Lankan study has also demonstrated that women suffer from significant pain since a majority of episiotomies were performed without analgesia¹. Main reason is that nurses and midwives involved in normal deliveries in Sri Lanka are not licensed to administer a local anaesthetic¹ and this needs to be addressed in a practical way. 'Episiotomy angle-cutter demonstrator' (Figure 1) has been included in the OASI Care Bundle project to be used as training material for the correct incision angle⁵.

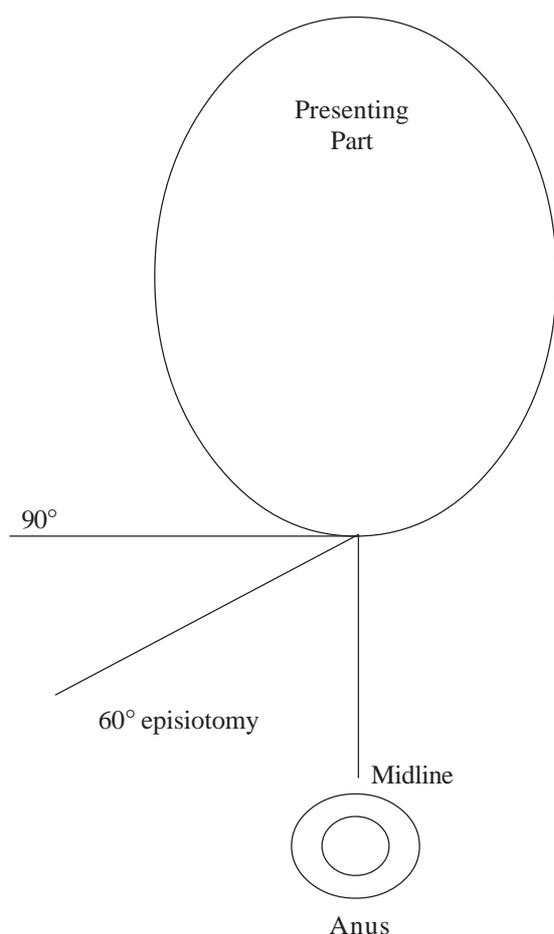


Figure 1. Episiotomy angle cutter demonstrator as proposed by the OASI Care Bundle Project Team.

Source: Adapted from Royal College of Obstetricians and Gynaecologists (RCOG) OASI Care Bundle Project 2020⁵.

This is the first ever reported audit on this topic among Sri Lankan women and therefore, provides baseline information regarding the incision angle at episiotomy. The results gives an alarm to the other obstetric units in Sri Lanka to audit the practice of episiotomy. Kalis et al studied the incision angle of medio-lateral episiotomy before delivery and after repair and concluded that the suture angle cannot be used to evaluate whether a medio-lateral episiotomy was properly performed¹⁰. However, for the purpose of conducting a clinical audit, studying the incision angle was the feasible approach and yielded important results.

Limitations

Being a clinical audit, assessment of episiotomy angle at the time of crowning of fetal head was difficult to perform hence post-delivery, 'angle after repair' was assessed. A single center data has poor external validity.

Conclusion

Current practice of incision angle at medio-lateral episiotomy is not satisfactory. Training using 'Episiotomy angle-cutter demonstrator' in the OASI Care Bundle has been planned before the re-audit in this setting with no access to EPISCISSORS-60.

Author Declarations

Author contributions: Author MP participated in conception, design, and analysis, writing/editing of the report. UG involved in data collection and editing. AJ reviewed/edited the report and all authors agreed on the final version to be published.

Conflicts of interest: Authors declare that they have no conflicts of interest.

Acknowledgement

We wish to thank house officers at the Castle Street Hospital for Women, Colombo, Sri Lanka for their immense support.

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