

EPISIOTOMY TECHNIQUE BETWEEN MIDWIVES AND DOCTORS - TIME FOR REAPPRAISAL?

Hypothesis / aims of study

Although episiotomy is the most common operation performed in obstetrics, there is a lack of standardisation in technique. There is level 1 evidence that compared to liberal episiotomy a policy of restrictive episiotomy does not increase the incidence of anal sphincter injury¹. However the ideal episiotomy rate remains to be established.

Obstetric anal sphincter injuries occur in up to 5% of vaginal deliveries in units practising mediolateral episiotomy and in 19% of units practising midline episiotomy. Although midline episiotomy is widely practised in North America it is a recognised risk factor for anal sphincter injury. In the United Kingdom the standard practice is to perform mediolateral episiotomies.

A review of all currently recommended midwifery and obstetric textbooks² advocate performing mediolateral episiotomies at between 40° to 60° from the sagittal plane. In a novel validated pictorial questionnaire³ it has been shown that compared to doctors significantly more midwives in the United Kingdom indicated that they performed an episiotomy angled at less than 30°.

The aims of this study were:

1. To establish the technique of episiotomy practised by doctors and midwives.
2. To determine whether there is any correlation between the angle of the episiotomy and the presence of anal sphincter injury.

Study design, materials and methods

A prospective study of women undergoing their first vaginal delivery who had an episiotomy performed. The depth, length, distance from posterior fourchette were measured using a disposable ruler after suturing. The angle of episiotomy from the sagittal plane was calculated after suturing the perineum. All women had a standardised rectal and perineal examination performed at delivery.

Results

Ninety eight women who had a mediolateral episiotomy consented to participate in the study. Fifty eight were delivered by doctors and 40 by midwives. Fifty three of the 58 delivered by doctors were instrumental deliveries (forceps 7, ventouse 34, both instruments 12). Anal sphincter disruption occurred in 41 of 98 (42%) women and all were confirmed by the duty registrar or consultant. Of these 15 (38%) occurred after deliveries by midwives and 26 (45%) following a delivery by a doctor.

The measurements taken of episiotomy are shown in table 1.

Table 1

	Midwives (n=40)	Doctors (n=58)	P value
Depth (mm) ^a	45 (20 – 90)	55 (25 – 115)	0.002
Length (mm) ^a	40 (20 – 55)	45 (10 – 65)	0.05
Angle (degrees) ^a	20.1 (12.8 – 38.7)	27 (0 – 73.7)	0.047
Distance from anal canal (mm) ^a	25 (15 – 50)	30 (12 – 65)	0.58

Table 2 Correlation between episiotomy and anal sphincter injury in all deliveries

	Anal sphincter injury (n=41)	No anal sphincter injury (n=57)	P value
Depth (mm) ^a	60 (25 – 115)	50 (20 – 100)	0.002
Length after repair (mm) ^a	45 (12 – 60)	40 (10 – 65)	0.014
Angle after repair (degrees) ^a	22 (14.5 – 56.4)	26.4 (0 – 51.1)	0.032
Distance from anal canal after repair (mm) ^a	20 (12 – 45)	30 (15 – 65)	0.02

Most deliveries done by doctors were instrumental deliveries and this is an important confounding factor. A further analysis of data collected on midwives alone is shown in Table 3.

Table 3: Correlation between episiotomy and anal sphincter injury in midwifery deliveries

	Anal sphincter injury (n=15)	No anal sphincter injury (n=25)	P value
Depth (mm) ^a	50 (25 – 85)	45 (20 – 90)	0.216
Length after repair (mm) ^a	45 (20 – 50)	40 (35 – 55)	0.041
Angle after repair (degrees) ^a	19.5 (14.5 – 38.7)	21.1 (12.8 – 26.4)	0.164
Distance from anal canal after repair (mm) ^a	40 (20 – 50)	45 (35 – 55)	0.05

^a results given as median and range and analysed by Mann Whitney U test

Interpretation of results

This is the first study to objectively demonstrate that episiotomies that are angled further away from the midline significantly reduce anal sphincter injury. By definition none of the episiotomies performed by a midwife was actually mediolateral and in addition one third of intended mediolateral episiotomies by midwives were in fact midline. Only 22% of episiotomies performed by doctors were mediolateral.

We have demonstrated that the closer the episiotomy to the anal canal the greater the risk of anal sphincter injury. The high prevalence of anal sphincter injury in this series can therefore be explained by the fact that most of the episiotomies were not truly mediolateral as intended.

Concluding message

Episiotomies that are not truly mediolateral are significantly associated with anal sphincter injury. We have demonstrated that although the majority of doctors and midwives intend to perform mediolateral episiotomies the episiotomies are actually closer to the midline.

More focused training is required to improve episiotomy technique in order to minimise anal sphincter injury and consequent morbidity.

References

1. Episiotomy for vaginal birth (Cochrane Review). The Cochrane Library, Issue 2 Oxford: Update Software, 2001.
2. Obstetric procedures. In Obstetrics by Ten Teachers. London: Arnold, 1995: 285-303.
3. Differences in episiotomy technique between midwives and doctors. BJOG 2003;110:1041-1044.