Episiotomy: who gets one and why

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SUMMARY. Data was collected about the mother, the infant and the pregnancy in women who had an episiotomy performed at delivery, and those who did not, in one district hospital and two community hospitals. Factors predisposing mothers to episiotomy were sought and compared in the different hospitals. Traditional indications for episiotomy, such as a large baby and a small mother, were found to be less important than the occurrence of fetal distress, prolongation of the second stage of labour and the presence of pupil midwives at delivery. Current practice in the use of episiotomy is discussed.

Introduction

EPISIOTOMY is an elective surgical procedure, performed in the second stage of labour, which divides the tissues of the perineum in order to enlarge the vaginal outlet and facilitate delivery of the baby. Today, episiotomy is widely used, with an incidence varying between 30 and 70 per cent of all deliveries.[1] The subject of episiotomy has generated much interest recently, and a series of essays published by the National Childbirth Trust,[1] together with recent studies by Kitzinger and Walters,[2] has focused attention on, and questioned, the value of this procedure which has become routine on the basis of assumption rather than evaluation.

A reassessment of the place of episiotomy in obstetric practice requires a knowledge of how it is used at present. This study investigated the use of episiotomy in the hospitals of one health district. The aim was to identify characteristics of the mother, the infant or the pregnancy and labour which influences the use of episiotomy, by comparing mothers who had an episiotomy with those who did not.

Method

The hospitals

Three hospitals were involved in the study: a district hospital with 62 maternity beds and an 18-room delivery suite performing 2,500 deliveries annually; and two community hospitals with 12 and 27 maternity beds respectively, performing 300 and 750 deliveries annually. These two units are run by local general practitioners and are used for selected deliveries which are expected to be uncomplicated.

The patients

The patients included in the study were divided into two groups: first, those who had had a normal delivery with the maintenance of an intact perineum and, second, those whose deliveries were facilitated by an episiotomy.

All the patients who had episiotomies performed in the course of instrumental deliveries were excluded from the study, as were patients who sustained tears of the perineum during delivery.

The questionnaire

Information on each patient included in the study was collected through a questionnaire completed by the midwife attending the delivery. The details recorded were: the mother's age, height, weight, shoe size and parity; the baby's weight, length and head circumference; the number of weeks gestation and the occurrence of any antenatal complications; whether the labour was induced, any complications of labour, whether a previous episiotomy had been performed, the duration of each of the three stages of labour; the person delivering the baby and other persons present at the time of delivery.

The completed data were extracted from the questionnaires and analysed for mean and standard deviation where appropriate. A chi-square test was used to assess significance in difference of distribution between groups. Student's t-test was used to compare weight, length and time variables. A value of $P < 0.05$ was regarded as significant.

Results

A total of 260 patients were included in this study: 170 patients in the district hospital (102 of whom had had episiotomies) and 90 patients in the community hospitals (40 of whom had had episiotomies).

District obstetric hospital

There was no significant difference in age between women who received an episiotomy and those who did not, nor in height, weight or shoe size of the mothers in the two groups (Table 1). There was a significant difference in parity between the two groups of mothers, the episiotomy group having a higher number of nulliparous mothers (54 per cent compared with 24 per cent of controls; $P < 0.01$) (Table 1).

There was no significant difference in weight, length or head circumference of the babies at birth in the two groups (Table 2).

The number of weeks gestation and the occurrence of antenatal complications were similar in the two groups.

The rates of induction of labour were not different between the two groups, but there was a higher incidence of complications during labour in the episiotomy group when compared with the control group (38 per cent compared with 22 per cent) (Table 3). A complication was defined as the occurrence of fetal distress, maternal problems requiring medical intervention or the occurrence of delay in the second stage of labour. There was a difference between the groups in the length of the second stage of labour, with the episiotomy group having a longer second stage than the controls (mean time of episiotomy group: 39.9 ± 32.0 min; for controls: 22.7 ± 18.0 min; $P < 0.01$) (Table 3).

Delivery of the baby could be either by a qualified midwife or pupil midwife. It was found that a pupil midwife performed the delivery in more cases in the group requiring episiotomy than in the controls (27 per cent compared with 10 per cent) (Table 3). The presence of other persons in the room at the time of delivery was also recorded. A doctor was present at the delivery more often in cases where an episiotomy was performed (41 per cent compared with 20 per cent). A pupil midwife was present at delivery more frequently in the case of episiotomy patient than a control (46 per cent compared with 29 per cent) (Table 3).

Community hospitals

There was no difference in the ages of women in the two groups (mean age of episiotomy group, 25.0 ± 4.2 years; controls, 25.6 ± 5.3 years), nor in height, weight or shoe size. There was a difference in parity between the groups, with a higher number of nulliparous mothers in the episiotomy group than in the control group (54 per cent compared with 23 per cent; $P < 0.01$) (Table 1).

The average weight of babies born to mothers who had episiotomies performed was greater than those born to mothers who maintained an intact perineum, but not significantly so (mean weight in episiotomy group, 3.52 ± 0.47 kg; control group, 3.23 ± 0.49 kg) (Table 2). In the

Table 1. Characteristics of mothers receiving episiotomy compared with controls. (Mean values ± SEM)

	Weight (kg)	Height (inches)	Age (years)	Number of nulliparas (%)
District hospital				
Episiotomy group (n=102)	66.6±9.6	64.1±2.1	27.0±6.0	55 *(54)*
Control group (n = 68)	69.6±8.0	64.0±2.1	27.0±6.0	54 *(22)*
Significance	NS	NS	NS	$P < 0.01$
Community hospitals				
Episiotomy group (n = 40)	68.2±9.0	63.3±2.2	25.0±4.0	22 *(54)*
Control group (n = 50)	70.0±8.2	64.6±1.9	26.0±5.0	12 *(23)*
Significance	NS	NS	NS	$P < 0.01$

NS = not significant

Table 2. Characteristics of babies of mothers receiving episiotomy compared with babies of control mothers. (Mean values ± SEM)

	Weight (kg)	Length (cm)	Head circumference (cm)
District hospital			
Episiotomy group (n = 102)	3.3 ± 0.6	54.5 ± 3.4	35.0 ± 1.6
Control group (n = 68)	3.2 ± 0.6	53.5 ± 3.3	34.7 ± 1.6
Significance	NS	NS	NS
Community hospitals			
Episiotomy group (n = 40)	3.5 ± 0.5	53.5 ± 3.8	35.0 ± 1.3
Control group (n = 50)	3.2 ± 0.5	53.2 ± 2.9	34.5 ± 1.4
Significance	NS	NS	NS

NS = not significant

Table 3. Characteristics of labour of mothers receiving an episiotomy compared with control mothers: length of each stage of labour, number of complications (% group) and number of pupil midwife attendances

	Duration of labour (mean ± SEM)			Complications	Pupil midwife attendance	
	First stage (h)	Second stage (min)	Third stage (min)		Helped with delivery	Present only
District hospital						
Episiotomy group (n = 102)	7.6 ± 2.4	39.9 ± 32.0	5.6 ± 1.8	39 *(38)*	28 *(27)*	47 *(46)*
Control group (n = 68)	5.9 ± 2.7	22.7 ± 17.9	6.1 ± 2.7	15 *(22)*	7 *(27)*	20 *(24)*
Significance	NS	$P < 0.01$	NS	$P < 0.01$	NS	NS
Community hospitals						
Episiotomy group (n = 40)	7.4 ± 3.0	41.8 ± 30.0	5.8 ± 1.2	6 *(15)*	—	—
Control group (n = 50)	6.0 ± 3.0	20.4 ± 16.3	6.0 ± 1.7	5 *(10)*	—	—
Significance	NS	$P < 0.01$	NS	$P < 0.01$		

NS = not significant

two groups there was no difference in head circumference or length of babies at birth.

The episiotomy group contained more mothers whose pregnancy had continued past term than the control group (45 per cent compared with 28 per cent), but there was no difference in numbers of antenatal complications of any kind between the two groups.

There was no difference in the number of complications during labour between the two groups, other than the duration of the second stage of labour, which was longer in the episiotomy group than in controls (mean duration in episiotomy group, 41.8 ± 30.0 min control group, 20.4 ± 30.0 min; $P < 0.01$) (Table 3).

Comparison between community and district hospitals

The overall episiotomy rate for all deliveries during the period of the study was 39 per cent for the district hospital and 21 per cent for the community hospital. The number of deliveries started by induction was higher in the district hospital than the community hospital (23 per cent compared with 16 per cent). These variations may be due to the differences in the populations served by the two types of hospital, but no direct statistical comparisons have been made (Table 4).

Table 4. Comparison of rates of episiotomy and induction of labour between community and district hospitals

	District hospital	(%)	Community hospital	(%)
Episiotomies	102	*(39)*	40	*(21)*
Inductions	60	*(23)*	30	*(16)*
Total deliveries	261		190	

Discussion

Community and district hospitals were used for the collection of data in this study as they represent the two types of obstetric care available in hospitals in the health district studied. In both types of obstetric unit the traditional indications — that is, the height and weight of the mother and the length, weight and head circumference of the baby — were not significant factors in differentiating between mothers who did or did not receive an episiotomy. The results of the study support the view that the factors influencing the use of episiotomy may be different in a district general hospital than in a community hospital.

In the community hospital studied, the incidence of complications antenatally or during labour was no greater for mothers who received an episiotomy than for those who did not, but the second stage of labour was longer. In the district hospital there was a higher incidence of complications during labour, such as fetal or maternal distress or delay in the second stage of labour. In considering these differences it must be remembered that patients who are selected for confinement in a community hospital are expected to have an uncomplicated labour and delivery; the maternity unit of a district hospital, however, comprises patients living in the catchment area of the hospital plus patients living in the health district served by the hospital who have risk factors associated with their pregnancy which make it advisable that delivery should take place in a hospital with the facilities to deal with an obstetric emergency.

In view of these differences between the two groups of women it is perhaps not surprising that the incidence of episiotomy in the period of the study in the district hospital was almost twice as high as that in the community hospitals. The number of inductions occurring in the two types of hospital was influenced by the same factors.

A further consideration might be the status of the person supervising the delivery. The district hospital used in the study has a midwifery school, and a pupil midwife assisted or was present at delivery more often in those women who received an episiotomy. There could be several explanations for this but it is possible that episiotomy is performed more frequently at those deliveries attended by a midwife in training, either in the course of teaching or because of a lower threshold for intervention among pupils. Community hospitals are supervised by general practitioners, and the availability of a doctor in this setting is obviously lower.

There have been calls for a rationalization of the use of episiotomy and for more clinical research by the medical and midwifery professions.[3,4] Other investigations have concentrated on the technical aspects of episiotomy,[5] and post-episiotomy pain has also been investigated.[6,7] It was felt that an assessment of the current use of episiotomy and of the characteristics of women who have one was needed before any changes in practice could be considered. No previously published studies have investigated episiotomy in this way.

No study of this kind can comment on whether any single episiotomy is indicated, as this is an individual decision for the person supervising the delivery. However, the results of this study form a record of current obstetric practice regarding episiotomy in one health district and help to evaluate the importance of those clinical features and factors in which predispose to the use of an episiotomy at delivery.

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Effects of propranolol on myocardial-infarct size

A multicentre randomized single-blind study was performed to evaluate the effects of propranolol administered during the evolution of myocardial infarction. Five centres enrolled a total of 269 patients, with 134 receiving propranolol and 135 placebo. Propranolol or placebo was given intravenously upon randomization (0.1 mg per kilogram of body weight) and then orally for nine days to keep the heart rate between 45 and 60 beats per minute. Less than 2 per cent of patients were treated within 4 hours after the onset of symptoms, but 50 per cent received therapy within 8 hours of onset of chest pain, and the remainder between 8 and 18 hours. The heart rates in the propranolol-treated group were significantly lower than those in the placebo group ($P<0.001$). Base-line characteristics, including the mean heart rate (79.6 vs. 81.3) and the left ventricular ejection fraction (49.0 vs. 49.5), were similar in the two groups. The primary end point evaluated—infarct size as estimated from plasma MB creatine kinase activity—was virtually identical in the two groups, averaging 13.3 and 13.6 gram-equivalents of MB creatine kinase per square meter of body-surface area. Peak plasma levels of the enzyme were also similar in the two groups. No significant difference was observed between the propranolol and placebo groups in the change in left ventricular ejection fraction, extent of area involved in pyrophosphate uptake, R-wave loss on electrocardiograms, or mortality (after three years). These results do not support the use of propranolol administered four or more hours after the onset of symptoms to limit infarct size.

Source: Roberts R, Croft C, Gold HK, *et al.* Effect of propranolol on myocardial-infarct size in a randomized blinded multicentre trial. *N Engl J Med* 1984; **311:** 218-225.

Post-viral exhaustion

A small number of patients complain that they never recover from the exhaustion and fatigue associated with a viral illness. In this study, a patient with prolonged post-viral exhaustion and excessive fatigue was examined by ^{31}P nuclear magnetic resonance. During exercise, muscles of the forearm demonstrated abnormally early intracellular acidosis for the exercise performed. This was out of proportion to the associated changes in high-energy phosphates. This may represent excessive lactic acid formation resulting from a disorder of metabolic regulation. The metabolic abnormality in this patient could not have been demonstrated by traditional diagnostic techniques.

Source: Arnold DL, Bore PJ, Radda GK, *et al.* Excessive intracellular acidosis of skeletal muscle on exercise in a patient with a post-viral exhaustion/fatigue syndrome. A ^{31}P nuclear magnetic resonance study. *Lancet* 1984; **1:** 1367-1369.