

# Classification of episiotomy: towards a standardisation of terminology

V Kalis,<sup>a</sup> K Laine,<sup>b</sup> JW de Leeuw,<sup>c</sup> KM Ismail,<sup>d</sup> DG Tincello<sup>e</sup>

<sup>a</sup> Department of Obstetrics and Gynaecology, University Hospital, Charles University, Pilsen, Czech Republic <sup>b</sup> Department of Obstetrics, Oslo University Hospital, Ullevål, Oslo, Norway <sup>c</sup> Department of Obstetrics and Gynaecology, Ikazia Hospital, Rotterdam, the Netherlands <sup>d</sup> School of Clinical and Experimental Medicine, College of Medical and Dental Sciences, University of Birmingham, Birmingham, UK <sup>e</sup> Reproductive Sciences Section, Cancer Studies and Molecular Medicine, University of Leicester, Leicester, UK

*Correspondence:* DG Tincello, Reproductive Science Section, Cancer Studies and Molecular Medicine, RKCSB, University of Leicester, Leicester Royal Infirmary, PO Box 65, Leicester LE2 7LX, UK. Email dgt4@le.ac.uk

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Seven episiotomy incisions are described in the literature, although only midline, mediolateral or lateral episiotomies are commonly used. Recent research has demonstrated variations in both site and direction of the incision, and differences between the angle of incision at the time of crowning of the fetal head and the angle of the scar once the wound has been repaired. We

review this evidence and suggest that this variation may undermine the reliability of much published work. We suggest a standardised definition of each type of episiotomy to establish uniformity going forward, so that future studies are amenable to comparison and meta-analysis.

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## Introduction

Episiotomy is a surgical enlargement of the vaginal orifice by an incision to the perineum during the last part of the second stage of labour or delivery.<sup>1,2</sup> The standard obstetric and mid-wifery texts usually describe only two main types of episiotomy (median and mediolateral),<sup>1,3–5</sup> although seven different incisions have been described in the literature. Episiotomy is poorly defined in research literature. In this article we analyse each type of episiotomy, and propose an inclusive, standardised classification to be used in future research.

It is clear that much evidence exists supporting a restricted policy for episiotomy and we do not intend to suggest that episiotomy should be routinely performed. We are concerned only with ensuring that published research is of the highest quality to inform the decision making when episiotomy is necessary, to achieve optimum outcomes for mother and infant, without any adverse risk of perineal or anal sphincter injury.

## Search strategy and selection criteria

Papers and text books included in this review were identified by searches of PubMed, the Cochrane Collaboration and internet searches with the Google search engine (particularly to

identify text books). Search terms and keywords included median, midline, mediolateral, lateral, 'J'-shaped, radical lateral, anterior episiotomy, Schuchardt incision, types of episiotomy, classification, angle of episiotomy, as well as phrases to identify texts (particularly books) which described any type of episiotomy with a description of the technique. The University Library from the first author's institution assisted in obtaining references and relevant book chapters.

## Classification of episiotomy

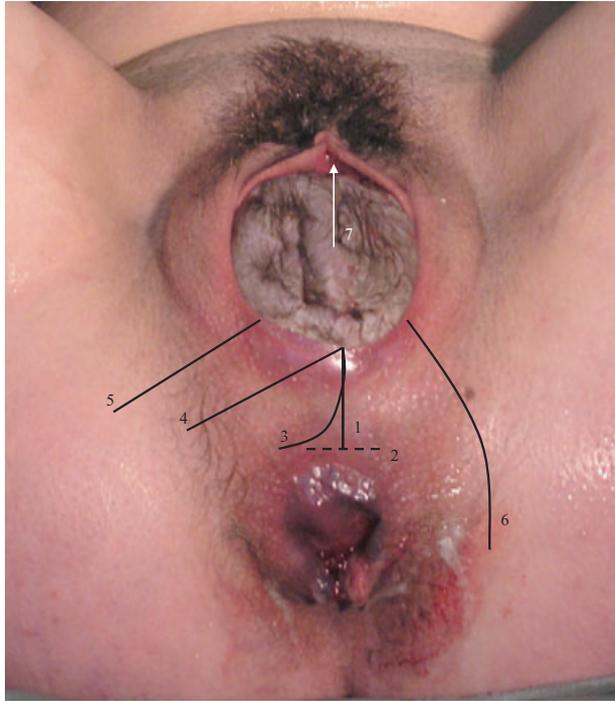
For reference, see Supplementary material, Table S1 and Figure 1.

### Median (midline, medial) episiotomy

Median episiotomy begins at the posterior fourchette and runs along the midline through the central tendon of the perineal body.<sup>3–9</sup> The extension of the incision should be roughly half of the length of the perineum.<sup>8</sup> This type of episiotomy is commonly used in the USA and Canada.

### Modified median episiotomy

A modification of median episiotomy is performed by adding two transverse incisions in opposite directions just above the expected location of the anal sphincter.<sup>10</sup> The



**Figure 1.** Types of episiotomy. 1: median episiotomy, 2: modified median episiotomy, 3: 'J'-shaped episiotomy, 4: mediolateral episiotomy, 5: lateral episiotomy, 6: radical lateral (Schuchardt incision), 7: anterior episiotomy (white arrow). There are currently no international standards as to whether episiotomy ought to be incised on the right or the left side (median episiotomy excluded). This picture serves for a comparison of the locations of different types of episiotomy. The right side for the 'J'-shaped, mediolateral and lateral episiotomies and the left side for radical lateral episiotomy were simply chosen at random.

transverse incision is performed on each side, perpendicular to the midline, so that it measures 2.5 cm in total.<sup>10</sup> The use of this modification is claimed to increase the diameter of the vaginal outlet by 83% compared with a standard median episiotomy,<sup>10</sup> possibly by separation of both perineal membrane/sphincter attachments, and so allows true posterior displacement of the anus with no risk of any resultant traction injury.<sup>11</sup>

### 'J'-shaped episiotomy

This episiotomy commences with a midline incision and is then curved laterally to avoid the anus.<sup>12,13</sup> In this technique curved scissors are used starting in the midline of the vagina until the incision is 2.5 cm from the anus. Then the 'J' is made by directing the incision towards the ischial tuberosity away from the anal sphincter.<sup>12</sup>

### Mediolateral episiotomy

This is the most frequently used type of episiotomy in Europe. The exact definition is often unclear (see below) although according to internationally acknowledged

obstetric texts it is defined as an incision beginning in the midline and directed laterally and downwards away from the rectum.<sup>2,3</sup>

### Lateral episiotomy

This type of episiotomy was first described in 1850. It begins in the vaginal introitus 1 or 2 cm lateral to the midline and is directed downwards towards the ischial tuberosity.<sup>6,7,14,15</sup> Lateral episiotomy is mentioned very rarely in the obstetric literature.<sup>3,9,12,16–18</sup>

### Radical lateral (Schuchardt incision)

Radical lateral episiotomy is often considered to be a non-obstetrical incision. It is a fully extended episiotomy, which carries deep into one vaginal sulcus and is curved downward and laterally part way around the rectum.<sup>19</sup> It may be performed at the beginning of radical vaginal hysterectomy or trachelectomy to permit easy access to the parametrium,<sup>20–22</sup> to enable extraction of a neglected vaginal pessary<sup>23</sup> or, very occasionally, to facilitate childbirth in complicated deliveries (large head, difficult breech or for correction of shoulder dystocia).<sup>7,9,19</sup>

### Anterior episiotomy

The anterior episiotomy or deinfibulation (the procedure of opening the scar associated with some degrees of female genital mutilation) is usually performed during delivery on women who have had female infibulation performed previously.<sup>8,24</sup> The practitioner's finger is inserted through the introitus and directed towards the pubis. To free the scar, fused labia minora are incised in the midline until the external urethral meatus can be seen and the anterior flap is completely open.<sup>25</sup> The clitoral remnants should not be incised. Another type of episiotomy (preferably mediolateral) may be required during delivery.

### Evidence

Even in the recent Cochrane review of episiotomy, an exact classification or definition of episiotomies is lacking,<sup>1</sup> and the individual studies included in the Cochrane Review are variable and lacking in specific details (see Supplementary material, Table S1). Furthermore, the descriptions of mediolateral episiotomy in standard obstetric textbooks differ widely (see Supplementary material, Table S2). Some provide only descriptive terms, whereas others recommend a particular angle of incision away from the midline, most usually 45°. It is possible to calculate the likely angle of incision from the descriptions in other texts; these vary between 31° and 63°,<sup>26,27</sup> suggesting the potential for wide variation in the practice of episiotomy worldwide.

There is emerging evidence that the angle of the episiotomy does indeed affect the risk of obstetric anal sphincter

injury (OASIS),<sup>28,29</sup> together with the finding of a wide variation in the actual angle of incision made by accoucheurs<sup>28,30–32</sup> or institutions<sup>31–33</sup> when they report using mediolateral episiotomy, measured during and after delivery.

Observational studies have shown that one-third of UK professionals began the episiotomy lateral to the midline<sup>30</sup> and that in Europe the definition of mediolateral episiotomy in 7% of institutions stated that the beginning was located 1 or 2 cm from the midline.<sup>33</sup> Such a lateral origin of incision could be regarded as a true lateral episiotomy. Lateral episiotomy is a method generally used in Finland<sup>34–36</sup> and is used as much as mediolateral episiotomy in Greece.<sup>37</sup>

Based on the observational data above, we have recently suggested that an incision angle of episiotomy of 60° is suitable for the implementation of a large randomised controlled trial comparing different types and positions of episiotomy and we would also suggest that this angle could be proposed as part of a definition of mediolateral episiotomy.<sup>29</sup>

However, it has to be recognised that much of the literature is obtained from case–control studies,<sup>28</sup> observational studies,<sup>27,29–33,37,38</sup> and retrospective population-based register studies.<sup>34–36</sup> There are no randomised trials comparing alternative methods, or positions of episiotomy in the literature, and so the literature available consists of level 2b or level 3 evidence.<sup>39</sup> Level 1 evidence from randomised trials is needed, but to ensure that this evidence is robust and reliable, there needs to be standardisation of the practice and reporting of the episiotomy incision.

## Recommendations

There is a need to standardise the practice of mediolateral episiotomy, both to inform practice in those specific situa-

tions where it is clearly clinically indicated, but also particularly in the context of future research into the risks and benefits of episiotomy with respect to major perineal trauma. We now propose a standardised classification system in terms of the origin of the incision, the direction (e.g. the angle of the cut in the case of mediolateral episiotomy), and the length, based upon current research evidence (Table 1). If adopted, this definition system could be adopted in a manner similar to the CONSORT statement for randomised trials,<sup>40</sup> where explicit reference to the type of incision would be an essential requirement for reporting any primary or secondary research relating to episiotomy.

## Conclusion

Standard textbooks contain different and imprecise definitions of what a mediolateral episiotomy is. Moreover, they rarely make reference to alternative types of episiotomy. Most published research has concentrated on mediolateral episiotomy, albeit with a lack of consistency and methodological rigour in the description of the incision actually used.

Recent research has established that the angle of episiotomy is an important determinant of the risk of OASIS, and more importantly, there are differences between the angle at which the incision is made during crowning of the head (when the perineum is stretched), and the angle of the surgical wound once the infant has been delivered. Evidence suggests that correct execution of the episiotomy incision can have significant implications on the degree of perineal trauma. The results of studies evaluating whether mediolateral episiotomy increases or reduces the risk of OASIS have conflicting results,<sup>41,42</sup> which we suggest could be because of variation in the actual position of a suboptimal incision.<sup>31</sup>

**Table 1.** Types and characteristics of episiotomies

Type of episiotomy	Origin of the initial incision	Direction of the cut
Median (midline)	Within 3 mm of the midline in the posterior fourchette	Between 0° and 25° of the sagittal plane
Modified median	Within 3 mm of the midline in the posterior fourchette	Between 0° and 25° of the sagittal plane, with two transverse cuts on each side added
'J' shaped	Within 3 mm of the midline in the posterior fourchette	At first midline, then 'J' is directed towards the ischial tuberosity
Mediolateral	Within 3 mm of the midline in the posterior fourchette	Directed laterally at an angle of at least 60° from the midline towards the ischial tuberosity
Lateral	More than 10 mm from the midline in the posterior fourchette	Laterally towards the ischial tuberosity
Radical lateral (Schuchardt incision)	More than 10 mm from the midline	Laterally towards the ischial tuberosity and around the rectum
Anterior	Midline	Midline, directed towards the pubis

Standardisation of the description of episiotomy in intervention studies will facilitate the next phase of research into the benefits and risks of this frequently performed, yet still poorly understood, obstetric procedure. Achieving consensus among clinicians with regard to the classification of the different types of episiotomy is crucial if a proper evaluation of this surgical procedure is to be made, along with its alleged benefits, possible side effects and impact on pelvic floor function. Moreover, standardisation of the surgical incision will enable data pooling (for meta-analyses) by reducing the heterogeneity between studies.

### Disclosure of interest

None to declare.

### Contributions to authorship

VK conceived the manuscript, wrote the first draft and performed the literature search. KL, JWdL, KMI and DGT edited the draft and contributed to revisions and to the final manuscript.

### Details of ethics approval

No formal ethical approval was required for this review.

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## Supporting Information

Additional Supporting Information may be found in the online version of this article:

**Table S1.** Description of mediolateral episiotomy in studies and trials included in the Cochrane database. Reprinted with permission of Sociedad Iberoamericana de Informacion Cientifica (SIIC).

**Table S2.** Description of mediolateral episiotomy presented in textbooks, reviews and clinical guidelines.

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