

# Red flags for episiotomy in a midwife-led birth: Using co-production with midwives to capture clinical experience.

## Abstract

**Background:** One of four key points in the Obstetric Anal Sphincter Injury Care Bundle, first piloted in the UK in 2016, was the directive to perform episiotomy when clinically indicated. Midwives are the primary health care professional for straightforward births in the UK and there is very little published literature that relates to their practice in this area.

**Aim:** The aim of the study was to explore experienced midwives' decision-making processes in their assessments for episiotomy during birth.

**Methods:** 43 midwives self-identifying as confident in performing episiotomy were sampled across 8 NHS Trusts in England and Wales. Data collection was via online focus groups and 1:1 interviews. Primary thematic analysis was undertaken by the research team. Preliminary themes were used to structure a co-production analysis workshop where eight experienced midwives undertook a secondary analysis of the data resulting in four overall themes.

**Findings:** Four themes were identified, 'Optimising Perineal Function', 'Red Flags to Stimulate Decision-Making', 'The Midwives' Episiotomy' and 'Infiltration as a Catalyst for Birth'.

**Discussion:** Midwives use a number of visual, auditory and touch cues to inform their assessments for episiotomy during birth.

**Conclusion:** This study provides valuable insight into the cues that guide experienced midwives' decision-making in relation to episiotomy and contributes evidence related to performing episiotomy when clinically indicated in spontaneous vaginal birth.

## Statement of Significance

Problem or Issue	Rollout of the RCOG OASI care bundle to reduce severe perineal trauma, is underway in the UK. 'Episiotomy when indicated' is one of the four elements included in the bundle.
What is Already Known	Selective rather than routine use of episiotomy improves perineal outcomes.
What this Paper Adds	This study provides insight into the decision-making of experienced midwives in relation to the use of selective episiotomy.

**Key Words:** EPISIOTOMY, PERINEUM, MIDWIFERY, EDUCATION, BIRTH, DECISION-MAKING

## Background

The Obstetric Anal Sphincter Injury Care Bundle (OASI CB), designed to reduce the incidence of OASI was first piloted in 2016 in two UK maternity units before expanding to 16 sites by 2018. Supported by the Royal College of Midwives and the Royal College of Obstetricians and Gynaecologists in the UK, it comprises four elements: discussion of the risks of OASI antenatally, use of manual perineal

protection in labour, episiotomy if clinically indicated, and perineal and rectal examination carried out after all vaginal births (1).

In the initial care bundle evaluation, there was widespread recognition of a de-skilling in the midwifery workforce around episiotomy and perineal management in the second stage (2). A later evaluation by Jurczuk et al (3) reported a similar gap in perineal management skills, alongside resistance to change among staff and an enduring reluctance to discuss perineal trauma with women in the antenatal period. A national survey of UK midwifery students by Webb et al (4) confirmed a deficit in the current training practices for midwives regarding episiotomies. This finding was reflected in a study of qualified midwives, who reported a lack of confidence in the recognition of warning signs and associated decision-making on when to perform the 'clinically indicated' episiotomy (5).

Clinical judgement is considered to sit at the bottom of the quality hierarchy of evidence (6). However, this is currently the only resource offered to practitioners in the OASI CB, when advised to assess for episiotomy to prevent severe perineal trauma. To access high-quality clinical judgement, midwives describe calling in an available senior colleague during a birth. Their own judgement is thus developed over time through the recognition of patterns, knowledge of physiology, development of experience, continuous critical reflection and analysis (7, 8). This study aimed to capture the expert knowledge that informs clinical judgement in episiotomy decision making to share as a resource for less confident practitioners. This will support the development of learning and retention of episiotomy as a valuable tool for midwives supporting births (9).

## Methods

This study was designed to examine experienced midwives' decision-making processes in their assessment for an episiotomy during a midwife-led birth. We sampled midwives across 8 NHS Trusts in England who self-identified as confident in assessment for episiotomy. Data was collected through focus group discussions and one to one interviews, conducted virtually online and by telephone. Audio recordings were transcribed verbatim, checked by an independent researcher against the original recording and loaded into NVIVO 10, the data analysis software.

The core research team (JM, JG, SW) independently coded the transcripts. These codes were then organised and refined into categories before interpretation into themes. These were used to plan and structure a co-production session exploring perineal support practices and red flags that stimulate episiotomy decision-making. A link midwife from each participating Trust, who had supported recruitment but not contributed to the data collection, attended the co-production session to co-analyse the data and contribute their clinical perspectives (10). The 8 participants were given de-identified transcripts and coached in the method of qualitative content analysis. They looked at word frequency counts to expose the indicators or 'red flags' for episiotomy described by participants. These words of interest were compared in their host sentence to explore their linguistic environment (Key Words In Context) (11). This allowed examination of different uses of the words and formulation of meanings from the focus group participants. Participants worked creatively in small groups to code the transcripts and record their findings visually with the help of a narrative artist facilitator (CB).

The use of visual methods, primarily collaging, supported the analysis process as the team worked with concepts that had not been clearly defined in their training or in the literature but were understood visually across the co-analysis team. Participants reported that working in this way

allowed them to detach from the complexity of the practice environment and focus on the data. Each group presented their visualised findings via collage boards. The narrative artist supported the midwives to bring together their findings (figure 1, collage file). We then discussed the findings, constructing the data through linking, explaining, exploring and prioritising from their clinical perspectives and experiences to co-produce the findings together (12). These findings expanded and enhanced the preliminary thematic analysis of the core team.

## Results

We interviewed 43 midwives across 8 NHS Trusts self-identifying as confident in their assessment for episiotomy. An additional 8 midwives contributed their experience in the co-production workshop. Midwives were qualified from between 2 and 38 years with an average of 15 years post registration. Participant roles ranged from community, caseloading and birthcentre midwives to core labour ward midwives, rotational roles, co-ordinators and the practice development team. Interviews lasted from 13-69 minutes with an average of 39 minutes.

The co-production analysis constructed four themes to capture the process of decision making among midwives for performing an episiotomy: optimising perineal function, red flags to inform decision making, the midwives episiotomy and infiltration as a catalyst for birth

### Optimising Perineal Function

Decision making for episiotomy could not be viewed in isolation from activities and practices midwives enlist to optimise the physiology of birth (Figure 2). Perineal management was described as linked with a trusting relationship and the birth environment to maximise the 'oxytocin in the room'. This context, coupled with midwifery skills working with the woman and her partner in birth emphasise control, movement and time to allow the perineum to stretch. While these techniques are not a guarantee to minimise perineal trauma, participants advocated their use as positive contributors to the birth.

- Active, Upright Labour
- Spontaneous pushing
- Accurate fetal heart monitoring
- Warm compress
- Slow birth of the head
- For births on the bed, consider left lateral position to relieve pressure on the perineum between contractions

Figure 2: Activities to optimise the physiology of birth

Active, upright labour was strongly advocated to support the progress of the fetus through the pelvis to birth. Several participants identified this as reducing the need for episiotomy.

"we do put things in place like, the biomechanics and different positions and our women are upright and are on all fours and are in the pool and all these are factors that will likely prevent the need to do an episiotomy anyway" EP29

If progress was felt to slow in second stage, a change of position was often the first recommendation of participants.

“with a really slow delivery you would suggest ... a position change would do the trick” EP19

“One woman I really thought, the vertex was just sitting there and so I changed position and suddenly the baby shot out and she had an intact perineum but I had my scissors poised thinking the baby has just sat there for too long” EP33

A change of position and preference for the left lateral position (for women labouring on a bed) were described as relieving the pressure on the perineum between contractions to allow the perineum to stretch. The support of spontaneous pushing with a contraction was informed by this rationale of giving the perineum time to stretch – with the constant caveat that the fetal heart rate was stable and not a cause of concern.

“...if the heart rate is normal I will wait...the fact the baby has spent a long time sitting on the perineum has actually helped stretch everything” EP02

“If you have got a happy baby then I think you have got time.”EP32

“I think it’s actually important to respect the physiological instinct of the woman to push only when she feels like it, because otherwise, the perineum needs I think, it just needs to happen a bit slower, like for the tissue to . . . and if you don’t do that ... I guess it forces things for the perineum.” EP24

One experienced participant mentioned the use of left lateral position and spontaneous pushing as a potential approach for women birthing with epidural analgesia to relieve pressure on the perineum. While resting in left lateral may help reduce oedema in the perineum, there is unfortunately a risk of the epidural pain relief becoming patchy. This underlines the individual assessment required of each labour as woman’s responses differ.

“if there was no concern about fetal wellbeing then my general response would be, “Stop all this pushing” malarky, preferably get off your bum, generally left lateral and leave well alone for twenty minutes/half an hour, see what’s going on with the perineum, try and let the oedema disperse a bit and try and stay out of semi-recumbent for the birth itself” EP28

Participants were strong advocates of warm compresses on the perineum as comforting for the woman and to maintain blood flow to the perineum as it stretches. This was in complement to slow birth of the fetal head between contractions, maximising the opportunity for the perineum to stretch slowly. The control needed to breathe the baby out slowly signified the midwife and woman working together and was felt to minimise perineal trauma.

“I would be much more likely to do ... left lateral position, warm compresses on the perineum, probably be hands on and really try and slow down the head, get them to stop pushing, that sort of thing.” EP02

This partnership working could be a challenge if interpreter support was needed.

“...we had a non-English first language and she did have a third degree tear because the communication was very difficult around pushing” EP41

If any concerns regarding the perineum were identified (see ‘Red Flags’ theme below) , it is at the point of crowning that infiltration with local anaesthetic was performed in preparation for the episiotomy.

“...we did an infiltration because we heard, we started to hear some prolonged decels, but still we weren’t as concerned for the baby to want to do the episiotomy. But then we knew then that if we had to do it, we wanted to be able to do it quickly.” EP24

All participants reflected on the unique abilities of the perineum to respond to labour and felt relieved that safe birth had been achieved with or without an episiotomy.

### **Red flags to stimulate decision making**

Participants agreed that a holistic assessment is necessary to inform decision-making and separating warning signs into maternal or fetal signs is unrealistic. Several participants described the two as being interlinked, ie. fetal distress, such as prolonged bradycardia often occurs when there is a thick, rigid perineum or a tight band of tissue that appears to hold up the progression and birth of the baby’s head. When considering episiotomy, participants were clear that the presenting part (and not caput) must be at the point of crowning.

“it has to be on the perineum...So making sure the head is low enough so when you do the episiotomy it is going to be all you need and it’s not just you’ve cut into muscle and it’s not stretched enough and it’s not going to do what it’s meant to do.” EP03

Participants were confident to do an episiotomy in a case of fetal distress. Fetal distress, prolonged bradycardia in particular, was felt to be easily diagnosed and waiting for the 2 or 3 contractions or 10 minutes to birth was felt to be a clinical risk, recommending immediate birth.

“I’ve done one or two because of fetal distress and listening to the FH it was horrendous and I thought the 5 minutes we might get it quicker were well worth having. I’ve had one or two like that. Its advanced enough that you know that the epis is going to make a difference and you can hear that fetal heart struggling” EP15

Participants described fetal heart recovery to prompt a look for other concerning signs which were separated into delay and perineal integrity. Delay was defined in the co-analysis as *no* progress rather than *slow* progress, emphasising the role of patience if the fetal heart is stable.

“If the presenting part is moving...then I’m going to let it move by itself” EP32

If there was a halt in progress, participants described assessing the perineum for signs it may be impeding the progress of the fetus to birth. The principal warning signs were ‘banding’, ‘blanching’ and a thick/rigid perineum that is not stretching. Not acting on these warning signs could impact perineal integrity.

### *Fetal progress - Banding*

The concept of banding was observed by half the participants. It was felt to impede progress of the birth. They described feeling a tight band about a centimetre below the fourchette, on the inside of the vagina that does not yield when pressed.

“there is a rigid band about a cm in... that for some women just does not give and then everything else just starts to swell up...it’s a little bit further back so the head can’t come past it. But actually the head won’t come past it so you might have to do the episiotomy slightly earlier than you would optimally do. But then if you do it at the height of the contraction, once you get rid of that band, the baby does then come straight down” EP18

### *Perineal integrity - Blanching*

Most participants mentioned concern for perineal integrity if they saw the perineum blanching. This was conceptualised as the perineum becoming white, as if there is impeded perfusion of the tissues, which are no longer stretching, thus arresting progress. This sign would often result in no progress and potential fetal heart changes but would have already stimulated episiotomy decision-making and preparatory infiltration of local anaesthetic due to the risk of severe tearing.

“It’s almost totally yellowy white, and there’s just like no, kind of just no matter how much is pushing, this head is just sitting.” EP34

### *Thick/rigid perineum*

The label of ‘thick or rigid’ was used to describe a perineum that was not stretching and thinning but remaining thick and static. Participants described how if the fetal heart was stable, they would return to the perineal care techniques described in the first theme to give it time and support to stretch. However, experience of the potential consequences alerted participants to early preparation for an episiotomy.

“... so it generally appears thick, it doesn’t appear to have thinned. . .and there’s just no give to it so ...it’s just jamming against it and it looks like it will tear, so she may eventually get to the point where she pushes the baby out but it will literally not give way, it will just rip.” EP12

“So if someone’s got ...a very thick, rigid perineum that I can see isn’t giving at all, that’s when I would kind of anticipate that there’s probably . . ummm . . is gonna end up with some kind of fetal distress and I’ll have a much lower threshold for doing an epis and I would start to infiltrate .” EP14

### *Buttonholing*

Every participant mentioned buttonholing as an indicator for episiotomy though few had ever seen it in practice. It was described as the perineum separating to resemble the buttonholes on a cardigan. The few midwives who had witnessed the appearance of buttonholing acknowledged that by the time it was noted, trauma to the underlying tissues was likely to have occurred. These signs would prompt an episiotomy, with the aim being to relieve the pressure on the tissues and potentially prevent a more severe tear.

“you can see a little breakage in the perineum like a little hole then the skin around it starts to break away, the skin begins to break and you can see the muscle behind it.” EP20

“when the perineum is what we call ‘buttonholing’, so when it looks like the skin between the anus and the vagina is giving way, you can see it, it’s tethering, you can see the top layer starting to split, um . . . which in my experience would intimate that she’s maybe gonna have a third degree tear, um or you know a much more severe tear than if you were to perform an episiotomy.” EP12

Another sign that the participants described as alerting them to internal trauma being sustained was the appearance of fresh blood ahead of the birth of the baby’s head, suggesting a tear on the vaginal wall inside. Performing an episiotomy in response to this sign was often described as too late as the trauma had already occurred. However, in some cases, performing an episiotomy was felt to potentially divert or minimise the complex damage.

“it was that fresh blood loss where it almost felt to me that there was tissue already tearing internally and um it was a good choice because she did end up with very complex multiple tears that I couldn’t repair myself um, very deep buttonhole tears” EP22

“It’s very rigid and you sometimes see blood coming through so something on the inside is already tearing and if it’s not advancing you just don’t want a 3rd or 4th degree. Then baby starts getting distressed because they are sitting there, wanting to come out but they just can’t push past that point so that’s when you infiltrate and do it.” EP1

Table 1: Red Flags to inform episiotomy decision making in a midwife led birth

Red Flag	Context that could indicate episiotomy required
Reduced Fetal Heart Rate	Head on perineum (crowning)
	Slow/no progress of vertex/unable to wait
No progress, FH stable and perineum impeding:	
Banding	Tight band of tissue, Often about 1 cm below fourchette, not stretching or thinning
	When pressure applied, no ‘give’
	No movement of vertex, progress halted despite expulsive contractions and maternal pushing efforts
Blanching	Perineum developing a pale or white appearance
Thick/Rigid	No give/stretch or thinning of tissues
Buttonholing (late sign)	Trickle of fresh blood ahead of the baby’s head being born (something gone inside)
	External fibres separating / hole appears in perineum

The episiotomy

midwives’

All participants compared midwifery practice of episiotomy to that of medical colleagues. The episiotomy common to medical practice was described as a procedure to facilitate instrumental access in an assisted birth and was frequently described as large.

“I also think some of our junior staff are a little bit frightened by episiotomies they observe being done at assisted births by the medical teams because they can be quite large and bleed quite a lot” EP18

“A midwives episiotomy is totally different from a doctors episiotomy” EP17

This was in contrast to the need for an episiotomy in a midwife led birth which was release of the perineum to facilitate birth of the fetal head. While participants agreed episiotomies performed by midwives were generally smaller, they were clear to perform the procedure properly and with confidence. The description of a ‘Midwives episiotomy’ was felt to reflect a lack of confidence with a strong message of doing it properly if you are going to do it.

“we do always seem to talk about these mw episiotomies and I think that’s when we are lacking confidence so we sort of nick them with the scissors. I was always told ‘if you are going to do one, do one’.”

“ there’s muscle that’s holding things back so, you know needing to actually, you know if you’re going to do it, commit and do it right” .EP26

“she said ‘just don’t be afraid, cut the length of the scissors because you don’t want to do a little snip and go back and do another snip’ and then it will be much harder to fix it. Better to fix a straight cut than to go back and cut more times.” EP13

“...if you're gonna have to do it, do it properly. Don't faff around and do little tiny snips 'cause the worst thing you can do is be like scared of doing it, and not make a big enough cut. And then you still got an episiotomy and the baby's head has still not birthed.” EP37

“I remember somebody saying . . . can you check this? I've done an episiotomy and literally it was a first degree tear.” EP42

When asked how a midwife knows she has made a large enough incision, the tactile process of ‘feeling as you go’ was identified. Midwives described feeling how much the muscle ‘gives’ when the incision is being made, alongside feeling further advancement of the fetal head. The feedback loop of fetal head movement/release of the muscle informed their subsequent action in relation to the size of episiotomy. The action of guarding and slowing the birth of the head by positioning their hand on it was also common practice at this point, to prevent extension of the episiotomy.

“we teach midwives to guard where you do the episiotomy. There is no point doing it and then just leaving it to extend, you know its about doing it and then, they have to put pressure on where they’ve done it and sometimes again that is a skill in itself.” EP18

The dexterity required to guard the episiotomy at the same time so it does not extend illustrates the skill required to manage the birth following episiotomy.



## Infiltration as a catalyst for birth

If concerns regarding the fetal heart rate were identified, it is at the point of crowning that infiltration of the perineum with local anaesthetic was performed in preparation for the episiotomy.

“...we did an infiltration because we heard, we started to hear some prolonged decels, but still we weren’t as concerned for the baby to want to do the episiotomy. But then we knew then that if we had to do it, we wanted to be able to do it quickly.” EP24

The process of ‘infiltrate and wait’ was frequently identified by participants who had observed warning signs in the perineum, such as rigid tissue, banding or blanching. The process of infiltrating the perineum gave the midwife a valuable opportunity to assess the maternal tissues and descent of the fetal head using touch to inform decisions about whether to proceed to episiotomy or wait. The ‘feel’ of the tissues at this point (such as the thickness, or amount of ‘give’), coupled with the size and movement of the fetal head were important cues to direct the decision to proceed to episiotomy or wait.

“ . . it does give you a good indication of what the thickness of the perineum is like as well. When you're putting your fingers in.” EP37

In some cases, participants described infiltration alone as enabling further descent of the baby’s head, occasionally avoiding the need for the midwife to perform an episiotomy altogether.

“I would infiltrate and then we'd wait and see if the baby advanced anymore . . probably one or two contractions.” EP36

Participants who described themselves as very confident practitioners, were able to notice warning signs early, proceed with consent and infiltration in a calm pre-emptive approach.

“so yeah I try and get in there as early, as soon as I see a slightly rigid perineum I might start to SLOWLY discuss it and say, you know, “Looks like there’s not a huge amount of stretch there, so if this keeps happening what do you think about us numbing it down below?” and then the next step would be...” EP14

Many participants commented that in some cases, infiltration removed the burning pain of crowning and allowed some women to relax and gently birth their baby, negating the need for an episiotomy. This evidence gave participants confidence in their skill set. By initiating the intervention of episiotomy in a calm prepared manner, they had ‘kept the oxytocin in the room’.

“Almost having a little bit of foresight so if you think you might need one, the descent of the head has been a bit slow, it’s been sitting there for a while, making sure you’ve got what you need in the room, do some infiltration giving yourself plenty of time to do the infiltration before you make that final decision. From a personal level, many times I have infiltrated and the lady has pushed past that point and actually not needed an epis so the infiltration had been enough and she was just holding back a little bit from that discomfort.” EP18

In the absence of significant fetal heart rate concerns, infiltration of the perineum gave participants a valuable opportunity to make further assessments of the perineum, which enabled them to either

wait or proceed with episiotomy. It is clear that touch, in addition to close observation of the perineum, provides midwives with key information for decision-making in performing episiotomy.

## Discussion

This evidence is a collection of experienced practitioners' observations and points of practice on the topic of assessing for episiotomy, in an attempt to name the signs often described as 'intuition' or attributed to 'experience'. Assessment of the perineum during the second stage of labour is complex and this study gives insight into how experienced midwives rely upon a combination of visual and touch cues to inform their decision-making for episiotomy. The use of touch (or palpation), particularly when infiltrating the perineum in preparation for episiotomy, may give midwives valuable information about the perineal tissues. This sensory input (via touch) is known as haptic feedback in surgery (13). Episiotomy is a surgical technique that sits within the sphere of midwifery practice; it is therefore unsurprising that haptic feedback has been identified as an important component in decision-making for episiotomy.

Practical techniques to support the perineum are evidenced in the literature (14), and we have collated them here within the context of practice (Figure 2). The red flags identified in this research suggest a second opinion may be needed or that an episiotomy may support the birth if the head is on the perineum. These red flags are offered in the absence of literature describing perineal presentations that could alert a midwife to the potential for further action, acting as an aid or prompt for the development of clinical judgement.

International literature continues to focus on the culture of routine episiotomy versus selective episiotomy (15, 16, 17, 18). This cultural shift to selective use of episiotomy where clinically indicated is well established within the UK maternity services (19). Preceding episiotomy guidelines for unassisted birth emphasise its selective use, based on clear clinical indicators and offer direction in the practical technique (1). This has been reinforced by the OASI-CB movement that includes assessment for episiotomy as one of the recommendations of their care bundle (3). Yet there is an absence of literature describing the clinical indications for selective use of episiotomy.

Episiotomy, as a surgical intervention in spontaneous birth, can be problematic for some midwives (20, 21). Some practitioners see it as a tool in their skill set to facilitate the best outcome for mother and baby. Others describe cutting the muscle that they are trying to protect as challenging. There is pride amongst midwives at being able to facilitate births with minimal perineal trauma, with an intact perineum or spontaneous tear preferred over episiotomy as this moves practice into the domain of intervention. A lack of definitive evidence of benefit, the relatively recent introduction of episiotomy into the midwife's role in the 1970s and over-medicalisation via routine use of episiotomy during the same period may explain the hesitancy of some practitioners.

This inconsistency and choice of skill application prevents formalisation and confidence in the evidence base for midwifery practice. Debate continues regarding the contents of the OASI-CB, with exclusion of the only Level 1 intervention known to reduce severe perineal trauma namely perineal warm packs (22). Warm packs were excluded from the Care Bundle due to the inability to standardise definition and provision (whether the compress is held continuously, what materials are used, the

temperature, and the feasibility of safely heating/reheating compresses) but encouraged locally where units had a protocol to support their use (3). The context of birth is unique and intimately dependent on a variety of complex factors making measurement of a supportive rather than interventional aspect of practice notoriously difficult to measure objectively as these complex factors cannot be controlled for in a trial. Despite critique of the CB, assessment for episiotomy remains (23). There is no definitive evidence that episiotomy itself protects against severe perineal trauma though the OASI CB evaluation reported a small reduction in the rate of 3<sup>rd</sup> and 4<sup>th</sup> degree tears (3.3% to 3.0%) following its implementation.

## Conclusion

This study provides valuable insight into the cues that guide experienced midwives' decision-making in relation to episiotomy. Protecting the perineum during the birthing phase of labour is a priority for midwives and the selective use of episiotomy in response to maternal and fetal red flag indicators was seen as part of that. This study contributes evidence related to performing episiotomy when clinically indicated in spontaneous vaginal birth and may support less experienced midwives in developing clinical judgement.

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