Perineal assessment and repair following childbirth: the FAB training method

A handbook to accompany the DVD

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TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Introduction to the handbook</td>
<td>2</td>
</tr>
<tr>
<td>References and resources</td>
<td>5</td>
</tr>
<tr>
<td>Introduction to FAB training method</td>
<td>7</td>
</tr>
<tr>
<td>Anatomy of the female pelvic floor</td>
<td>9</td>
</tr>
<tr>
<td>How does perineal trauma occur?</td>
<td>10</td>
</tr>
<tr>
<td>Types and classification of perineal trauma</td>
<td>13</td>
</tr>
<tr>
<td>Episiotomy</td>
<td>15</td>
</tr>
<tr>
<td>Assessment of perineal trauma</td>
<td>18</td>
</tr>
<tr>
<td>Learning to suture: developing general suturing skills</td>
<td>20</td>
</tr>
<tr>
<td>Perineal suturing</td>
<td>33</td>
</tr>
<tr>
<td>Providing woman-centred care</td>
<td>37</td>
</tr>
<tr>
<td>Perineal problems in the immediate postnatal period</td>
<td>38</td>
</tr>
<tr>
<td>Perineal care and advice in the postnatal period</td>
<td>39</td>
</tr>
</tbody>
</table>
INTRODUCTION

In the UK midwives are responsible for managing the majority of vaginal births. Over 70% of women sustain perineal injury as the result of childbirth, and perineal assessment and repair are an important component of midwives’ professional role (NICE 2007). Although the topic is included in pre-registration training, students are not required to reach a specific level of competency (Butler, Fraser and Murphy 2008, NMC 2009). Evaluations of midwifery student experiences clearly identify lack of experience of perineal assessment and repair by student midwives as one of the unsatisfying aspects of their training. Students report not having enough time in the curriculum allocated to the topic resulting in gaps in theoretical knowledge, unsatisfactory provision of practical workshops and workshop materials, and lack of opportunities for skill acquisition in clinical practice. Similar issues have been recognised across the UK (Chaliha and Sultan 2000, Bick et al 2010).

There is also growing concern that many of the qualified midwives lack confidence, knowledge and skill in assessment and repair of perineal trauma. This problem has been recognised at the local level, when in 2007 we carried out a survey of 116 midwives working at one of the Trusts (Bosanquet, Fynnes and Doumouchtsis 2007). There was a great variation in the experience of suturing. The majority of midwives lacked knowledge and confidence. They expressed willingness to further develop their suturing skills, and frustration that lack of training opportunities and heavy workloads prevented them from learning. A recent qualitative study carried out by Viney (2010) in the same setting investigated further midwives’ experiences, and confirmed the difficulties that midwives encounter when developing the skill. The results showed the inconsistencies midwives encounter when learning to suture; lack of in-depth knowledge of pelvic floor anatomy; and emotional barriers preventing them from learning the procedure. The findings of these local studies form a part of the emerging new evidence on a wider scale of the problem (Chaliha and Sultan 2000, Bick et al 2010). There is currently absence of nationally recognised training guidelines on perineal assessment and repair, and training methods vary. Structured training programmes on perineal assessment and repair are urgently needed to raise midwives’ and student midwives’ knowledge, skills and confidence levels. Some valuable work is currently undertaken at the national level by the PEARLS team (Bick et al 2010).

Benner’s ‘From Novice to Expert’ (1982) framework describes five stages of skill acquisition: novice, advanced beginner, competent, proficient and expert. Although this chronological framework does not always neatly fit into the reality of clinical training, it is generally accepted that progress through the stages is facilitated by meeting stage-specific needs of the learner. Suturing is a multi-layered complex surgical skill, compiled of various components that over time need to fit together and enable the operator to achieve a level of competency (Viney 2010). Providing students with a solid theoretical knowledge base and an opportunity to practise on models and tissue material allows them to build up understanding and experience required to apply their knowledge to clinical...

Intensive one to one or small group training and supervision are linked to achieving the best results in clinical skill acquisition (Woodhouse 2007), but in the current climate of effectiveness and cost-efficiency in both the NHS and the education sector, we also need to look for other, innovative ways to support students and facilitate their learning. The use of e-learning and other media is growing in popularity and there are clear advantages to using visual imaging, virtual reality and film in clinical skills acquisition.

This training DVD is relevant to all practitioners whose role involves assessment and repair of perineal trauma sustained at childbirth, from a novice and advanced beginner wanting to practise at home, to experienced practitioners and experts who will find the DVD useful as a teaching tool which can be used for both small group teaching and large theatre audience.

**CONTENT OF THE DVD**

The training method presented in the DVD supports the student in learning how to assess and repair perineal trauma. It is based on a modified graded approach to surgical skill acquisition where new knowledge and skills are introduced step by step by gradually increasing the level of difficulty and complexity. The method aims to equip the trainees with the necessary knowledge and understanding of the pelvic floor anatomy, facilitates the development of visual acuity, tactile assessment and manual dexterity skills.

The DVD consists of a number of independent sections. Students are advised at first to cover these sections chronologically, one by one. Once this has been accomplished, in order to maintain the skill, all practitioners are encouraged to re-visit different sections in any order, on regular basis.

There is a systematic ‘graded’ approach to teaching each of the skills, starting by observation only, and progressing to practice using at first the simplest home-made tools, moving onto specialist training equipment, and finally to real-life clinical situations. To support students’ development of manual dexterity, clear instructions on various types of surgical knots and suturing techniques are given in order to encourage the students to learn and regularly practise a range of sutures in a controlled environment before proceeding to perineal repair in clinical practice. The ‘graded’ approach is also applied to development of visual acuity. The basic anatomical concepts are introduced using simple graphs and drawings. These are further elaborated on by using still photography without a commentary, followed by images with commentary, 3-D graphical models, and finally film clips of real life clinical cases.

The emotional component of learning is often understated, but is crucial in building practitioners’ confidence and in overcoming any potential barriers to skill acquisition (Viney 2010). The psychological components of learning and providing care is highlighted throughout the DVD and emphasized through interviews with a patient and a midwife describing their experiences.
DISCUSSION AND RECOMMENDATIONS

The training method presented in our DVD recognizes that assessing and suturing of perineal trauma is an advanced, multidimensional skill, and identifies four dimensions for skill acquisition: cognition, perception, action and emotion. In addressing each of these, the method supports students in achieving learning step-stones at their own speed, progressing as and when they are ready, helping to overcome potential barriers to learning.

It is essential to remember that DVD cannot replace one to one teaching experience required for the development and assessment of clinical skill competency. It can be used only as a support tool to facilitate the learning. Students will need personal contact with tutors and mentors in clinical placements to supervise and guide their development and provide constructive feedback. Ideally, more sessions and practical workshops should be introduced in midwifery undergraduate training, and offered to practising midwives on regular basis, possibly within the structure of the Continuous Personal and Professional Development. As a further development, teachers are encouraged to develop their own e-learning tools using the DVD as the basis, which would allow for the assessment of the theoretical component of the learning process. An OSCE-style structured assessment (Caballero et al 2012) could be developed to accompany the DVD to assess the practical component of skill acquisition.

One of the challenges of producing a multimedia teaching tool is ensuring that it remains relevant and up to date for as long as possible. Evidence supporting clinical practice is continuously growing and new guidelines and protocols are put in place. Practitioners often find it difficult to adjust their practice in view of new evidence. The training method presented in this DVD recognizes this challenge as it empowers the students with a multitude of skills and knowledge which they can later adjust.

Finally, producing the DVD using sensitive clinical material was a very challenging, time consuming and costly endeavour. It required persistence, sensitivity, right clinical situations, consent from patients and awareness of ethical issues. I would like to express my sincere thanks to all the women and staff at St George’s Hospital who so generously agreed to participate and have given permission to use clinical material.

Anna Bosanquet

London, January 2013
REFERENCES AND RESOURCES
USED IN THE DEVELOPMENT OF THE FAB METHOD


Viney M (2010) Midwives’ experiences of learning to suture the perineum: A Qualitative Study. MSc Health Sciences, St George’s University of London (unpublished MSc thesis).


Figure 3 and Figure 5 on page 10 show a 3-D CG model built from the Adam Rouley physical model.
Perineal assessment and repair following childbirth: the FAB training method

A handbook to accompany the DVD

The DVD starts with an introduction by Professor Cathy Warwick and Professor Sabaratnam Arulkumaran highlighting the scale of the perineal health problems related to childbirth, and stressing the importance of good quality training in perineal assessment and repair for midwives and doctors worldwide (not included here).

INTRODUCTION TO FAB TRAINING METHOD

Every day, world-wide, an estimated 353 thousand women give birth - 129 million per year. The majority will sustain perineal injury, varying in type and severity. It is essential that all women are attended by practitioners skilled at the assessment and repair of perineal trauma. This training DVD, aimed at midwives, student midwives and junior doctors, presents the FAB Training Method for Perineal Assessment and Repair Following Childbirth. The method will equip a trainee with knowledge and skills required to assess competently perineal trauma and suture the most common, uncomplicated tears.

FAB stands for Fynes And Bosanquet. The method was developed as the result of collaboration between a specialist perineal midwife Anna Bosanquet and uro-gynaecology consultant Michelle Fynes, who have worked together for many years at St George’s hospital in London, UK, managing childbirth related perineal trauma. The FAB method is relevant to ALL practitioners whose role involves assessment and repair of perineal injury: If you are a beginner, the FAB method will allow you to develop new skills; if you already have some skills, but don’t use them on regular basis, the FAB method will serve as a reminder, and will support you to maintain your skills and reach higher levels of confidence; if you are an experienced practitioner, the FAB method will equip you with new teaching material to share your skills and knowledge with others.

The FAB method recognises that assessing and suturing of perineal trauma is an advanced, multidimensional skill. The method identifies four dimensions for skill acquisition, and supports you to develop each of these domains: COGNITION: you need good theoretical knowledge and understanding of the relevant female anatomy, types of trauma, and suturing techniques; PERCEPTION: you need to develop high levels of visual acuity for identifying anatomical structures, and to assess trauma and the outcome of repair; ACTION: you need to acquire, practise and maintain manual dexterity skills essential for accurate assessment of trauma and for competent repair; EMOTION: the emotional component of learning is often understated. Developing self-awareness, reflective practice, and a graded
approach to skill acquisition are needed to overcome potential barriers to learning and to reach high levels of confidence and competence.

The FAB method is based on the graded approach to skill acquisition, where new knowledge and skills are introduced step by step by gradually increasing the level of difficulty and complexity. You are encouraged to achieve the learning step-stones at your own speed, progressing through each of the stages as - and when - you are ready.

There are two general principles which will help you to develop and maintain your perineal assessment and repair skills. First: practice makes perfect. Acquisition and mastering of new clinical skill requires enthusiasm and determination. With regular practice, tasks which appear difficult and complicated at first, soon become easy, even automatic. Don’t be discouraged if – initially - you are slow, and feel clumsy. With guidance and practice you WILL improve. And secondly: use it or lose it. If you do not use your newly learnt skills regularly, your competence – and confidence - are likely to decrease. We recommend that if you do not have regular opportunities to assess and repair the perineal trauma, you practise on specially manufactured models, or any other suitable material.

We advise you at first to cover the sections in chronological order, one by one. You are the best person to decide when to progress from one stage to another. Once you have completed the training by covering all the sections in order, you may find it useful to re-visit different sections on a regular basis.
ANATOMY OF THE FEMALE PELVIC FLOOR

In order to assess accurately perineal trauma and to carry out a repair, the practitioner must be fully familiar with the relevant female anatomy. This section serves as a REMINDER of the female pelvic floor anatomy.

PROXIMITY OF ORGANS

Female generative organs lie in close proximity to important structures such as the bladder, urethra, rectum and the anal sphincters. These organs are all contained in the abdomen and supported by the pelvic floor. Below the skin and fat layers of the perineum there are nerves, veins and arteries, as well as muscles and fascia. The strength and integrity of this region are crucial for maintaining urinary and faecal continence and for the sexual health of any woman.

Figure 1: Proximity of organs
In the following section of the DVD, a Women’s Health Physiotherapist describes and demonstrates using a teaching model and graphical images the female external genitalia and the internal anatomy of the pelvic floor (not included here).

**How does perineal trauma occur?**

Progress of a fetus through the birth canal may cause varying degrees of trauma to the perineum as well as to neighbouring structures and may involve injury to the bladder or bowel continence mechanism. Attention must be always given to slow and careful delivery of the presenting part. For a cephalic birth, it is important to remember that not only the head but also the after-coming shoulders may cause damage.
As the head emerges, the perineal body, the vaginal wall, and the levator ani muscles stretch considerably to accommodate the delivering head and after-coming shoulders. Displacement or compression of the bladder and anal canal occurs. Prolonged second stage, a large presenting part, or instrumental delivery may result in compression or direct injury to the pudendal nerve roots. This is generally self-limiting and recovery is the norm, but with prolonged compression neurological damage may persist leading to possible dysfunctional pelvic floor symptoms. Alternatively damage may be mechanical and due to direct or indirect trauma to the pelvic floor muscles, fascia and ligaments. Most women sustain a combination of these two types of injury called neuromuscular injury. In the vast majority this is occult or they may present with a variety of dysfunctional pelvic floor symptoms or signs on examination, for example urinary incontinence, bowel incontinence, difficulty emptying the bladder or bowel, prolapse or sexual difficulties.

Not all injury is preventable with optimal intrapartum care, and the risk of injury increases with many factors such as, for example, mother’s age at first delivery. This is due to reduced elasticity leading to less distensibility of the tissues, and therefore predisposing to stretching, tearing or avulsion injuries of the fascia, ligaments and pelvic floor muscles. The ability to recognise and appropriately repair perineal injury, with optimal postnatal care, pelvic floor muscle training, and referral where necessary to appropriate specialists, should minimise the impact of such childbirth injury.
We will now look at the anatomy of the perineum in relation to childbirth trauma. The **perineal body** is a pyramidal shaped fibromuscular structure. The average perineal length is three centimetres from the posterior fourchette to the anterior anal verge. The length varies and those with a short perineum have been demonstrated to have an increased risk of significant perineal trauma, including involvement of the anal sphincter muscles. The perineum is anchored to the anal sphincter muscles posteriorly and anteriorly to the vaginal sphincter / bulbospongiosus muscle. Laterally it incorporates the superficial and deep perineal muscles. It acts as an anchor point. Integrity of the perineal body is essential for sensation with sexual intercourse, specifically penetration, and for stabilising the anal sphincter complex to facilitate defecation without straining. The fourchette is the area where the labia minora meet posteriorly, and superficially blends with the perineal body. This area is most frequently torn. The superficial perineal body in this area is filled with fatty and superficial fibromuscular tissues.

The opening of the vagina is called the **introitus**. The **fourchette** is located at the 6 o clock position. At the introitus lie the circular remnants of the **hymen**. Immediately behind this lie the **vestibule** and **vestibular bulbs**. The vestibule is bounded anteriorly and laterally by the labia minora and posteriorly by the fourchette. Three structures open into the vestibule: **urethra**, **vagina** and **Bartholin’s glands**. Bartholin’s glands are located at the 4 and 7 o clock positions relative to the posterior midline fourchette. The vestibular bulbs are found at either side of the introitus. They are composed of erectile tissue and are covered by the bulbospongiosus muscles.

This area contains a high concentration of sensory nerve endings. During pregnancy there is an increase in vascularity, with multiple veins and often varicosities – if torn, these tissues may bleed significantly and repair may be required to achieve haemostasis rather than to reconstruct.

The most likely tissues to be involved with perineal trauma at vaginal delivery are the **perineal body**, **the deep and superficial transverse perineal muscles**, **bulbospongiosus muscles**, **distal posterior vaginal mucosa** and **rectovaginal septum**. 1-2% women at first delivery sustain perineal injury which extends into the anal sphincter complex. This complex includes the internal and external sphincter and will be discussed in more detail later.
PERINEAL TRAUMA AND ITS ASSESSMENT

TYPES AND CLASSIFICATION OF PERINEAL TRAUMA

Detailed assessment of the perineal trauma at the time of delivery is essential in order to appropriately identify and record injury sustained, and to determine an appropriate action plan in terms of what requires suturing and what may be left to heal spontaneously.

Perineal trauma is classified into four categories depending on the extent of tissue involvement as a first, second, third or fourth degree tears. Tears other than to the perineum may occur and may or may not require suturing, for example labial or cervical tears. Following delivery the perineum may be intact. There are no lacerations. The whole of the vulva, perineal body, fourchette, perineal muscles and the vagina remain intact. However, even in cases of an intact perineum, swelling, bruising or weakening of the pelvic muscles floor may still be present, and may contribute to postnatal dysfunctional pelvic floor symptoms such as prolapse or incontinence. A first degree tear is a superficial tear involving the perineal skin or vaginal mucosa only. Second degree tears involve the perineal skin and/or vaginal mucosa as well as the superficial and deep perineal muscles, and/or other tissues. Second degree tears vary in location and extent. This group includes the episiotomy where the superficial and deep perineal muscles are intentionally cut. Third and fourth degree tears involve injury to all the previous described tissue layers and in addition involve the anal sphincter complex. They vary in severity and may involve the external anal sphincter only with either partial or full thickness damage; more severe third degree tears involve both the external and internal anal sphincters. A fourth degree tear extends through the entire anal sphincter complex into the anal canal with disruption of the rectal mucosa. This type of tear is less common.

Figure 8: Degrees of trauma
Depending on the degree of trauma to the anal sphincters, third degree tears are divided further into sub-categories: 3a - where less than 50% of the external anal sphincter thickness is torn; 3b - where more than 50% of the external anal sphincter thickness is torn, but internal anal sphincter remains intact; 3c - both external and internal anal sphincters are torn, but the anal mucosa remain intact. The fourth degree tear involves perineal skin, muscles, anal sphincter and anal mucosa.

There are also rare cases of sphincter damage with an intact perineum, and a button-hole tear which occurs when the anal sphincter is intact but the anal mucosa are torn. This is usually associated with instrumental delivery.

Other types of perineal trauma include: Labial grazes – these are superficial scratches and abrasions on the surface of the labia majora or minora and are very common. They usually do not require suturing. Labial tears that may involve one or both labia minora. They vary in severity and may require suturing to control bleeding or restore symmetry or cosmesis. Peri-clitoral injury occurs in the region around the clitoris and clitoral prepuce. This could be a tear or a graze and is often prone to bleed profusely as this area is very vascular. Peri-urethral injury is a tear or a graze close to the urethral opening or urinary meatus. Other types of spontaneously occurring injury include tears to the cervix, or cases where the injury consists of a combination of different types of tears.
**EPISIOTOMY**

In contrast to spontaneously occurring trauma, episiotomy is a surgical incision performed occasionally in order to enlarge the vulval outlet. Before performing an episiotomy the justification for the procedure has to be documented, and explained to the woman. Maternal consent must be given. There are different types of incision but only the mediolateral technique is described here as this is the most common incision currently practised in the UK.

**PERFORMING THE EPISIOTOMY**

This section in the DVD is accompanied by graphical animation of the photographs and film footage.

The timing is of crucial importance. An episiotomy is effective only when the presenting part is fully applied to the perineum. If performed too early it will fail to release the presenting part and may result in haemorrhage from the cut vessels. Ensure perineum is fully anaesthetized prior to incision. Assess the need for local anaesthesia also in women who have had an epidural. For local infiltration Lidocaine 0.5% in 10 ml or 1% in 5 ml is commonly used in the UK.

**STEP 1:**

Visualise the incision line. It should start at the posterior aspect of the fourchette close to the 6 o’clock position, and run at a 45 degrees angle to the midline towards a point midway between the ischial tuberosity and the anus.
**STEP 2:** Insert two fingers into the vagina along the line of the proposed incision in order to protect the foetal head.

**STEP 3:** Insert the needle for 4 to 5 centimetres beneath the skin at the posterior aspect of the fourchette, following the planned incision line.

**STEP 4:** Check that needle is not in the blood vessel by withdrawing the piston prior to injection. If blood is seen, withdraw the needle and reposition. Repeat if necessary.

**STEP 5:** A local anaesthetic solution should be injected continuously as the needle is slowly withdrawn. Anaesthesia is more effective if the total solution is distributed in three directions:

Repeating the same procedure, make two further injections on both sides of the proposed incision line, injecting a third of the solution each time.

**Do not fully withdraw the needle:** the needle must be redirected just before the tip is withdrawn.

*Figure 13: Injecting in three directions*

**STEP 6: THE INCISION**

The anaesthetic usually takes 3 to 4 minutes to take effect, therefore - if possible - two to three contractions should be allowed between the infiltration and the incision. You should always maintain full sterile technique during this surgical procedure. A sharp, straight-bladed, blunt-ended pair of scissors should be used.

1. Two fingers are inserted into the vagina in the same way as for infiltration. The open blades are positioned at the fourchette at six o’clock position and directed towards the intended incision line.
2. The incision should be made during a contraction, when the perineal tissues are stretched. This gives a clear view of the area and results in less bleeding due to compression of the veins.
3. Make a single deliberate cut 4 to 5 centimetres long at the angle of 45 degrees.
4. Birth of the head should follow immediately. If there are any delays before birth is completed, pressure has to be applied to the episiotomy site between contractions to minimize bleeding.
PLEASE NOTE:

When deciding on the proposed incision line, it is always necessary to take into consideration the size of the perineum and the way it stretches. In some cases you will have to use your clinical judgement and adjust the procedure as necessary.

For example, in one of the cases shown on the DVD, the episiotomy was performed to facilitate forceps delivery in a woman with a short perineum. Due to the shortness of the perineum and the positioning of the baby’s head, the episiotomy was made in an adjusted position of 7 o’clock and at what appeared to be a 60 degrees angle in order to protect the anal sphincters. However, once the baby was born, and the perineum returned to its natural position, the episiotomy line now presented in the correct position close to 6 o’clock and at 45 degrees angle.

Remember, there may be new evidence emerging in the future which may point to a change in the location of the incision. However the general principles remain valid.
PERINEAL ASSESSMENT FOLLOWING CHILDBIRTH

This section describes how to assess a woman’s perineum immediately after birth. On the DVD it is supported with images (photographs and film footage) of different types of trauma in order to help you develop your skills of identification and classification of perineal injury. Woman-centred care, including pain control and ensuring the woman’s comfort and privacy are covered in a separate section.

PROCEDURE

- Good lighting is essential.
- Visually inspect the external genitalia. Directing your eyesight from the mons pubis towards the anus identify relevant anatomical landmarks and check their appearance.
- Now, progress to a systematic inspection of the genitalia. Gently part the labia majora. Identify the anatomical structures which are now clearly visible, such as the labia minora, hymenal remnants and urinary meatus.
- Inspect the area around the introitus and - by gently inserting your fingers deeper into the vagina - check the integrity of the anterior, posterior and lateral vaginal wall. On the DVD you can see an example of a shallow graze at the introitus, followed by examples of first degree tears which involve superficial tissues and skin layers only, and a second degree tear. The tear comes through all three layers – the skin, vaginal mucosa and perineal muscles. Second degree tears vary in shape, length and depth of the laceration. The tear visible here is deep.
  It is important to identify the apex of the tear as this is the area most prone to bleeding. Trauma caused by an episiotomy – as seen on the DVD - is comparable to a second degree tear. It also involves all three layers. Inspecting the perineum and vaginal wall after an episiotomy is essential in order to identify the apex check for a possible spontaneous extension to the incision which could result in an obstetric anal sphincter injury, and check for any other co-existing injury.
  It is important to remember that there could be more than one vaginal tear, and that a tear could have more than one apex.
- Now, if you suspect that there may be a cervical tear, inspect the cervix. If you are unable to visualise it, you may have to lift the anterior vaginal wall by inserting a speculum.
- Once you have examined the vaginal wall and the cervix, check the integrity of the labia majora and minora. The DVD presents examples of grazes on the inside of the labia; and of tears to labia minora.
- Now progress to the examination of the anterior vulval area checking for peri-urethral and peri-clitoral injuries. On the DVD you can see a large tear running across both the peri-urethral and peri-clitoral areas.
- Perineal assessment should be completed by performing a rectal examination to check for the integrity of the anal sphincter muscles. If the laceration is close to the anal margin, it is possible that the anal sphincter muscles have been torn.
a) Visually check the pattern of the peri-anal rugae. They should be circumferential and intact with no loss of the rugal pattern.

b) Insert your index finger into the anus. Directly palpate and visualise the anterior component of the anal sphincter muscles with a finger in the rectum. This is achieved by applying upward pressure with your finger onto the anterior aspect of the rectum, towards the vaginal introitus. This should help you to determine whether the external and internal sphincters are intact or disrupted.

c) To assess the sphincters’ strength and function the woman can be asked to squeeze the examining finger. However, this is an unreliable assessment immediately after childbirth, especially in women who had an epidural.

d) The rectal examination is completed by performing the ‘rolling’ action between the index finger and thumb, palpating all around the sphincter complex circumferentially. This allows to palpate the length of the sphincter, which on average is about 2cm long. Any loss of length, reduced thickness or asymmetry suggests sphincter damage.

Accurate assessment of sphincter damage and identification of the muscles involved is not always easy for a number of reasons. If the muscle ring is completely disrupted then it will retract backwards and may be missed. The deep and superficial transverse perineal muscles lie in close proximity to the anal sphincter complex and entwine with it. It is important to distinguish them from the anal sphincter muscles, which are a separate entity.

If in doubt, the involvement of the anal sphincter muscles can be determined by observing the response of the exposed tissue to traction. This is demonstrated on the DVD. The test is done by holding the edge of the torn muscle with forceps and applying an upward traction while keeping the index finger in the anal canal. If the resulting pull is felt in the anus this implies that the sphincter is involved. If the pull is observed externally to one side, this suggests that the tissue pulled is part of the perineal muscles and not the anal sphincter muscles.

Once the involvement of the anal sphincter muscles has been confirmed, the colour of the exposed tissue can help to differentiate between the two sphincters external or internal. The colour of the external striated muscle sphincter is dark red, whilst the internal anal smooth muscle sphincter is much paler. This is demonstrated in Figure 15 below. The FAB DVD presents some examples of third degree tears and their assessment. If you are ever in any doubt as to the severity of the perineal trauma, always ask for a second opinion.

Figure 15: Determining the degree of the obstetric anal sphincters injury

ENHANCING UNDERSTANDING OF PELVIC FLOOR ANATOMY

In order to enhance understanding of the pelvic floor anatomy, and the long term consequences of perineal injury and its repair, the next section on the DVD contains film footage with live narration demonstrating three case studies of women undergoing pelvic floor surgery to improve perineal function following childbirth.
LEARNING TO SUTURE: INTRODUCTION

This section will provide you with the necessary skills and knowledge essential for carrying out a perineal repair. It is divided into two main chapters:

Chapter one is concerned with development of general suturing skills. This is aimed at absolute beginners. It commences with an introduction to suturing equipment, progressing to tying knots, and step-by-step demonstration of various suturing techniques on sponge and tissue material, to help you develop manual dexterity and confidence in instrument handling.

Chapter two is concerned specifically with perineal repair. It commences with a graphic representation (animation) of a repair of a second degree tear. A demonstration is given showing how the recommended technique should first be practised on a sponge and tissue material. This is followed by observation of filmed cases of pelvic floor repair during gynaecological surgery, which resembles suturing following childbirth but is carried out in operating theatre under controlled conditions. This results in better clarity and therefore facilitates development of visual acuity and better understanding of the procedure. The chapter closes with film footage of two repairs carried out following childbirth: suturing of an episiotomy and of a second degree tear.

The recommendations for perineal repair presented here are based on the best current research evidence and follow the most recent national guidelines (for details please refer to the references and sources section). However, it is important to remember that all practitioners are responsible for continuously updating their knowledge and should adjust their practice in response to new evidence. The variety of suturing skills learnt through the FAB method will allow you to modify your practice if evidence changes in the future.

CHAPTER 1 DEVELOPING GENERAL SUTURING SKILLS

SUTURING EQUIPMENT

Equipment used for suturing will vary slightly between the locations. Typical equipment consists of:

- **A surgical needle with thread.** A variety of makes and sizes are available. **Vicryl rapid size 2** is most commonly used for perineal repair in the United Kingdom. This is a braided suture which makes it easier to tie knots and dissolves within seven to ten days.
- **A needle holder**
- **Toothless forceps.** Forceps with teeth can cause additional trauma to fragile tissue
- **A pair of scissors**
- **A pack of sterile liquid** such as saline or normasol
- **A local analgesic** such as lignocaine or lidocaine
- **A syringe** and selection of **needles**
- **Sterile gloves**
- **Cotton swabs, vaginal tampon and sterile towels**
- **A variety of dishes**
- **A disposal bag**

When opening a suturing pack and using the equipment you should always follow general antiseptic rules and safety procedures such as counting swabs and equipment both at the start and at the end.
HANDLING THE INSTRUMENTS

The needle holder is used to grasp and guide the needle. A needle holder consists of the jaws, the joint and two handles with a lock. The texture on the inside of the jaws, and the clamp mechanism which locks both handles together, help to grip the needle firmly in place in order to manoeuvre it through the tissue. The needle holder is held in your dominant hand. Place your thumb and ring finger in the holes. Your thumb does most of the work to open and close the holder. Your index finger is used to guide the instrument.

![Figure 16: A needle holder is helped by thumb and the ring finger](image1)
![Figure 17: The index finger guides the instrument](image2)

**Toothless forceps** are used to expose and hold the tissues gently while placing the sutures, and to grab and guide the needle. They are controlled by your other hand, and should be held like a writing pen or chopsticks. Holding the needle holder and the forceps in this manner gives you optimal control and range of fine movement. Your forearms can rotate freely. Both instruments should be used as an extension of your forearms, and work together in coordination.

![Figure 18: Holding the forceps](image3)
![Figure 19: Both instruments working in coordination](image4)

**Scissors** are used to cut the stitch from the rest of the suture material. Scissors are handled similarly to the needle holder. It is best to **cut with the tip of the scissors** to prevent accidental injury to neighbouring tissue.
MOUNTING THE NEEDLE

Wearing sterile gloves open the pack. Using the needle holder take the needle out of its package. Place the empty pack to one side ready to be counted at the end of the procedure.

*Figure 20: Removing the needle from the suture pack*

Having removed the needle from the packet you must now mount it correctly onto the needle holder by using the forceps. The needle must be held two thirds down from the needle tip and a third of a way back from the point of the suture connection. It should be positioned at right angles to the needle holder. This position allows you to rotate your forearm to insert and drive the needle through the tissues. If the needle is grasped too close to the tip it may not go through to reach the other side of the tissue. Holding the needle by the tip or close to the tip may also cause the tip to break off.

*Figure 21: The correct position of the needle*

Once you have mounted the needle in the correct position you must lock it securely in place. You should hear the lock click confirming it is closed firmly.

*Figure 22: Securing the needle in the needle holder*
LEARNING TO SUTURE

In this section you will practise different types of knots and suturing techniques on phantom models. A linear incision is made through the pad. To facilitate learning, beginners should start practicing on a single symmetrical incision of equal depth. With experience you should progress to practice on incisions of various shapes and sizes. To facilitate transfer of skill from models to a real situation, suturing material and instruments should be similar to those used locally and gloves should be worn.

KNOTS AND INTERRUPTED SUTURING

Basic surgical knot and interrupted suturing

We start by learning how to make a basic surgical knot (also called a square knot)

- Un-guard the needle and mount it correctly at a distance of two thirds from the tip and at a 90 degree angle.
- Use the forceps to grasp the tissue and expose the inner aspect of the wound at the side of needle entry.
- For the purpose of learning aim to place the sutures at equal points from the incision and exaggerate each point of entry and exit.
- The needle is entered almost at right angles to the tissue. You must take a good depth of bite to ensure that you are taking not just the skin but also the subcutaneous tissues. This is to prevent excessive tension on the skin alone which can cause pain and result in unsatisfactory repair.
- Use the needle holder to drive the needle through. Now pull the needle out on the other side using your forceps. Do not grasp the tip of the needle with the forceps, but place them further down the length of the needle to ensure better control. When training, it is a good practice to take bites on both sides of the incision separately rather than as one, in order to ensure that you are taking them at the same depth and the same distance. Notice here that the point of entry and exit are of the same depth, at the same level and at equal distance from the incision. As you develop your skills you will be able to pull the needle through directly to the other side of the incision.

Figure 23: Guarding the needle
Once you have pulled the needle through, you now must guard it as previously demonstrated and place it to one side. Then you pull the rest of the suture through using your hand or the forceps. You should leave about 3 centimeters of thread at the site of entry in order to tie a knot. Beginners will require a longer piece of thread left at the entry point.

Next, you are going to tie a knot. The general principle for tying knots is: first, to tie them securely, and secondly, to use the minimal amount of suturing material to prevent tissue irritation. As you get more experienced at knotting you will become faster and you will use less material for each suture.

To tie a basic knot, wind the suture around the tip of the needle holder three times. Then grasp the end of the suture, and pull it through the created loops in the opposite direction so that it sits flat.

While learning we recommend that you use the following technique consisting of three steps: three throws away from you (in clockwise direction), two towards you (anticlockwise), and one away from you (in clockwise direction): three, two, one. This will make the knot secure. As you become more experienced you may have to adjust the exact number of throws depending on current recommendations, material used and the type of wound. For learning purposes knots should be placed on the midline. To finish, grasp the ends of the stitch and cut them off.
The interrupted suturing technique

You should continue to practise tying the basic surgical knot along the whole of the incision line. The placement of individual knots along the incision line is called the interrupted suturing technique.

**Figure 28: Interrupted suturing using the basic knot technique**

We are now moving to a variation of the technique using other knots.

A buried knot

A buried knot is a knot that is hidden inside the wound.

- Grasping the tissue on the opposite (left) side, insert the needle on the inside of the incision.
- Push the needle through to the outside, and rotate it so that you can grab it with your forceps.
- Drive the needle through the tissue
- Now pull the thread through, leaving 3 to 5 centimeters at the end.
- Bring the suture across the middle of the incision to the opposite side, grasp and expose the tissues on that side
- then enter the needle from the outside and drive the suture through towards the inside of the wound.
- Now tie a knot in the same way as before: 3 throws out, pull, two throws in, pull in the opposite direction, one throw out and pull in the original direction. Bring both ends together and cut them short.

**Figure 29: Tying a buried knot**

You should continue to practise the buried knot along the whole length of the incision.
A mattress stitch

The mattress stitch can be used when tissues are very swollen, and for repairs to wounds with irregular edges, where other types of stitches would cut through the tissue. This technique will ensure that the skin is brought together.

- Grasp the needle with the needle holder and mount it correctly.
- Take deep bites through the tissue, at the same distance and of equal depth at the point of entry and exit.
- Pull the suture through.
- Then re-insert the needle on the same side but closer to the incision line, and bring it through just under the skin back to the opposite side.
- Complete by tying a knot on the side of the incision: one-two-three out, catch and pull. One-two in, catch and pull in the opposite direction; one out, catch and pull in the original direction. Pull both ends together and cut.

You should continue to practise the mattress stitch along the whole length of the incision.

Figure 31 below shows a pad with three different types of knots that you have learnt in this section: the basic (square) knot, the buried knot, and the mattress stitch; and three techniques for interrupted suturing based on these knots.

Figure 31: Examples of interrupted suturing using three different types of knot tying technique
CONTINUOUS SUTURING

This section introduces you to continuous suturing techniques. You may start each suture using either the basic surgical knot or the buried knot.

The classic continuous suturing technique

- Take the suture out of the packet as described before. Adjust the needle.
- Start at the top of the incision.
- A buried knot is inserted here to anchor the suture.
- Insert the needle and pull the suture through.
- Guard the needle
- Tie the knot: one-two-three out, catch and pull; one-two in, catch and pull in the reverse direction; one out, catch and pull in the original direction.
- Pull both ends of the suture. This time cut one thread only, leaving intact the suture with needle attached to it
- Re-mount the needle
- Now run the stitch through the length of the incision, inserting the needle always at the same depth and the same distance apart, taking deep bites through the tissues.
- Begin as illustrated here – insert the needle at the correct point on one side, and drive it through underneath in a direct line to the opposite side.
- Pull the suture through
- Now insert the needle at the same side and level as for the previous stitch, but this time take it to the other side DIAGONALLY.
- Pull the suture through and take the needle OVER IN A DIRECT LINE, back to the original side so that the point of new entry is exactly opposite the point of the last exit.
- Insert the needle and take it diagonally to the other side
- Pull the suture through and take the needle over in a direct line back to the opposite side
- Repeat until you have reached the end of the incision

Figure 32: The classic continuous suturing technique
Continuous suturing using blanket stitch

This suturing technique is useful for wounds accompanied by excessive bleeding, or with uneven edges.

- Begin with a chosen knot
- Cut the end of the suture
- Commence by inserting the needle on one side and taking it in a direct line underneath to the opposite side
- Make sure that the suturing material remains behind the needle as shown here
- Pull the suture to secure it
- Now holding the thread in place with your left hand, take the suture over DIAGONALLY back to the original side,
- insert the needle and pull it through to the other side in a direct line ensuring that the thread remains behind the point of exit
- Pull the suture to secure it
- Repeat until you have reached the end of the incision

**Figure 33: Continuous suturing using blanket stitch technique**

Continuous suturing: Subcutaneous technique

This technique is used for suturing the skin layer of a wound. The suture line is buried increasing the comfort during healing and giving good cosmetic results.

- Insert a knot
- Remount the needle
- Grasp the tissues on one side with the forceps to expose the sub-cuticular layer of the incision
- Enter the needle at the edge of the incision, inside the wound and just under the cuticle
- Drive the needle downwards, along the edge of the incision, just under the cuticle layer
- Pull the suture out, and move across in a direct line to the opposite side
- Grasp the tissues on that side to expose the sub-cuticular layer
- Enter the sub-cuticular layer on the other side exactly opposite the last point of exit
- Drive the needle downwards along the edge of the incision, just under the cuticle layer
- As you advance downwards, pull the skin edges together
• Each point of entry must be just opposite the last point of exit, and you should aim to maintain the same length and distance of the bites
• Repeat until you have reached the end of the incision

Figure 34: Subcuticular continuous suturing technique

Locking stitch

When using continuous suturing technique, when you need to ensure that both sides of the incision are securely locked together at a specific point, you should use the locking stitch to anchor the suture.

• Enter the needle as usual, but instead of going across to the other side of the incision, exit in the middle.
• Pull the suture through, but leave enough out to form a loop above the point of exit
• Now take the needle through the loop as illustrated here, and pull the thread in order to lock the stitch in place
• Having anchored the stitch, you can now continue with the suturing

Figure 35: The locking stitch

SUTURING UPWARDS

In clinical situations you may also have to suture in the sideways or upward directions. We recommend that you practise each of the continuous suturing techniques in different directions - starting with an insertion of a knot at the bottom of the cut and working upwards.
FINISHING KNOTS

There are two main knots that can be used at the end of the continuous suture line to secure it.

The ‘rabbit ear’ finishing knot

The most commonly used knot to finish suturing is the ‘rabbit ear’ knot. Once you have reached the end of the incisions, insert the last stitch as illustrated here:

- Take the last bite with the needle
- Pull the suture through - but only partially, leaving enough thread out to form a ‘rabbit ear’ (hence the name), to allow you to tie a knot with it
- Start the knot by winding your suture round the tip of the needle holder: one-two-three in the outward direction;
- Grasp the tip of the folded thread forming the ‘rabbit ear’ and pull it through the loops
- One-two throws inwards, grasp and pull in the opposite direction
- One throw outwards, grasp and pull in the original direction
- Pull the suture and cut the ends

Figure 36: ‘The rabbit ear’ finishing knot

The ‘Aberdeen’ finishing knot

The Aberdeen knot is a hidden knot that gives good cosmetic results.

- When you have reached the end of an incision, bring the needle out centrally exactly on the midline
- As usual, guard the needle and put it to one side
- Pull the suture material through, leaving enough out to create a loop with your fingers
- The loop must be open at the base – it cannot be crossed or twisted
- Hold the loop open with your two fingers and a thumb
- Now reach for the thread with your index finger, grasp it, and pull it through the loop
- Repeat the same action for the second time: reach out for the thread with your finger, grasp it, and pull it through the loop
- And again, repeat for the third time
- You have now completed your ‘three throws’
- Next, pass the guarded needle through the loop
- Grasp the needle and pull the suture to tie the knot
• To bury the knot, insert the needle at the midline, and drive it through the tissues to exit at a distance
• Grasp the needle and pull the suture through
• To complete, pull the suture to create some tension, and cut it close to the skin. Once freed, the end should retreat under the skin and become invisible

Figure 37: Tying the ‘Aberdeen knot’

TYING KNOTS WITH FINGERS

Some practitioners use their fingers instead of instruments to tie the knots. We recommend that throughout your training you always use the instruments. However, throughout your working life, you may encounter situations where you have to use your fingers instead.

To make a surgical knot with your fingers you tie the ends of the thread three times:

• Left over right
• Then pull the ends tight in opposite direction to each other, keeping them close to the surface
• Then right over left
• Pull the ends tight in opposite direction
• And left over right again, pull the thread tight in opposite direction

As you tie a knot always keep the knot flat by pulling the ends close to the surface, and work with your fingers keeping the hands open.
PRACTISING ON TISSUE MATERIAL

Having practised tying different types of knots and suturing techniques on sponges you should now progress to practice on tissue material. Suturing on biological tissue expands your skills as the experience is more similar to real life situation suturing the perineum. You may use any material that is available, with or without the skin and involving different types of muscles. You will find some tissue easier than others to use, and some will give you a more realistic experience than others.

To prepare the tissue material for suturing practice, first make a straight or curved cut, or pull the tissue apart to mimic a perineal wound. You should start by systematically repeating inserting and tying various knots before progressing to experimenting with different suturing techniques that you have learnt in the section using the sponge model.

Please remember that the main purpose of using the tissue material is to mimic the tissue handling, grow in confidence and improve dexterity. It is not to provide the realistic model. Once you have become more confident in your ability to insert and control the needle, pulling the suture material through and tying the knots, you should be now ready to simulate perineal suturing on sponge pad and tissue material as presented in the next section. The more you experiment with different types of material, the quicker you will develop your dexterity and the easier you will find the next step - progressing to suturing the perineum.

Figure 38: Practising suturing on tissue material
CHAPTER 2: PERINEAL SUTURING

Introduction

The current recommendations relating to suturing of perineal trauma are as follows: The majority of first degree tears - if not bleeding extensively and with well aligned edges - can be left unsutured; the second degree tears and episiotomies should be sutured; labial tears should be sutured if they are significantly mal-aligned or bleeding; periclitoral and periurethral tears, due to their proximity to important organs, must be repaired only by those with extensive suturing skills and experience; third and fourth degree tears must be sutured only by those with specialist training in anal sphincter repair. This DVD demonstrates suturing of uncomplicated second degree tears and episiotomies which are the only types of perineal trauma suitable for repair by novice practitioners, and should be carried out under direct supervision until full competence is achieved.

REPAIR OF SECOND DEGREE TEARS AND EPISIOTOMIES

Suturing has to be carried out as a sterile procedure with all the necessary precautions. Typical second degree tears and episiotomies are sutured in three layers: the vaginal wall, perineal muscle and perineal skin. The current best practice guidelines recommend suturing of the vaginal wall and the perineal muscle using a continuous technique, followed by suturing of the skin using subcuticular technique. Evidence suggests that in some cases the skin layer may be left unsutured. For the purpose of teaching we will suture all three layers.

Figure 39: Suturing three layers

Suturing of a second degree tear

- First, identify the relevant anatomical structures and the apex of the wound
- Insert the knot inside the vagina just above the apex, at about two to three millimetres distance
- Now, using continuous technique, suture the vaginal wall moving towards the introitus
- Once you have reached the introitus, ensure that the hymenal ring is symmetrically brought together. Use the locking stitch or a knot to ensure stability
- Progress to suturing the perineal muscle, still using the continuous technique
- Once you have reached the lowest edge of the wound, reverse the direction and suture the skin layer moving upwards towards the introitus using the subcuticular technique
- Finish at the introitus with a knot
In cases where the perineal wound is very deep, it is recommended that the muscle is repaired in two layers:

- Identify the relevant anatomical structures and apex
- Insert the knot inside the vagina just above the apex
- Suture the vaginal wall using continuous technique
- Carry on using continuous stitching to suture the deep layer of perineal muscle, moving downwards towards the anus
- Once the lowest edge of the wound has been reached reverse the direction. Moving upwards towards the introitus, suture the superficial muscle layer using the continuous technique
- Once the introitus has been reached ensure that the hymenal ring is symmetrically brought together; use the locking stitch or a knot to ensure stability
- Now suture the skin using the subcuticular technique moving downwards towards the anus
- Finish with a knot
SIMULATED PERINEAL REPAIR USING A MODEL

You should now attempt to simulate perineal repair on a sponge or tissue model.

Prepare your model by making an incision and drawing lines representing the hymenal ring, the posterior vaginal wall, the vaginal opening with the hymenal ring at the introitus, and perineal skin and muscles.

Figure 42: preparing a model for simulation

Practising perineal repair using sponge models

- Remove the suture from the packet and guard the tip of the needle
- Taking deep bites insert the needle about 2 millimeters above the apex to achieve haemostasis
- Guard the needle to tie the knot
- 1-2-3 out, grab and pull; 1-2 in, grab and pull in the opposite direction; 1 out, grab and pull in the original direction
- Hold the suture and cut the end thread
- Now commence suturing of the vaginal wall
- Unguard the needle
- Grab and expose the tissue with your forceps
- Take full thickness bites not just of the vaginal mucosa but also of the underlying fascia. This is best achieved by rotating your forearm. Pull the suture to bring the edges together
- Insert the next stitch at the same distance and at the same depth and continue in this manner until you have reached the vaginal opening
- Bring the two sides of the hymenal ring together. It is important that the lines of the hymen are symmetrically opposed to each other
- Inserting the locking stich here will securely anchor the opposing edges of the hymenal ring together, and will allow you to continue suturing with the same suture without tying an additional knot
- Having inserted the locking stitch, come out at the centre
Now you are ready to continue the perineal repair with the same suture, using the continuous technique for perineal muscle, and the subcuticular method for the skin layer.

- Taking deep bites of equal depth and at equal distance, suture the muscle using the continuous technique
- Once you have reached the end of the incision, reverse the direction and simulate suturing the skin layer using the subcuticular technique.
- Finish with a knot at the introitus

Practising perineal repair using tissue models

Once you have completed your practice on a sponge pad model, to facilitate skill transfer to the clinical environment and build up your confidence and dexterity, you need to increase the level of difficulty by practice on biological tissue.

Observing surgical cases

In this section of the DVD you will observe two perineal repairs carried out during pelvic floor surgery for gynaecological conditions. This closely resembles suturing following childbirth, but is carried out under general anaesthetic and in controlled conditions. This will help you to develop further your visual acuity and enhance your understanding of the procedure.

Observing perineal repair following childbirth

Before you start suturing in a real life setting, you should first observe the practice of other clinicians on the labour ward or in a homebirth setting. You may notice slight variation in the procedure, however the main principles should remain the same. As a learner, you should discuss these differences with those you observed, always refer to the best practice guidelines to inform your practice, and be prepared to adjust your practice in view of new evidence. In this section of the DVD you will observe typical episiotomy repair and a repair of a second degree tear.

Please note that the ‘learning to suture’ section of the DVD contains detailed instructions and demonstrations of all techniques listed above, as well as an interview with a midwife discussing and reflecting on her experiences of learning to suture.
PROVIDING WOMAN CENTRED CARE

This section of the DVD starts with an interview with a new mum describing her experiences of having her perineum sutured.

When carrying out a perineal assessment and repair you must remain sensitive to the woman’s needs, aim to ensure her privacy, protect her dignity, create a safe environment and atmosphere of trust.

Explain to the woman the rationale for the assessment and possible repair and ask for her permission to carry it out as soon as possible. Unless there is excessive bleeding, encourage a few moments of rest following the birth for the woman and her companion to welcome the baby. After a short time, ask if she feels ready for the examination and repair. Discourage unnecessary delay by explaining that to ensure the best clinical outcome perineum should be repaired within the first hour after birth.

Ask where she would like to have her baby during the procedure, and whether she wants to continue skin-to-skin contact or breastfeeding. This can be beneficial to some women, as having her baby next to her can act as a positive distraction and lower the pain and anxiety levels. Alternatively, her companion may hold the baby, or she may choose to put the baby in the cot by her bed.

Ensure the woman’s privacy and dignity all the way throughout the assessment and repair. Remember that for health professionals this is a routine part of our daily job; for many women this can be a very uncomfortable, embarrassing, and even traumatic experience.

During the procedure you must also consider the woman’s companion. Discourage the woman’s partner from observing the perineum - research suggests that this could lead to development of psycho-sexual and marital problems. Do it in a sensitive manner. Ask the woman where she would like her companion to sit, or whether she would possibly prefer them to leave the room altogether.

Good lighting is essential. You need to ensure the maximum comfort for yourself and for the woman. Make sure you have your stool at the correct height to make the suturing easier and more effective. As you become more experienced, for a repair of small tears you will not always need lithotomy poles, but you will find them helpful as a beginner. Place the woman’s legs into lithotomy poles gently and with care. Ensure that her legs are not opened too far apart - the lithotomy position can exaggerate the gaping of the wound, and therefore cause problems with tension of the suturing material. For some women the lithotomy position may make them feel more vulnerable. Ensure that her genitalia are not exposed unnecessarily but covered with a sheet until you are ready to start the procedure.

Pain control At the beginning of the assessment, enquire about pain. If needed, use the entonox for the examination. If you expect to suture – for example if you have noticed tearing during the delivery – to prevent unnecessary discomfort, consider using local analgesia for full assessment as well as the repair. Research suggests that a large proportion of women report suturing as more traumatic than the birth itself. Ensure that suturing you carry out is pain free. Most women will require the maximum dose of local anaesthetic, such as 20 millilitres of lignocaine. Do not hesitate using it. If the woman still experiences considerable pain do not continue with the suturing but ask a doctor to prescribe a higher dose, or consult the anaesthetist. Remember that even women who had an epidural may experience pain. In those cases either top up the epidural or use local anaesthetic. Before you commence a repair, inject the anaesthetic solution into the vagina and perineum along the laceration line in a similar manner as for the episiotomy.
Homebirth To assess and repair perineal trauma following homebirth, some re-adjustments to the woman’s bedding and surrounding furniture may be necessary in order to achieve the best access to the perineal area as well as comfort for the woman and the practitioner. Most small tears and episiotomies can be safely sutured at home, following the usual procedure. However, women who have sustained excessively large or complicated tears should be transferred for a repair in a hospital environment. All third and fourth degree tears must be repaired in an operating theatre by an experienced practitioner.

Documentation Once you have completed the procedure, document detailed information about the perineal trauma and type of repair carried out. Visual representation of the lacerations sustained by the woman in a form of a drawing should be added on. It is a good practice to contact the woman at the end of the extended postnatal period, for example after six weeks, to receive feedback on the outcome of the repair. This is especially important if the repair was complicated or carried out by a novice practitioner.

POSTNATAL CARE OF THE PERINEUM

Following childbirth, most women will experience temporary pain and discomfort in the perineal area. For women who required suturing, the vicryl rapide sutures should dissolve within seven to 10 days. Other types of material may take longer. In the majority of cases perineums heal fast and well. Some women will experience short or long term complications, and some will require a referral for the assessment and treatment in a specialist perineal clinic.

Postnatal perineal complications

Perineal infection. Infection is often due to poor antiseptic technique during the suturing procedure, poor hygiene standards on the postnatal ward, or poor maintenance of hygiene by the woman herself. Perineal infections should be monitored and treated with antibiotics.

Wound dehiscence is often caused by the perineal infection, by the woman’s body rejecting the suturing material, or by poor suturing technique of the person carrying out the perineal repair. In most – but not all – cases, the wound dehiscence is treated conservatively at first, and often spontaneous healing gives satisfactory results. If perineal revision is required, the best results are usually achieved once the spontaneous healing has taken place. Management of wound dehiscence should be determined by a specialist on one to one basis.

Excessive granulation tissue on the side of the repair is common, and is easily treated by an experienced clinician with a topical application of silver nitrate.

Haematomas are uncommon but may be associated with significant morbidity most commonly pain. They are often linked to traumatic or instrumental delivery. They can be external or occur internally anywhere inside the birth canal. Any excessive perineal pain should be investigated, and patients with a suspected – or diagnosed – haematoma should be assessed and managed by a specialist. In a minority of cases surgical intervention may be required.

Urinary and faecal symptoms such as incontinence, voiding difficulties, defecatory pain, or difficulty with bowel emptying, may be transient in the early stages after delivery, or persist over a longer period of time. Haemorrhoids and anal fissures are common. Many women with symptoms in the early stages following childbirth may be managed conservatively, but those with severe or persistent symptoms should be referred for further evaluation. Specialist input from a women’s physiotherapist, urogynaecologist or a colorectal surgeon may be necessary. Regular pelvic floor exercises in the antenatal and postnatal period could prevent or minimise some of these problems.
Milder forms of vaginal prolapse and a degree of weakening of the pelvic floor are common in the first few months after childbirth. Sometimes this can be linked to less severe forms of incontinence or dyspareunia. In most cases these problems improve spontaneously with the passage of time or when the woman stops breastfeeding. This process can be facilitated by regular pelvic floor exercises.

Some of the sexual and relationship difficulties experienced by couples after the birth of their baby can be due to poor suturing of the perineum, complications with healing, childbirth related psychological trauma, or hormonal changes taking place in a woman's body in the first year after childbirth and when breastfeeding. One of the most common causes of dyspareunia is vaginal atrophy due to decrease in serum oestrogen levels while the woman continues breastfeeding. There could be also physical obstruction in the form of webbing, labial fusion, or excessive introital or vaginal narrowing following repair. More commonly women experience widening or laxity of the vaginal opening. This may be associated with decreased sensation during sexual intercourse, or less often the passage of vaginal wind.

PERINEAL CARE ADVICE

Advice on perineal care following childbirth is relevant to all women who have given birth vaginally:

- It is normal to experience some degree of perineal discomfort in the first few days after giving birth vaginally, even in women who did not sustain any injury. However, any excessive pain should be reported to a health care professional and investigated.

- Pain relief such as paracetamol or ibuprofen, if required, should be taken regularly. In some cases stronger medication is required, but drugs containing codeine should be avoided as they increase the risk of constipation which could delay healing.

- It is important to empty the bladder and bowels regularly. Any problems with passing urine, constipation, or incontinence of urine or faeces should be reported to a health care professional, investigated, and treated accordingly.

- Rest and a healthy, varied diet facilitate healing

- Large amount of fluids should be taken, especially by women who are breastfeeding, to prevent dehydration, and to dilute the urine which, if concentrated, could cause stinging in the perineum and lead to bladder infection.

- It is a good practise to maintain high hygienic standards by frequent washing of the perineal area, pouring lukewarm water over the perineum after each visit to the toilet, and changing the sanitary towel regularly every two to four hours. Frequent baths can be soothing, but long soaking should be avoided. Using soaps, bubble baths, salt or disinfectant in water should be avoided as they can interact with the healing process. A few drops of tea tree or lavender oil added to a wash could be beneficial due to their antiseptic, anti-inflammatory and antifungal properties.

- Excessively swollen or painful perineum can be temporarily relieved using cold therapy, by applying carefully wrapped ice cubes or commercially available cooling pads as a compress to the perineal area.

- Occasional exposure of the perineum to the circulating air by short-term removal of the underwear and sanitary towels could be of some benefit.
• It is important to avoid standing or sitting in one position for long periods. This will exert pressure on the perineum, increase the pain, and slow the blood circulation which is an essential component of the healing process. It may be advisable to breastfeed lying on a side or to support the sitting position by careful arrangements of pillows to re-direct the pressure away from the perineal area.

![Figure 44: Arrangement of a blanket and pillows for sitting](image)

• Loose clothing should be worn and tight trousers and jeans should be avoided until the perineum is fully healed.

• Pelvic floor exercises should be performed regularly a few times a day as soon as possible. This will facilitate healing by increasing the blood flow to the area, and in some cases help to prevent or minimise any possible continence problems. Women who have a urinary catheter in situ, should start pelvic floor exercises only once the catheter is removed.

![Figure 45: Breastfeeding lying on a side](image)

The DVD finishes with a Women’s Health Physiotherapist outlining the lifetime benefits of the pelvic floor exercises and providing instructions how to do them.