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Repair of Episiotomy, First and Second Degree Tears

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3.1 Introduction

The morbidity associated with perineal injury related to childbirth constitutes a major health problem, affecting millions of women worldwide. The majority of women following vaginal delivery will suffer some degree of perineal pain or discomfort during the early postpartum period.¹ In the UK alone, approximately 1,000 women per day will require perineal repair following vaginal birth. Pain associated with perineal trauma can be very distressing for the new mother and may interfere with her ability to breast feed and cope with the daily tasks of motherhood.² It also appears to have a clear causal association with sexual dysfunction and ultimately may affect the woman's relationship with her partner.

In the UK, up to 44% of women will continue to have pain and discomfort for 10 days following birth³ and 10% of women will continue to have long-term pain at 18 months postpartum.⁴ Furthermore, 23% of women will experience superficial dyspareunia at 3 months postpartum;⁵ up to 10% will report faecal incontinence⁶ and approximately 19% will have urinary problems.⁷ The rates of complications reported by women depend on the severity of perineal trauma and on the effectiveness of treatment.

A North American, randomised controlled trial (RCT) of restrictive versus routine or liberal use of median episiotomy was performed by Klein and colleagues.⁸ They found that spontaneous tears were less painful than episiotomies, both

immediately postpartum and at 3 months follow-up. At 3 months postpartum, 42% of women with an intact perineum versus 53% with a spontaneous tear, 54% with an episiotomy, and 79% with a third or fourth degree laceration experienced perineal pain. Nearly a quarter of the women with an episiotomy or third or fourth degree laceration described the pain as horrible and excruciating.⁸

Following a detailed review of the literature relating to this particular area, several key issues emerged, which may have a direct effect on the extent of morbidity experienced by women following perineal repair. These issues include: the extent of perineal damage, the technique and materials used for suturing and the skill of the person performing the procedure. If the suturing is performed perfunctorily it may have a major impact on women's health as well as significant implications for health service resources. It is important that practitioners ensure that routine procedures, such as perineal repair, are evidence-based in order to provide quality care that is effective, appropriate and cost-efficient, as set out in the UK's government consultation document *A first class service*.⁹ However, it would appear that a dichotomy exists between some aspects of routine practice and the utilisation of research findings. There are a number of reasons given for this, some of which include lack of knowledge and skills, resistance to change, personal preference, tradition, restrictive local policies and lack of support.¹⁰

3.2 Prevalence

Despite the fact that maternity care has vastly improved over the past decade, women still sustain various degrees of perineal trauma following vaginal births. This is one aspect of childbirth that women appear to be unprepared for. Findings from a fairly recent large RCT indicate that 85% of women who have a vaginal birth will sustain some form of perineal trauma¹¹ and up to 69% of these will require stitches.^{7,11} However, these rates vary considerably according to the policies of individuals, and institutions throughout the world. It is difficult to ascertain global rates of spontaneous perineal trauma requiring suturing due to classification inconsistencies and a lack of reporting perineal trauma.

3.3 Definition

Perineal trauma during vaginal birth may occur either spontaneously or when the midwife or obstetrician facilitates delivery by making a surgical incision (episiotomy) to increase the diameter of the vulval outlet. The term “episiotomy” actually refers to cutting the pudenda (external genitalia), whereas the term “perineotomy” is defined as an incision of the perineum and is the more accurate term.¹²

Anatomically, the perineum extends from the pubic arch to the coccyx and is divided into the anterior urogenital and posterior anal triangle. Anterior perineal trauma is defined as injury to the labia, anterior vagina, urethra or clitoris. Trauma in this area is associated with less morbidity. Little is known about the long-term effects of anterior perineal trauma. Posterior perineal trauma is defined as any injury to the posterior vaginal wall, perineal muscles or anal sphincters (external and internal) and may include disruption of the rectal mucosa.¹³

3.4 Classification of Perineal Trauma

Spontaneous perineal trauma can be subdivided into the following classifications according to the extent of the tissue damage:

1. First degree, which is very superficial and may involve:
 - skin and subcutaneous tissue of the anterior or posterior perineum
 - vaginal mucosa
 - a combination of the above resulting in multiple superficial lacerations.
2. Second degree, which is deeper and may involve:
 - superficial perineal muscles (bulbospongiosus, transverse perineal)
 - perineal body.

Second degree trauma usually extends downwards from the posterior and/or lateral vaginal walls, through the hymenal remnants, towards the anal margin and it usually occurs in the weakest part of the stretched perineum. If the trauma is very deep, the levator ani muscles (pubococcygeus) may be disrupted. Less frequently, the tear extends in a circular direction, behind the hymenal remnants, bilaterally upwards towards the clitoris, causing the lower third of the vagina to detach from underlying structures.¹⁴ This type of complex trauma causes vast disruption to the perineal body and muscles but the perineal skin may remain intact, making it difficult to repair.

An episiotomy usually involves the same structures as a second degree tear but occasionally spontaneous trauma may occur simultaneously, resulting in more complex perineal injury.

3.5 Training

Prior to 1970, midwives in the UK were not permitted to perform perineal repairs and midwifery textbooks contained very little information relating to this particular area of childbirth. In fact, it was not until 1983 that perineal repair was included in the midwifery curriculum in the UK when the European Community Midwives Directives came into force and the CMB issued the following statement: “*Midwives may undertake repair of the perineum provided they have received instruction and are competent in this procedure*”.

It is current practice in the UK for the attending midwife to suture perineal trauma, which has been sustained during a normal delivery,

providing it is within her or his scope of practice.¹⁵ There are wide variations between hospitals and practitioners in suturing techniques and materials chosen for perineal repair. Quite often the techniques used by individual practitioners originate from the way they were first taught, rather than being firmly based on clinical evidence.

A survey in London, carried out to assess the knowledge of trainee doctors ($n = 75$) and qualified midwives ($n = 75$) concerning perineal trauma and anatomy, found that only 20% of doctors and 48% of midwives considered their training satisfactory.¹⁶ Indeed, many of the answers relating to anatomy and classification of perineal repair given by the respondents were incorrect. McClellan¹⁷ surveyed senior obstetrics and gynaecology house officers in the USA concerning their experience and knowledge of perineal repairs. Representatives from one half of the programmes responded. Sixty per cent of residents reported receiving no didactics or formal training on episiotomy techniques. Only 7% had repaired more than 20 fourth degree lacerations and 40% reported repairing more than 20 third degree lacerations. This research highlights the discontent among trainee doctors and midwives with their training in perineal repair and recommends that more intense and focused training should be provided.

Consumers of midwifery services have also expressed dissatisfaction following their personal experiences of perineal repair. Most concerns were directly related to training issues, some of which include the operator being inexperienced and unsupervised or having to learn by trial and

error.^{18,19} A further consideration is that most practitioners have no means of observing the long-term effects of the perineal suturing in order to audit their own practice.²⁰ Furthermore, there are wide variations throughout the UK in the way the procedure is taught, supervised and assessed, as currently there are no national guidelines relating to the training of operators. Practitioners who are appropriately trained and assessed will be more likely to provide a consistently high standard of perineal repair, which might have a direct effect on the short- and long-term reduction of morbidity associated with this procedure.

In the USA, where more than 90% of deliveries are performed by physicians, midline episiotomy has been standard practice. Questions about the efficacy and benefit of episiotomy began to arise in the 1970s. Several studies found that midline episiotomies actually provide little benefit and in fact increase morbidity with higher third and fourth degree lacerations, greater blood loss, greater risk of infection and fistula, and increased postpartum pain.²¹⁻²³ Practitioners have been slow to respond to the evidence, but a significant decrease in the episiotomy rate has occurred over the past 20 years from 63.9 per 100 vaginal deliveries in 1980 to 39.2 per 100 vaginal deliveries in 1998 ($P < 0.05$).^{24,25} The decreases have occurred for women of all ages, races, source of payment categories and in all regions of the USA. As a result, there has also been a steady decline in the number of third and fourth degree lacerations (Figure 3.1).^{24,25}

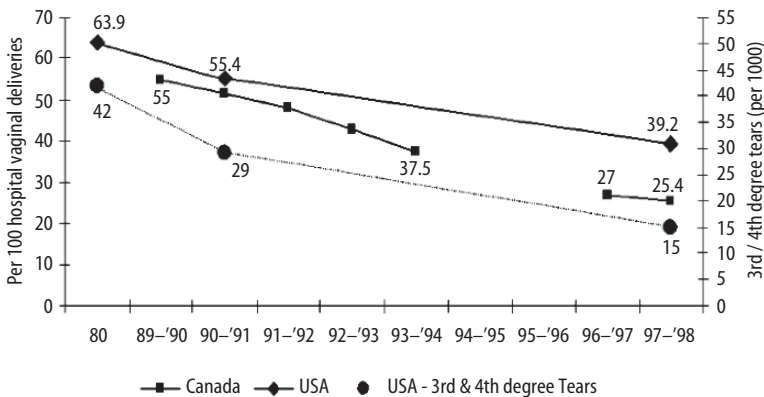


FIGURE 3.1. Episiotomy rates in Canada and the USA between 1980 and 1998. (Klein.²⁵)

3.6 Non-suturing of First and Second Degree Tears

The controversy regarding the best management of perineal trauma relating to suturing following childbirth has continued throughout the centuries. Some accoucheurs considered that perineal trauma should be left unsutured to facilitate subsequent deliveries, while others disputed that the woman and her partner would benefit if it were sutured. In the mid-twentieth century, Magdi²⁶ reported that the incidence of perineal trauma at the Kasr El Aini Hospital in Cairo was 24% in primiparous women as compared to 1.9% in multiparous women. He associated this remarkably low rate of perineal injury among multiparous women to the fact that many of them had sustained damage during previous deliveries, which was left unsutured by the attending midwife. Magdi²⁶ stated that it was deplorable that midwives were in the habit of ignoring perineal trauma and “neither practising nor calling for suturing to be performed.” Indeed, it would appear that midwife advocacy of non-suturing perineal trauma following childbirth is not a new concept.

Non-suturing of first and second degree tears is becoming widespread in the UK despite the deficiency of reliable research evidence to support this practice.^{27–29} Metcalfe and colleagues³⁰ reported that up to 50% of first and second degree tears were not sutured in some hospitals within the West Midlands, UK. Midwives who advocate this practice claim that women experience less pain and infection and the wound heals at a faster rate. However, those who support suturing question what subsequent effects non-suturing may have in relation to wound healing, aesthetics, sexual function, pelvic floor muscle strength, incontinence and prolapse. In the USA, suturing remains the primary management of perineal trauma following childbirth.

To date, there have been three small retrospective cohort studies carried out in the UK and two small RCTs in Sweden and Scotland to evaluate the effects of leaving first and second degree tears unsutured following childbirth.^{28,31–34} The three retrospective studies (total $n = 212$ women) report no difference in morbidity or wound healing for

women with perineal tears that were left unsutured. However, the results must be interpreted with caution due to their poor methodological quality.^{28,31,32} The two RCTs compared the effects of non-suturing versus suturing of first and second degree tears.^{33,34} The RCT ($n = 78$ primiparous women) carried out in Sweden found a non-significant increase in short-term discomfort (burning sensation and soreness) associated with non-suturing and no difference in rates of wound healing between groups; however, it is unclear how healing was defined and assessed.³³ The other RCT ($n = 74$ primiparous women), carried out in Scotland,³⁴ found no significant difference in McGill pain scores at 10 days and 6 weeks between non-suturing and suturing. Conversely, Fleming and colleagues³⁴ reported that significantly more women in the sutured group had good wound approximation at 6 weeks postpartum.

This dearth of research provides very little sound evidence of good methodological quality to support this controversial practice. Therefore, practitioners must be cautious about leaving trauma unsutured unless it is the explicit wish of the woman.³⁵

3.7 Suture Methods

Perineal trauma is conventionally repaired in three layers (Figure 3.2). First, a continuous “locking” stitch is inserted to close the vaginal trauma, commencing at the apex of the wound and finishing at the level of the fourchette with a loop knot. A traditional “locking” stitch is used to repair the vaginal trauma, as a continuous “running” stitch may cause shortening of the vagina if it is pulled too tight, but no controlled studies have been carried out to investigate this theory. Next, the deep and superficial perineal muscles are re-approximated with three or four interrupted sutures, or sometimes a continuous running stitch is used. Finally, the skin is closed using continuous subcutaneous or interrupted transcutaneous techniques.³⁶

3.7.1 Non-suturing of Perineal Skin

Pretorius³⁷ published his experience of using a simple technique for episiotomy repair, whereby

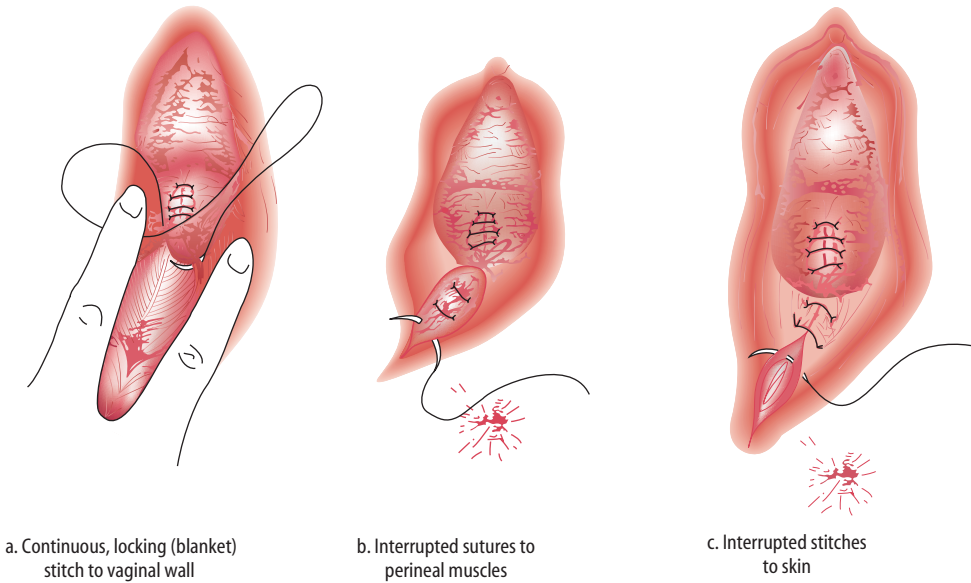


FIGURE 3.2. The traditional interrupted method of perineal repair.

perineal trauma was re-approximated with a few catgut sutures and the vaginal mucosa and perineal skin were left unsutured. He found that although initially the separation of the skin edges looked “alarming”, the wound healed rapidly with minimal scarring and very few problems. In addition, the women were able to move in and out of bed freely without the use of analgesics or ice packs.

More recently, two RCTs that compared leaving the perineal skin unsutured but apposed (the vagina and perineal muscle were sutured) versus suturing all three layers (a more conventional repair) found conflicting results relating to perineal pain.^{38,39} The first RCT ($n = 1,780$ primiparous and multiparous women with first and second degree tears or episiotomies after spontaneous or assisted vaginal delivery) was carried out in a single UK centre and reported no significant difference between groups in perineal pain at 10 days postpartum.³⁸ The second multicentre RCT carried out in Nigeria³⁹ ($n = 823$ women who sustained a second degree tear or episiotomy) found that leaving the perineal skin unsutured significantly reduced the proportion of women with perineal pain up to 3 months after delivery.³⁹ Both trials reported a significant increase in wound gaping at 2 days postpartum in the unsutured perineal skin groups, which persisted up to 10 days but did not

reach statistical significance in the Nigeria trial. The UK³⁸ and Nigeria³⁹ trials found that leaving the perineal skin unsutured significantly reduced superficial dyspareunia at 3 months after birth.

3.7.2 Perineal Skin Closure

A Cochrane systematic review of four European and one UK RCTs ($n = 1,864$ primiparous and multiparous women) found that a continuous subcuticular technique of perineal skin closure, when compared to interrupted transcutaneous stitches, was associated with less perineal pain up to 10 days postpartum.⁴⁰ However, only three of the trials^{41–43} presented data on short-term pain in a suitable format for inclusion in the analysis and only one study⁴² actually demonstrated statistical significance between the two intervention groups. No clear differences were seen in the need for analgesia, resuturing of the wound or dyspareunia between groups. Based on one trial ($n = 916$ women), sutures were removed less frequently in the continuous subcuticular group, but there were no significant differences in long-term pain.⁴³

3.7.3 Continuous Repair of All Layers

Although researchers have suggested for over 70 years that continuous repair techniques are supe-

rior to interrupted suture methods in terms of reducing perineal discomfort during the early postpartum period, these techniques have not been widely used.^{42,44-51} This may be due to lack of sound scientific evidence to support this practice, as most of the earlier findings were based on comparative case series or observational studies. Christhilf and Monias⁴⁶ suggest that another reason why continuous techniques are not received more favourably is that the lack of knots engenders some insecurity for the obstetrician. Similarly, Fleming⁵⁰ stated that even though researchers advocate the continuous technique in terms of reducing perineal pain and increasing mobility, practitioners admit personal uneasiness when first exposed to non-traditional repairs.

More recently, based on the observational study by Fleming,⁵⁰ Kettle and colleagues³⁶ conducted a large factorial design RCT ($n = 1,542$ women) to compare the effects of using a loose continuous suturing technique throughout the repair with the more traditional interrupted method. The study found that the continuous technique significantly reduced perineal pain at 10 days, which persisted up to 12 months after childbirth but did not reach statistical significance. Indeed, for every six women who were sutured with the continuous technique, there was one less who complained of pain at 10 days compared to those sutured with the interrupted method. Kettle and colleagues³⁶ reported no significant difference in rates of superficial dyspareunia between groups at 3 or 12

months postpartum. However, suture removal was significantly reduced up to 3 months postpartum in the continuous suture group.

Indeed, the findings of this study now provide scientific evidence to support earlier research, which suggested the loose continuous suturing technique was associated with a reduction in perineal pain. The results of the RCT carried out by Kettle and colleagues³⁶ relating to pain at 10 days postpartum accord with the findings of the Cochrane systematic review, which compared continuous subcutaneous and interrupted transcutaneous methods used for perineal skin closure.⁵² Data were presented in a suitable format for meta-analysis in only three of the trials included in the systematic review⁴¹⁻⁴³ (Figure 3.3). It is interesting to note that the suturing technique used in the experimental group of the Isager-Sally et al. trial,⁴² which demonstrates statistical significance between groups, was very similar to the continuous technique described by Kettle and colleagues.³⁶

The difference in pain between suturing methods is thought to be due to increasing suture tension caused by oedema. With the continuous technique of repair, tension is transferred throughout the whole length of the single knotless suture in comparison to interrupted stitches, which are placed transversely across the wound. Another important factor, which could also contribute to this reduction in pain, is that the continuous skin sutures are inserted into the subcutaneous tissue,

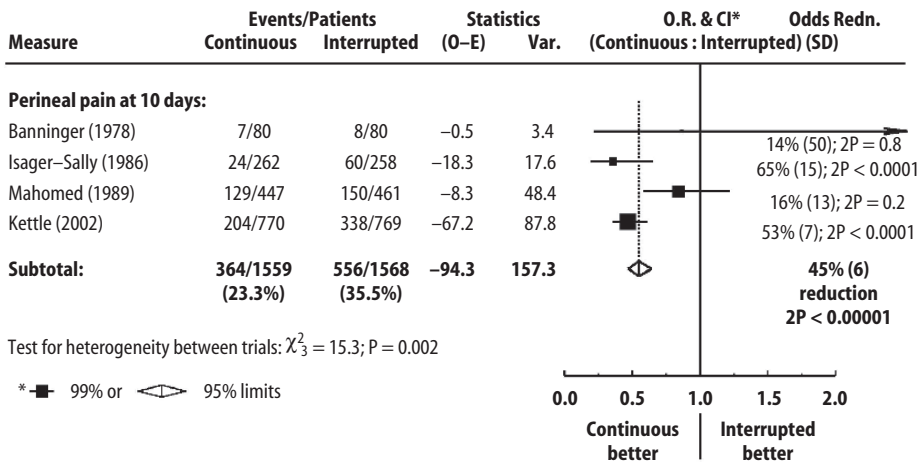


FIGURE 3.3. Meta-analysis of trials – perineal pain at 10 days postpartum.

thus avoiding nerve endings in the skin surface, whereas interrupted transcutaneous sutures are inserted through the skin. Given that the benefits are apparent by 2 days, this explanation seems most plausible.³⁶ Another advantage of the continuous technique is that only one packet of suture material is usually required to complete the repair, as compared to two or three packets used for the interrupted method, thus reducing the overall expenditure for hospitals.

3.8 Suture Materials

Throughout the ages many techniques have been utilised to close wounds. Between 50,000 and 30,000 BC, “eyed” needles were invented.⁵³ Other references indicate that linen strips coated with an adhesive mixture of honey and flour (similar to steri-strips) were used to close wounds. In the late nineteenth and twentieth centuries, catgut was favoured to repair perineal tears because stitches dissolved, whereas silkworm gut sutures usually had to be removed on the seventh day. Other materials that have been used for perineal repair over the past 50 years include, nylon, polyamide Supramid, prolene, chromic catgut, softgut and tissue adhesive.

Sutures are inserted to maintain wound closure, control bleeding, minimise the risk of infection and expedite healing. Well-aligned perineal wounds heal by primary intention with minimal complications, usually within 2 weeks of suturing. Wound edges must be re-approximated without tension, otherwise the tissue may become devascularised, resulting in disruption of the healing process.⁵⁴ Suture materials should cause minimal tissue reaction and be absorbed once the wound has healed.⁵⁵ Most skin requires suture support for approximately 8–14 days to achieve adequate healing. If sutures are placed transcutaneously and are left in situ longer than this period, they may become infected or cause “tram line” scars. Taylor and Karran⁵⁵ suggest that the use of synthetic absorbable suture material will avoid this problem.

Polyglycolic acid (Dexon[®], Davis & Geck Ltd, UK) and polyglactin 910 (Vicryl[®], Ethicon Ltd, Edinburgh, UK), introduced in 1970 and 1974 respectively, are the two most common absorb-

able synthetic suture materials used for perineal repair. Standard polyglactin 910 (Vicryl) sutures are prepared from a copolymer of glycolide and lactide in a ratio of 90/10 and the substances are derived from glycolic and lactic acids.⁵⁶ The material is braided to improve handling and is coated with a mixture of a copolymer of lactide and glycolide in the ratio of 65/35 and an equal ratio of calcium stearate to reduce bacterial adherence and tissue drag.^{56,57} During the manufacturing process, the material is dyed a bright violet colour to improve visualisation during surgical procedures.⁵⁸ It is attached to various sized stainless steel needles and sterilised by ethylene oxide gas. Polyglycolic acid sutures (Dexon) are produced from a homopolymer of glycolide and no dye is added, so the resulting material is a light tan colour. The polymer is converted into a braided suture material, which is very similar in composition to standard polyglactin 910.⁵⁷ This material is designed to maintain wound support for up to 30 days and is not totally absorbed from the tissue until approximately 90–120 days.⁵⁹ The long absorption period means that the suture material is retained in the tissue beyond the required healing time, whereby it becomes a potential source of infection, defeating the purpose of using absorbable stitches.⁵⁷

3.8.1 Absorbable Synthetic Versus Catgut Suture and Material

A Cochrane systematic review of eight RCTs conducted in Europe and the USA ($n = 3,642$ primiparous and multiparous women) compared absorbable synthetic (standard polyglactin 910 or polyglycolic acid) versus catgut suture material for perineal repair.⁵² The systematic review found that absorbable synthetic material significantly reduced short-term perineal pain, analgesia use within 10 days, rates of suture dehiscence and resuturing compared with catgut. At 3 months, there was no significant difference in perineal pain or dyspareunia between absorbable synthetic sutures and catgut. Fewer wounds needed resuturing in the absorbable synthetic groups up to 3 months postpartum, but there was no clear difference in terms of long-term pain and dyspareunia. Two of the trials ($n = 2,129$ women) found that

absorbable synthetic suture material was associated with an increased risk of suture removal up to 3 months postpartum.^{43,60}

3.8.2 Rapidly Absorbed Polyglactin 910 Suture Material

More recently, a new absorbable polyglactin 910 material (Vicryl Rapide[®]) has appeared on the market. It was first released to the German market in 1987 but it was not available in the UK until after the introduction of CE (Conformité Européenne) marketing in 1994. The new, more rapidly absorbable polyglactin 910 material was not actually licensed for use in the UK until 1996 but has been available in the USA since 1995 (data on file at Ethicon Research Foundation). The new suture material is identical to standard polyglactin 910 (coated Vicryl) in chemical composition but it is undyed and due to a change in the manufacturing process, is absorbed in less time. Its tensile strength is reduced in 10–14 days and it is completely absorbed by the tissue in 42 days.⁶¹ The more rapid absorption characteristics are achieved by exposing the material to gamma irradiation during the sterilisation process, resulting in a suture with a lower molecular weight than standard polyglactin 910 (coated Vicryl), which is more readily hydrolysed.⁶¹ Hydrolysis is the absorption mechanism whereby water penetrates the implanted sutures and causes breakdown of the fibres polymer chain with minimal inflammatory response. The degraded lactide and glycolide acid material is then eliminated from the body mainly in urine and faeces (data on file at Ethicon Research Foundation).

Three RCTs ($n = 2,003$ women) have been carried out in Denmark, Northern Ireland and the UK to compare the effects of the new, more rapidly absorbed polyglactin 910 (Vicryl Rapide) with standard polyglactin 910 suture material.^{36,62,63} The three trials found no clear difference in short-term pain between groups. However, two of the RCTs ($n = 1,850$ women) carried out by Gemynthe et al.⁶² and Kettle et al.³⁶ found a significant reduction in “pain when walking” at 10–14 days postpartum. Only one of the trials ($n = 153$ women) reported by McElhinney et al.⁶³ found a reduction in superficial dyspareunia at 3 months postpar-

tum. All three RCTs^{36,62,63} found that the new, more rapidly absorbed polyglactin 910 compared to standard polyglactin 910 suture material was associated with a significant reduction in the need for suture removal up to 3 months following childbirth. Therefore, in the light of current evidence, the new, more rapidly absorbed polyglactin 910 (Vicryl Rapide) is the most appropriate suture material for perineal repair.¹³

3.9 Management of Perineal Trauma

3.9.1 Assessment of Perineal Trauma: Basic Surgical Principles

Perineal trauma following childbirth, which has been carefully sutured, generally heals very rapidly within 2 weeks of the repair by primary intention. This is probably due to the fact that the perineal area, immediately after parturition, provides optimal conditions that are necessary for the promotion of quality healing. Some of these include moisture, warmth, increased vascularity, reduced exposure, and a favourable pH of approximately 4.5 (acid), in which organisms are usually unable to grow. Indeed, probably the most common local factor associated with delayed perineal wound healing and dehiscence is infection, which causes reduced collagen synthesis. This adversely causes the wound edges to be softened, which may result in sutures “cutting out” of the tissue with subsequent wound breakdown.

The following basic surgical principles should be followed when performing perineal repairs:

- Suture as soon as possible after childbirth to prevent excessive blood loss and to minimise the risk of infection.
- Check equipment and count cotton swabs and sponges prior to commencing the perineal repair and repeat following completion of the procedure.
- Obtain proper lighting to enable the operator to fully visualise the extent of the trauma and to identify the structures involved.
- Transfer the patient to an operating room and have adequate anesthesia regional or general if needed. An indwelling catheter should be

- inserted for 24 hours to prevent urinary retention.
- Ask for more experienced assistance if the trauma is beyond the operator's scope of practice.
 - Close dead space and ensure haemostasis is achieved to prevent haematoma formation.
 - Sutures must not be over-tightened; this might cause tissue hypoxia, which subsequently may delay the healing process.
 - Tie sutures securely using a square surgeon's knot.
 - Ensure good anatomical alignment of the wound and also give consideration to the cosmetic results.
 - Count cotton swabs and sponges to prevent any unwanted packs being left in the vagina.

3.9.2 First Degree Tears and Labial Lacerations

First degree tears must be sutured if there is excessive bleeding or if there is any uncertainty regarding alignment of the traumatised tissue, which may affect the healing process. If the tear is left unsutured, the midwife or doctor must discuss the implications with the woman and obtain her informed consent. Details regarding the discussion and consent must be fully documented in the woman's case notes.

Labial lacerations are usually very superficial but may be very painful. Some practitioners do not recommend suturing, but if the trauma is bilateral the lacerations can sometimes adhere together over the urethra and the woman may present with voiding difficulties. It is important to advise the woman to part the labia daily during bathing to prevent adhesions from occurring.

3.9.3 Repair of Episiotomy and Second Degree Tears

Prior to performing the perineal repair, the practitioner must prepare the equipment according to practice policies and guidelines. Safety glasses and gloves must be worn during all obstetric procedures to protect the operator against HIV and hepatitis infection. The woman should be placed in a comfortable position so that the trauma can

easily be visualised and her dignity maintained throughout the procedure. Perineal tears and episiotomies are repaired under aseptic conditions and the area should be cleaned prior to commencing the suturing according to local policy. A rectal examination should be performed routinely when assessing perineal injury to avoid missing trauma to the anal sphincters (internal or external). This should be repeated once the repair is complete to ensure that suture material has not been accidentally inserted through the rectal mucosa.

It is not necessary to use lithotomy poles or stirrups to support the woman's legs during the repair as restraining her legs may bring back repressed memories of sexual abuse, making her feel helpless and out of control.⁶⁴ Furthermore, leg restraints (high stirrups or lithotomy poles) as suggested by Borgatta,²¹ cause flexion and abduction of the woman's hips, resulting in excessive stretching of the perineum, which may cause the episiotomy or tear to gape. This, apart from being uncomfortable for the woman, may make the trauma difficult for the operator to realign and suture. Furthermore, there is no need to use a tampon, as this may obscure visualisation of the apex of the vaginal trauma. Excessive uterine bleeding should be managed appropriately prior to commencing the perineal suturing.

Ensure that the wound is adequately anaesthetised prior to commencing the repair. It is recommended that 10–20 ml of lignocaine 1% is injected evenly into the perineal wound. If the woman has an epidural, it may be "topped-up" and used to block perineal pain during suturing instead of injecting local anaesthetic. However, Kahn and Lilford⁶⁵ recommend that if an epidural is used, the perineal wound should be infiltrated with normal saline or local anaesthetic to mimic tissue oedema and prevent over-tight suturing.

3.9.4 The Continuous Suturing Technique

It can be concluded from current robust research evidence that perineal trauma should be repaired using the continuous non-locking technique to re-approximate all layers (vagina, perineal muscles and skin) with absorbable polyglactin 910 material (Vicryl Rapide).

3.9.4.1 Suturing the Vagina

The first stitch is inserted above the apex of the vaginal trauma to secure any bleeding points that might not be visible. Close the vaginal trauma with a loose, continuous, non-locking technique, making sure that each stitch is inserted not too wide, otherwise the vagina may be narrowed. Continue to suture down to the hymenal remnants and insert the needle through the skin at the fourchette to emerge in the centre of the perineal muscle trauma (Figure 3.4.1).

3.9.4.2 Suturing the Muscle Layer

Check the depth of the trauma and close the perineal muscle (deep and superficial) with continuous non-locking stitches. If the trauma is deep, the perineal muscles can be closed using two layers of continuous stitches. Re-align the muscle so that the skin edges can be re-approximated without tension, ensuring that the stitches are not inserted through the rectum or anal canal (Figure 3.4.2).

3.9.4.3 Suturing the Perineal Skin

At the inferior end of the wound, bring the needle out just under the skin surface, reversing the stitching direction. The skin sutures are placed

below the skin surface in the subcutaneous tissue, thus avoiding the profusion of nerve endings. Continue to take bites of tissue from each side of the wound edges until the hymenal remnants are reached. Secure the finished repair with a loop or Aberdeen knot placed in the vagina behind the hymenal remnants (Figure 3.5).

Finally:

- Check that there is no excessive bleeding and that the finished repair is anatomically correct.
- An accurate detailed account of the repair should be documented in the woman’s case notes following completion of the procedure, including details of suture method and materials used. It is also useful to include a simple diagram illustrating the structures involved.
- The woman should be informed regarding the use of appropriate analgesia, hygiene and the importance of a good diet and daily pelvic floor exercises.
- It is important that the woman is given a full explanation of the injury sustained and contact details if she has any problems during the post-natal period. Special designated clinics should be available for women with perineal problems to ensure that they receive appropriate, sensitive and effective treatment.

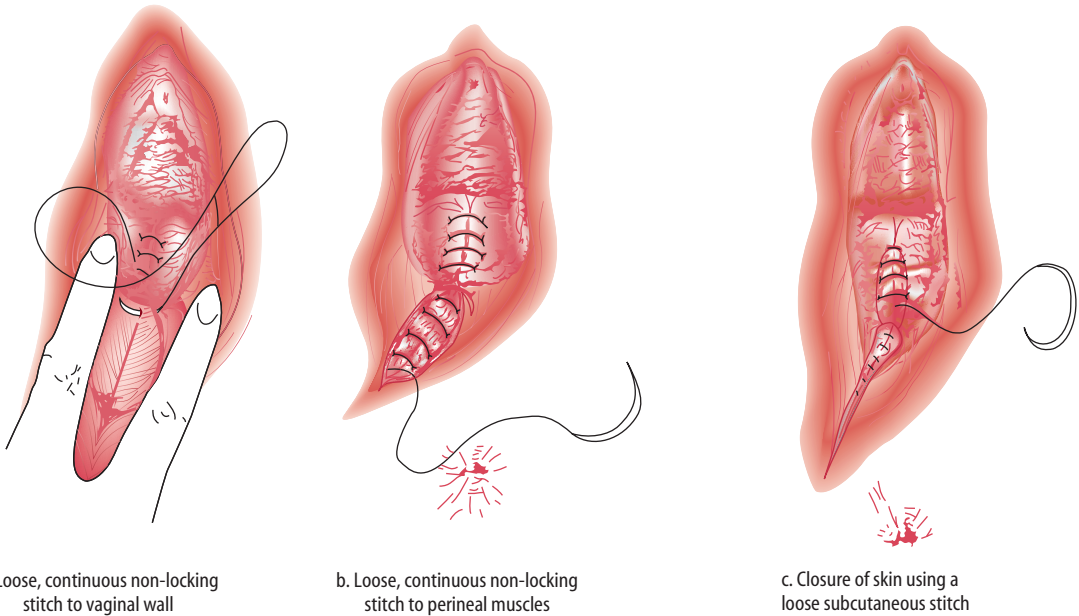


FIGURE 3.4. Continuous suturing technique for mediolateral episiotomy.

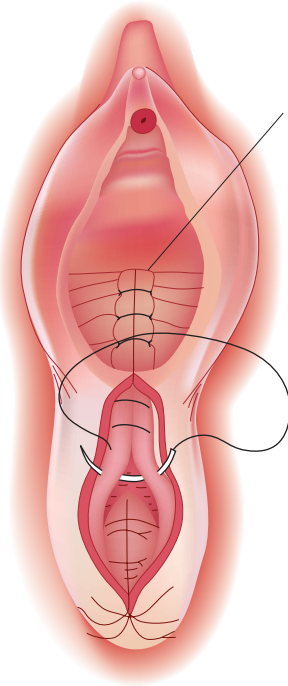


FIGURE 3.5. Continuous suturing technique for midline episiotomy. Once the vaginal mucosa has been closed to the hymenal ring, the needle is passed from the midline to the perineal body and a crown stitch re-approximating the bulbocavernosus muscles is performed. A subcuticular stitch is carried from the inferior perineal margin to the hymen and tied.⁶⁶

3.10 Conclusion

Mismanagement of perineal trauma has a major impact on women's health and significant implications on health service resources. Health professionals must base their practice on current research evidence and be aware of problems associated with perineal trauma and repair. Careful identification and repair of trauma by a skilled practitioner may avoid problems. Furthermore, it is important that prompt sensitive treatment is provided for those women with problems in order to reduce the morbidity associated with perineal injury following childbirth.

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