

Obstetric Perineal Trauma and Episiotomy

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ABSTRACT

Obstetric lacerations are a common complication of vaginal delivery. Lacerations can lead to chronic pain and urinary and fecal incontinence. Perineal lacerations are defined by the depth of musculature involved, with fourth-degree lacerations disrupting the anal sphincter and the underlying rectal mucosa and first-degree lacerations having no perineal muscle involvement. Late third-trimester perineal massage can reduce lacerations in primiparous women; perineal support and massage and warm compresses during the second stage of labor can reduce anal sphincter injury. Conservative care of minor hemostatic first- and second-degree lacerations without anatomic distortion reduces pain, analgesia use, and dyspareunia. Minor hemostatic lesions with anatomic disruption can be repaired with surgical glue. Second-degree lacerations are best repaired with a single continuous suture. Lacerations involving the anal sphincter complex require additional expertise, exposure, and lighting; transfer to an operating room should be considered. Limited evidence suggests similar results from overlapping and end-to-end external sphincter repairs. Postdelivery care should focus on controlling pain, preventing constipation, and monitoring for urinary retention. Acetaminophen and nonsteroidal anti-inflammatory drugs should be administered as needed. Opiates should be avoided to decrease risk of constipation; need for opiates suggests infection or problem with the repair. Osmotic laxative use leads to earlier bowel movements and less pain during the first bowel movement. Simulation models are recommended for surgical technique instruction and maintenance, especially for third- and fourth-degree repairs.

Keywords: Anal sphincter; Delivery; Episiotomy; OASIS; Obstetrics; Perineal tear; Prevention.

Introduction

By perineal laceration we mean any interruption of the perineal tissues resulting from mechanical trauma, whether or not associated with loss of substance. The traumatic event most frequently causing perineal lacerations is childbirth.

Perineal trauma can be anatomically divided into anterior and posterior. The first involves the labia majora and minora, the urethra, the anterior vaginal wall and the clitoris (urogenital trigone), the second involves the posterior vaginal wall, the perineal muscles, the anal sphincters up to the rectal epi-

thelium (anal trigone) (1).

Postpartum perineal vaginal tearing can be spontaneous or produced through a surgical incision, an episiotomy, to facilitate childbirth. In some cases, both may be present (for example during childbirth the laceration may become deeper than during the initial episiotomy). The prevalence of postpartum lacerations varies greatly between different birth centers, but it is estimated that approximately 85% of women report perineal trauma after vaginal birth and of these approximately 60-70% require surgical stitches (1). The use and type of episiotomy are often operator dependent and the incidence varies greatly between different European countries. In the Netherlands, episiotomy is practiced in approximately 8% of deliveries, in England in 14%, in the USA in 50% and in Eastern European countries in 99% of cases (1).

In recent years clinicians have been more careful about the identification of lesions of the anal sphincter (OASIS), partly due to a greater awareness of the consequences that unrecognized lesions entail and partly as an effect of greater awareness regarding to these problems and the best training of operators (2). As a result, there has been an increase in the incidence of third- and fourth-degree obstetric lacerations, which is now estimated to be between 0.1% and 10.9% (3). Many women report discomfort, pain or dyspareunia after a perineal suture, a morbidity that significantly impacts the woman's psycho-physical health. The presence of these symptoms and their extent are linked to the severity of the perineal damage, the technique and materials used for the suture, as well as obviously the expertise of the operator who carries out the repair of the perineal damage (4).

Several studies have attempted to define the risk and protective factors for perineal trauma, in order to try to reduce its incidence.

Third- and fourth-degree perineal lacerations' independent risk factors appear to be nulliparity, duration of stage II of labor, fetal head circumference, occipito posterior position, median episiotomy, fetal weight > 4000 g, dystocia of shoulder and operative delivery (3,5).

Protective factors appear to be the type of obstetric care for the protection of the perineum and the appropriate and selected use of episiotomy.

Some studies have evaluated the effects of active or passive perineal assistance on the perineum. Active assistance ("hands on") with perineal plane support, seems to be protective against trauma compared to passive assistance ("hands off"), in which such support is not offered (6). By active assistance on the perineum we mean the manual protection that the midwife exercises at the moment of crowning the fetal head, placing her right hand under the posterior vulvar commissure and her left hand on the fetal head. The woman is also advised to avoid pushing when the head is crowned, preferring to perform a forced exhalation and allow a less traumatic expulsion (2). It seems, in fact, that in this phase of childbirth, maternal pushes performed during forced exhalation led to a statistically significant reduction in grade I, II and III lesions compared to pushes performed while holding the breath (7). The Ritgen obstetric maneuver is performed during the expulsion of the head and consists in manually facilitating the disengagement of the fetus's chin by moving it away from the anus and the maternal coccyx with one hand and with the other, placed on the fetus's head, exerting

slight downward pressure to try to slow down the speed of expulsion. Although it is widely used in labor, it does not appear to reduce the incidence of third- and fourth-degree lacerations, when compared with active perineal assistance (8). On the contrary, the use of warm gauze on the perineum during the second stage of labor appears to be associated with a lower risk of injury to the sphincter complex (9).

Regarding the type of episiotomy, it is now known that the median episiotomy is associated with a higher risk of III- and IV-degree lacerations compared to the lateral or medium lateral one and therefore should not be practiced except in selected cases (2, 10).

To prevent perineal damage, it is advisable to encourage pushes only when fully dilated, to favor free positions even during the expulsion period, to respect the physiological times of the expulsion period even if prolonged, to encourage free thrusts and to avoid the maneuver of Kristeller (11).

Episiotomy

Episiotomy is a surgical procedure that consists of an incision (tomia) of the perineum (episeion), performed with special scissors such as Braun-Sadler or Mayo scissors. It is practiced in the final part of the second stage of labor, during a uterine contraction and when the presented part of the fetus distends the perineal plane, with the aim of increasing the diameter of the vulvar orifice and facilitating the childbirth. It would be preferable to perform it following an injection of local anesthetic on the affected area.

When to perform an episiotomy?

There are no real indications for performing an episiotomy, but it can be taken into consideration in the presence of the clinical situations listed below:

- non-reassuring fetal state (CTG anomalies) requiring the need to accelerate the final phase of childbirth;
- shoulder dystocia, to gain space and allow the execution of obstetric maneuvers aimed at resolving it;
- exhaustion of maternal strength or situations in which the woman has made multiple potentially harmful expulsive efforts for a long time (for example in the case of maternal heart disease).
- operative vaginal delivery using suction cup or forceps, but not as routine use, to be evaluated on a case-by-case basis.

Types of episiotomies

There are different ways of performing episiotomy, the most frequent ones being the median, mid-lateral and lateral episiotomy.

Median episiotomy

The median episiotomy is an incision that starts from the posterior vulvar commissure and is directed vertically towards the anus up to approximately 1 cm from it (12).

Its advantages are represented by the simplicity of execution and creation of the suture, the resulting slight dyspareunia and the low pain reported in the postpartum period; the main disadvantage is the greater risk of complications of grade III and IV lacerations (13).

Mediolateral episiotomy

The mid-lateral episiotomy is an incision that runs from the posterior vulvar commissure laterally to

the right or left and tangentially to the anal sphincter, with an angle of 40-60 degrees (2).

dyspareunia or urinary incontinence 6 months after birth (13).

It is the most used and chosen method since, as previously mentioned, this type of episiotomy is associated with a lower risk of 3rd and 4th degree lacerations (13). As a disadvantage, it can be burdened by a greater incidence of dyspareunia and greater pain in the puerperium.

Episiotomy must not be routinely offered even in the case of a previous third- or fourth-degree laceration in a previous birth but must always be evaluated in relation to the clinical case (11).

Lateral episiotomy

The lateral episiotomy is an incision made laterally to the right or left of the midline, at the 4-5 or 7-8 o'clock position respectively (12). Compared to the previous ones, it is the one that offers more space. Lateral episiotomy, compared to mid lateral episiotomy, is associated with a similar rate of grade III and IV tears and it is estimated that, in general, the angle of the incision should be at least 45 degrees from the midline to reduce minimizing the risk of sphincter injuries (14).

Perineal anatomy

To better understand the perineal repair process, it is advisable to know the pelvic anatomy. The perineum is made up of muscular and fascial planes and can be schematically described as a lozenge, the two triangles of which are based on a transverse line that passes through the ischial tuberosities (15). The four sides of the lozenge correspond anteriorly to the ischiopubic branches and posteriorly to the sacrotuberous ligaments. The anterior apex of the triangle corresponds to the lower edge of the pubic symphysis, the posterior one to the apex of the coccyx and the two lateral ones to the ischial tuberosities. The anterior triangle is called the urogenital triangle, the posterior one is called the anal triangle (16).

Selective or routine episiotomy?

This topic has been discussed by numerous studies. Some clinicians believe that the routine use of episiotomy is useful to prevent significant damage to the perineum caused by childbirth. On the other hand, performing an episiotomy itself constitutes a perineal trauma and implies the need for a surgical suture. A 2017 Cochrane Review, which included 12 studies (6177 women), tried to answer this question, evaluating the effects on the mother of selective episiotomy ('only if needed') compared with a routine episiotomy policy, in case of vaginal delivery. Selective episiotomy was found to be associated with a lower rate of perineal trauma and less pain in the puerperium. However, there weren't statistically significant differences between the two groups regarding pain 3 days after birth,

Pelvic floor

The pelvic floor is made up of a deep plane and a superficial plane.

The deep plane, which represents most of the pelvic floor and determines its solidity and tone, is made up of the pelvic diaphragm. It appears as a muscular plate, which partially closes the small pelvis, near the inferior strait; this layer is incomplete in its median part, where the pelvic organs are located, its appearance is like a funnel, with a concavity facing cranially (15).

The pelvic diaphragm is made up of the ischiococ-

cygeal muscles and the levator ani muscle.

The *levator ani muscle*, equal and quadrangular in shape, represents the main portion of the pelvic diaphragm. It has a long lateral origin that extends from the internal surface of the pubis, to the side of the symphysis, up to the ischial spine; in the interval between these two points its muscle bundles attach to a thickening of the fascia of the internal obturator muscle (arc tendineum of the levator ani muscle); the bundles of muscle fibers that compose it, based on their course, are divided into two parts (16):

- Pubococcygeal muscles: these are the bundles that originate more anteriorly at the level of the pubic rami; they run almost sagittally towards the coccyx and then find insertion on the midline behind the rectum to form a fibrous raphe, the anococcygeal ligament, while some fibers insert on the lateral margin of the coccyx. In their course, surrounding the vagina (pubovaginal muscle) and the rectum (puborectalis muscle), they describe their respective hiatus. Therefore, the contraction of the levator ani will cause the closure of these openings and the increase in tone of the pelvic diaphragm which will then provide a rigid plane of support for the viscera of the pelvis.
- Iliococcygeal muscles: these are the bundles that originate more posteriorly, from the tendinous arch and the ischial spine, they run almost transversely and end on the anococcygeal ligament and on the lateral edge of the coccyx.

The *ischiococcygeal muscles* are a pair of even and symmetrical muscles, each consisting of a thin triangular bundle whose apex originates from the sacrospinous ligament and the ischial spine and whose base finds insertion on the lateral margin of

the coccyx. Located posterior to the levator ani, they close part of the greater ischial foramen and constitute an additional reinforcement to the posterior portion of the pelvic floor (16).

The pelvic diaphragm, having oblique walls, delimits the pelvic cavity with its upper margin; it is covered above by the upper band of the pelvic diaphragm, dependent on the endopelvic band, which has a relationship with the pelvic organs, while below it is covered by the lower band of the pelvic diaphragm, which constitutes the medial wall of the anterior portion of the ischioanal fossa; its lateral wall is made up of the internal obturator muscle covered by its fascia (16).

The superficial plane is composed by the urogenital and anal triangle.

Urogenital triangle

In the urogenital triangle we distinguish two planes, one deep and one superficial (Figure n.1).

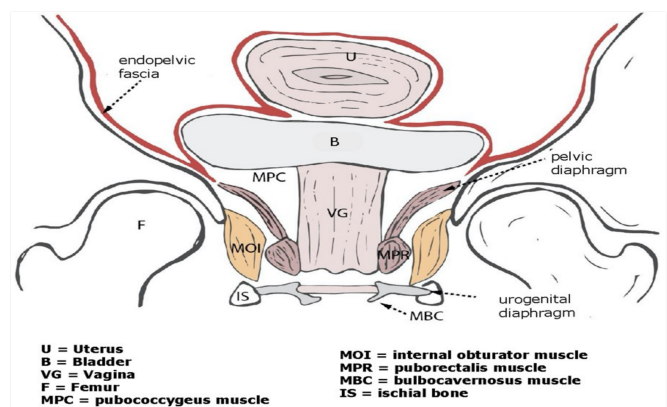


Figure no. 1 Pelvic anatomy of the anterior perineum, frontal plane.

The deep plane is located inferior to the pelvic diaphragm and appears as a triangular shaped musculoaponeurotic plate stretched between the two ischiopubic branches, which closes the anterior portion of the anterior strait of the small pelvis, in the

median position of this plate, called trigone or *urogenital diaphragm*, is crossed by the urethra, the vagina and partly by the major vestibular glands (Bartholin); this plane is made up of the deep transversus muscle of the perineum and the striated sphincter muscle of the urethra: the deep transversus muscle of the perineum is arranged transversely, between the ascending branch of the ischium laterally and with the fibers of the contralateral deep transversus muscle medially, the fibers muscles in this location become tendinous and together constitute the tendinous center of the perineum; the striated muscle of the urethra surrounds the distal part of the urethra and of the vagina (16). The fasciae of the urogenital trigone are very robust and contribute as the muscular component to the stability of the plane. Below the urogenital trigone a space is formed, called the bulboclitoral lodge, between the trigone and the superficial perineal fascia, laterally it is delimited by the ischiopubic branches, posteriorly it continues up to the anal trigone, anteriorly up to the pubic symphysis (16).

The superficial plane is located under the urogenital trigone and is made up of the ischiocavernosus and bulbocavernosus muscles and the superficial transversus muscle of the perineum which are located inside the bulboclitoral lodge, the caudal limit of which is the skin. The roots of the corpora cavernosa of the clitoris and the bulbs of the vestibule are also located inside the bulboclitoral lodge (16).

The *ischiocavernosus muscles* run on the lateral border of the perineum, parallel to their ischiopubic branch, anchoring themselves posteriorly on the ischial tuberosity and anteriorly, having become tendons, they throw themselves onto the roots of the cavernous bodies of the clitoris, deter-

mining their erection with contraction.

The *bulbocavernosus muscles* run more medially than the ischiocavernosus muscles and surround the vaginal orifice and the terminal section of the urethra, are anchored to the tendinous center and extend anteriorly to cover the lateral and posterior faces of the bulbs of the vestibule and the posterior wall of the glands of the Bartolini, until they reach the roots of the clitoris, where they are inserted.

The *superficial transversus perineal muscle* is a muscle bundle stretched transversely between the most internal and anterior part of the ischial tuberosity and the tendon center, where it joins with the contralateral one. It represents the posterior limit of the urogenital triangle.

Anal Triangle

The anal triangle includes the perineal rectum, the anal sphincter and the ischiorectal cavities.

The perineal rectus is between the levator ani muscle and the skin and is attached to the coccyx at the back by the anococcygeal ligament. The anus is surrounded laterally and posteriorly by the loose adipose tissue of the ischiorectal fossa. Anteriorly, the perineal body divides the anal canal from the vagina; the perineal rectum in this anatomical location is surrounded by two layers of smooth muscle, an innermost circular layer and an outermost longitudinal one, the internal layer then thickens caudally to form the internal anal sphincter (16).

The anal sphincter complex consists of the external anal sphincter (EAS) and internal anal sphincter (IAS) separated by a longitudinal junction layer. The external anal sphincter (EAS) muscle consists of striated muscle fibers that surround the anal ca-

nal from the orifice external to the levator ani muscle; it is divided into superficial (whose muscle bundles insert on the anococcygeal raphe, on the apex of the coccyx and on the dermis) and deep (whose muscle bundles surround the rectal canal like a sleeve, merging with the more medial bundles of the puborectalis muscle); it is a voluntary muscle and ensures anal continence with its tonic contraction. The EAS appears bright red; the internal anal sphincter (AIS), is the continuation and thickening of the smooth circular muscle of the intestine, constitutes the main factor of resting pressure, it is a smooth muscle, non-voluntary and controlled by the autonomic nervous system; to the eye it has a paler and pinker appearance than EAS (16).

The ischiorectal fossa is a space occupied by adipose tissue, the section of which is triangular with a base facing caudally towards the skin, the apex is constituted by the point where the fibers of the levator ani muscle are anchored at the level of the tendinous arch of the levator ani muscle, its lateral wall is made up of the obturator internus muscle and its fascia (on the medial aspect of the ischium), the medial wall is made up of the levator ani muscle, which separates the fossa from the extraperitoneal space, caudally it is related to the external sphincter muscle of the anus, as well as the subcutis and skin; anteriorly it is interposed between the levator ani muscle and the urogenital diaphragm, constituting the anterior recess which progressively tapers up to the pubis, while posteriorly it continues between the levator ani muscle and the gluteus maximus muscle and the nerves and pudendal vessels runs there, in a doubling of the obturator fascia, called Alcock's canal, (16).

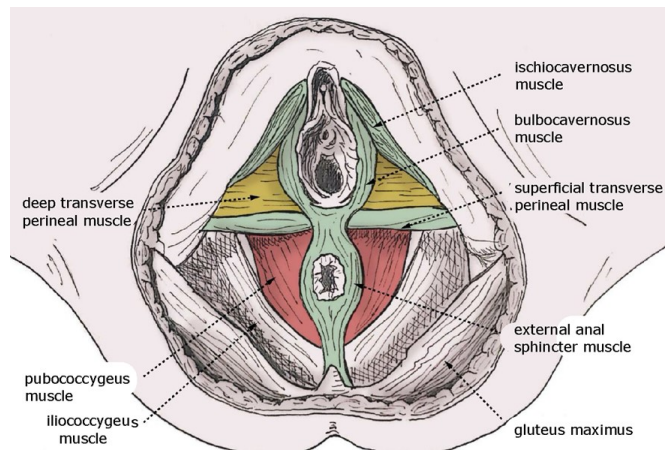


Figure n.2 Anatomy of the superficial planes of the perineum

Classification of obstetric lacerations

Until the end of the 1990s there were few indications in the literature for the classification of post-partum lacerations. In 1999 Sultan proposed a detailed and well-defined classification of perineal lesions (17), which was later taken up and adopted by the Royal College of Obstetricians and Gynaecologists (RCOG) (2) and by the International Consultation on Incontinence (18).

The classification proposed and still adopted internationally today distinguishes perineal lesions after childbirth into 4 grades:

1st degree: laceration of the vaginal mucosa or the skin of the perineum;

2nd degree: laceration involving the perineal muscles but not the anal sphincter.

3rd degree: laceration which also involves the muscles of the anal sphincter complex; can be further divided into:

3a: lesion <50% of the thickness of the external sphincter

3b: lesion > 50% of the thickness of the external sphincter

3c: lesion of the internal sphincter

4th degree: 3rd degree laceration with simultane-

ous injury to the anal mucosa

In case of difficulty in defining the extent of the third-degree laceration, it is preferable to classify it by referring to the highest degree to avoid underestimations (2).

Repair of obstetric lacerations

When a perineal laceration occurs, it is always a good idea to carry out good counseling with the patient and verbally obtain her informed consent for surgical repair. Furthermore, it is good practice to check that the analgesia is effective, that there are optimal conditions for the suturing and that the patient is positioned comfortably for the time necessary for the suturing.

After childbirth, repair of perineal damage must be performed as soon as possible to minimize the risk of bleeding and infection (11). Since all women who give birth vaginally are exposed to a potential risk of laceration of the sphincter complex, it is recommended to perform an accurate evaluation of the lesion with vaginal examination and to systematically perform rectal examination. In selected cases, local regional anesthesia is not sufficient and it is necessary to resort to the operating room with general or spinal anesthesia (2). Sometimes in more complex perineal traumas the insertion of a bladder catheter can be helpful to avoid urinary retention (11).

The vaginal exam includes inspection of the external and internal genitalia. Generally, by parting the lips it is possible to determine the extent of the laceration and identify its apex. To evaluate the presence of a possible lesion of the rectal mucosa and/or of the anal sphincters it is necessary to separate the lips with the thumb and index finger of one

hand, while with the other hand the rectal exploration is carried out, positioning the index finger in the anus and the thumb in the vagina. This procedure also allows the identification of so-called "buttonhole" lesions of the rectal mucosa, i.e. those lacerations that occur with apparently intact perineal skin.

Rectal examination allows you to identify any lacerations of the anal sphincter, which can be palpated by performing a rotary movement with the finger. If a laceration is suspected, the woman is asked to contract the sphincter and, to confirm, a divarication of the muscle bundles will be appreciated anteriorly (19). It should also be noted that in the presence of laceration of the internal sphincter or of the anal mucosa, laceration of the external sphincter always coexists.

Repair of 1st and 2nd degree lacerations

First degree lacerations, even if they only involve the vaginal mucosa, should always be sutured to promote the healing process. Only if the margins of the lesion are perfectly aligned with each other can the possibility of spontaneous healing by secondary intention be assessed. Labial and paraclitoral lacerations are usually very superficial but painful. If bilateral, they can sometimes adhere together above the urethra and cause urination difficulty. In the case of 2nd degree lacerations, the muscle must be sutured to promote healing (11).

The suturing of the three layers, i.e. the vaginal mucosa, muscles and perineal skin, with a continuous non-entangled technique compared to the detached stitch suture, causes less postpartum perineal pain. There is therefore less need for analgesics, dyspareunia and having to remove the suture. The rationale for this is that the continuous suture guar-

antees a better distribution of tension along the entire suture line compared to that exerted by each surgical knot (1).

A further reflection is that the suturing technique involving only two layers, i.e. the vaginal laceration and the muscular plane without suturing the skin, is associated with a greater frequency of wound dehiscence 10 days after delivery but also with a lower onset of dyspareunia after 3 months after childbirth, compared to the technique which involves continuous suturing of the three layers, including the skin (1).

Regarding the material to be used for the suture, it is preferable to use an absorbable synthetic thread made of polyglycolic acid or polyglactin 910 such as Vicryl Rapid or Vicryl Plus. In fact, compared to the cutgut suture thread that was previously used, less perineal pain is observed with this material and, thanks to the rapid reabsorption of the thread, the need to remove the suture is statistically reduced (20).

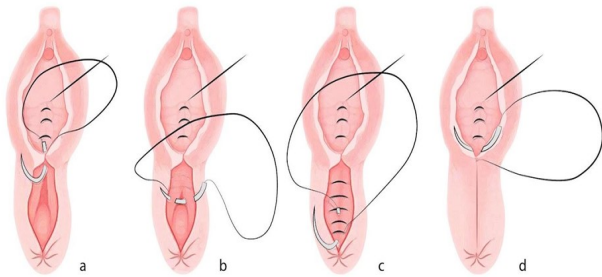
The literature therefore indicates that the best technique is the use of a continuous non-entangled suture that brings together the three tissues (vagina, perineal muscles and skin) with an absorbable thread such as Vicryl rapid (1, 11, 20).

Before proceeding with the repair of a perineal laceration, it may be useful to place a swab created with sterile gauze in the vagina, to absorb the blood coming from the uterus and have a better view for the time of the suture. In this case always remember to remove the gauze.

Steps to follow when suturing first and second-degree lacerations (21):

1. Suture of the vagina: the first stitch must be placed proximal to the apex of the vaginal laceration, at the limit of the healthy tissue, to ensure accurate hemostasis. The vaginal laceration must be closed with continuous suture; the needle must enter and exit on the healthy tissue, so that the edges of the laceration are brought closer and must exit not too far from the vaginal margin to be sutured, to avoid a restriction of the vagina. The suture is then continued inferiorly, towards the remaining part of the hymen and towards the vaginal entrance. At this point the needle passes through the skin of the fork to emerge at the level of the laceration of the perineal muscles.
2. Suturing of the muscle layer: it is very important to evaluate the depth of the trauma and, possibly, if the deep plane is also involved, suture the involved planes in two layers, to bring the lacerated bellies closer to the corresponding muscle. The muscle must be realigned in such a way that the skin edges can be brought together without tension, in order to guarantee hemostasis and without causing ischemia. When placing stitches, make sure not to involve the rectum or anal canal in the suture.
3. Suture of the perineal skin: once the closure of the muscular layer is completed, the lower edge of the perineal laceration is reached. The needle is passed in this location giving an intradermal point and the technique is continued with the closure of the skin, with a direction from bottom to top, until the vaginal entrance and the hymenal caruncles are reached again. Once the closure of the laceration at the level of the hymenal residue is completed, the closure point is given and the surgical knot is made (Figure n.3).

Figure no. 3 Technique for repairing the second-degree laceration with continuous non-entangled suture: a) suture of the vagina, b) suture of the muscular plane, c) suture of the perineal skin with intradermal d) closure of the suture.



IIIrd and IVth degree lacerations

Repair of grade III and IV tears should be performed by a gynecologist who has received appropriate training. In more complex cases the suturing should be performed in the operating room and in any case always under aseptic conditions and with appropriate instrumentation (2). Early repair of these lesions is associated with lower risks of fecal incontinence and/or deterioration of anal function over time (22).

- Lesions of the external anal sphincter (EAS)

The external anal sphincter physiologically has a basal tone and therefore tends to retract when torn. Full-thickness lesions of the external anal sphincter can be repaired with the "end-to-end" technique or with the "overlap" technique with comparable results.

The "end to end" technique consists in executing detached U-shaped stitches without overlapping the stumps. (Figure no. 4).

The "overlap" technique consists in overlapping the stumps by bringing the flap together with 2-3

points 1.5 cm laterally and therefore can only be performed when the laceration involves the entire thickness of the external anal sphincter (grade IIIc) (Figure n 5). It is not indicated in partial tears (IIIa and IIIb). In order to perform the "overlap" technique, the stumps must first be identified and anchored with Allis forceps and then a partial dissection of the external sphincter down to the fat of the ischiorectal fossa must be performed to facilitate mobilization.

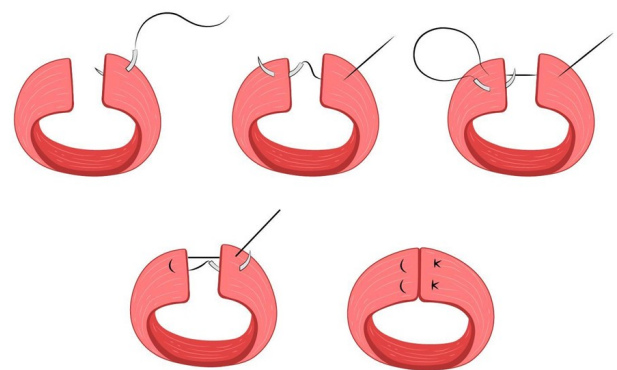


Figure no. 4 "End to end" repair technique.

Regarding the thread used for the suture, both Vicryl 2-0 and PDS 3-0 can be used with comparable outcomes (2).

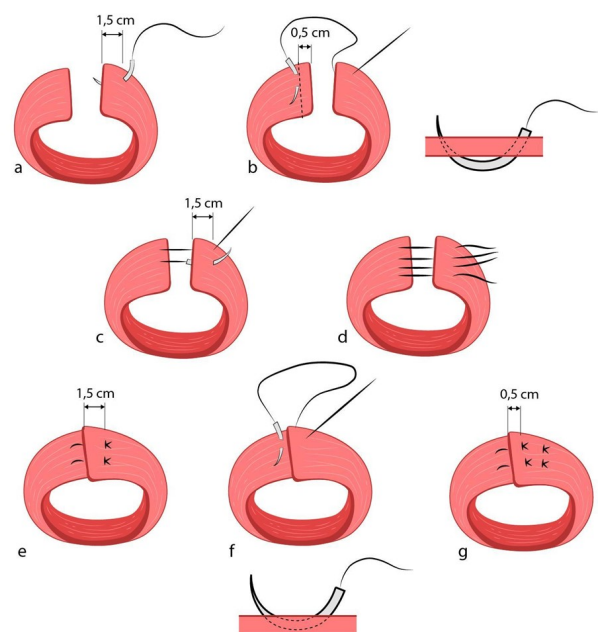


Figure n.5 "Overlap" repair technique

- Lesions of the anorectal mucosa

For lesions of the anorectal mucosa, the technique used may consist of continuous sutures or detached stitches with introflexing knots (19). As for the suture material, polygalactin 3-0 (Vicryl 3-0) should be used as it causes less discomfort and irritation than polydioxanone (PDS) (2).

- Internal anal sphincter (IAS) injuries

Where a lesion of the internal anal sphincter is identified, it must be repaired separately from the external sphincter, to ensure better continence (23). The internal sphincter is pale pink in color and its repair must be done using detached U-shaped stitches without any attempt to overlap the stumps. Regarding the thread used for the suture, both Vicryl 2-0 and PDS 3-0 can be used with overlapping outcomes (2).

After having reconstructed the sphincters, the vaginal mucosa, the perineal muscles and the skin must be sutured.

If adequate repair of the perineal damage is not carried out, it will be deficient from a functional point of view and will make the anal sphincter more vulnerable to possible trauma in a subsequent vaginal birth.

At the end of any repair, it is necessary to ensure that good control of haemostasis and a good anatomical reconstruction are obtained.

It is good practice to repeat the vaginal and rectal examination to ensure that you have not inadvertently included the rectal mucosa.

At the end of the repair of the laceration, an accurate description of the location and degree of the laceration, the type of repair carried out and the materials used for the suturing must always be recorded in the medical record.

Postoperative management of grade III and IV lacerations

The management of repairs of third- and fourth-degree lacerations involves the implementation of a series of hygiene and behavioral measures. It is very important to guarantee patients broad-spectrum antibiotic prophylaxis (e.g. 2nd generation cephalosporin possibly associated with Metronidazole due to possible contamination by fecal material) in order to minimize the risk of infection and wound dehiscence (2,19). An additional precaution is the use of laxatives (e.g. lactulose) for 10 days after surgery to reduce the consistency of the stool. However, the use of fiber gels or constipating agents is not recommended.

For the management of postpartum pain, the analgesic drugs of choice are NSAIDs. Diclofenac taken orally appears to reduce pain within the first 24 hours after giving birth and women who use it have less need to use other analgesics in the first 48 hours after giving birth (24). Opioids should be used with caution due to their constipating effect (2).

Sphincter tears are associated with an increased risk of postpartum urinary retention (2); in these cases, it may be advisable to place a bladder catheter for at least 24 hours and guide urination every 3-4 hours once removed, to avoid bladder overdistension.

Post-discharge surveillance

The prognosis of external sphincter repair is good, with 60-80% healing at 12 months. Some women complain, after this period, about impervious defecation or incontinence of feces or gas.

It is advisable for women with III-IV-degree lacerations to be monitored by personnel expert in these

problems 6-12 weeks after giving birth (2). The evaluation must include the use of endoanal ultrasound and anal manometry in order to obtain objective data regarding the outcomes of the trauma and to provide indications on the methods of future deliveries.

All women should be advised to perform exercises to strengthen the pelvic floor; only a small number of patients need electrical stimulation. It is also important that women are educated on the early recognition in the first weeks after giving birth of any symptoms of infection or wound dehiscence and invited to return to hospital in the event of the appearance of pain or swelling of the suture, rectal bleeding, purulent discharge, incontinence to feces or gas (2).

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