

Clinical and Aesthetic Review of Episiotomy Wound Closure Methods

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ABSTRACT

An episiotomy is a surgical incision in the perineum to facilitate the baby's head during delivery. Physicians or midwives may use this procedure if he/she finds out the tissue around the vaginal opening begins tearing or does not seem to be stretching enough to allow the baby to be delivered. With an increasing trend for hospital births and for physicians to get involved in the normal uncomplicated birth process, there was rise in the number of episiotomies. After the baby is delivered through the extended vaginal opening, the area is applied with local anesthetic agent and incision is repaired with sutures. Our study reviewed the development in the past twenty years regarding episiotomy wound closure methods, and discovered that continuous sutures for episiotomy or perineal repair have clinical advantages in term of faster and better wound healing, more favorable scarring, shorter post-procedural pain, more rapid resumption of sexual activity, lower incidence of urinary incontinence, compared to interrupted sutures. They were also beneficial in term of less consumption of suture materials. In determining suture materials, clinicians should strongly consider the tear severity, tissue characteristics, as well as the desired aesthetic outcome.

KEYWORDS: episiotomy, perineal tear, wound closure, continuous sutures, interrupted sutures, scar, post-partum pain, suture materials, aesthetic outcome.

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INTRODUCTION

The clinical and aesthetic aspects of episiotomy wound closure methods hold significant importance in obstetrics and plastic surgery. An episiotomy is a surgical incision, usually made with sterile scissors, in the perineum as the baby's head is being delivered. Physicians or midwives may use this procedure if he/she finds out the tissue around the vaginal opening begins tearing or does not seem to be stretching enough to allow the baby to be delivered.¹ Episiotomy was first introduced in the 18th century for preventive measures. The rate of performing this intervention increased gradually in the first half of the 20th century worldwide. Also, with an increasing trend for hospital births and for physicians to get involved in the normal uncomplicated birth process, there was significant rise in the number of episiotomies.²

The closure of episiotomy wounds plays a crucial role in promoting optimal healing, reducing postpartum complications, and enhancing patient satisfaction. However, with the evolving understanding of patient needs and advancements in surgical techniques and materials, there is a growing demand for updates not only in the clinical aspects

of episiotomy wound closure methods but also in aesthetic aspects. From a clinical perspective, efficient wound closure techniques are pivotal in preventing infection, minimizing pain, and promoting proper tissue healing. Additionally, there is an increasing emphasis on the aesthetic outcomes of episiotomy wound closure as women's expectations regarding the appearance of the perineal area have evolved, highlighting the importance of achieving cosmetically pleasing results. This literature review provides an overview of the recent advancements and updates in the clinical and aesthetic aspects of episiotomy wound closure methods.

EPISIOTOMY

An episiotomy is a surgical incision made during childbirth, and has been a routine procedure aimed at facilitating delivery and preventing perineal tears. Several reasons are cited for performing episiotomies. As it is originally designed to reduce the incidence of severe perineal tears (third and fourth-degree) during delivery (see **Table 1**), some experts have confidence that an episiotomy also speeds up the birthing process, making it easier for the baby to be delivered.

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This can be important if there is any sign of distress that may harm the mother or baby, for example: the baby's shoulder being trapped behind the pelvic bone, a baby with an unusual heart rate pattern during delivery, or prolonged labor in need of forceps or vacuum extraction.¹⁻⁴

Table 1. Degree of perineal tear

First degree	Injury to perineal skin only
Second degree	Injury to perineum involving muscles but not the anal sphincter
Third degree	Injury to perineum involving the anal sphincter complex
III a	Less than 50% of External anal sphincter (EAS) torn
III b	More than 50% of EAS torn
III c	Both EAS and Internal anal sphincter (IAS) torn
Fourth degree	Injury to the perineum involving the anal sphincter complex (EAS and IAS) and

As tissues in perineal area may tear during the delivery, the first reason for physicians to perform an episiotomy is that a well-designed incision should prevent larger vaginal tears during childbirth and would heal better and faster than a natural tear. Another reason for performing an episiotomy is that a clean incision is easier to repair than a jagged tear. This procedure was also considered to help preserve the muscles and connective tissue and therefore protect the pelvic floor and prevent future problems with urinary continence, although more recent researches suggest that routine episiotomies do not prevent these problems after all.^{5,6}

In most cases, the physician makes a midline incision along a straight line from the lowest edge of the vaginal opening to toward the anus. In other occasions, the episiotomy is performed by making a diagonal incision across the midline between the vagina and anus. Such method is used much less often since it may be more painful, and may require more healing time than the midline incision. In fact, there are many different types of episiotomy incisions include the midline, the modified-median, the mediolateral, J-shaped, lateral, anterior, and radical.^{3,7} The two most common techniques are midline (widely used in the United States and Canada) and mediolateral (in Europe). After the baby is delivered through the extended vaginal opening, the area is applied with local anesthetic agent and incision is closed with sutures.

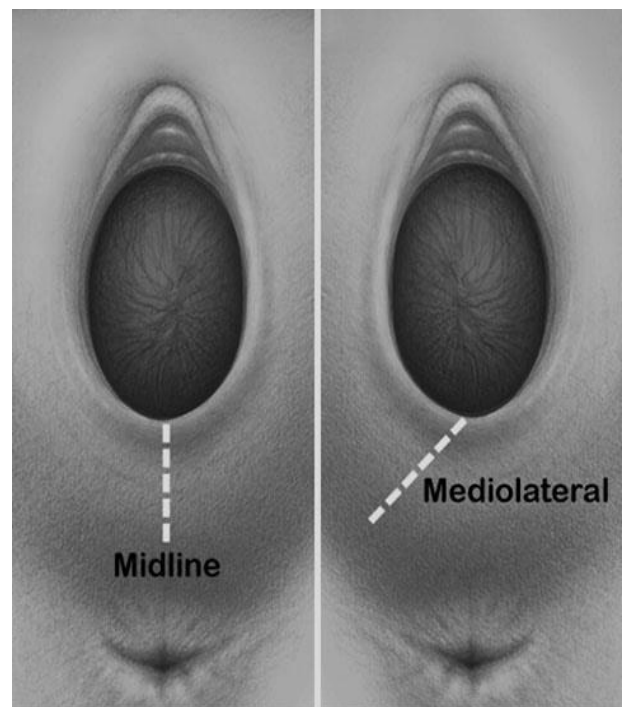


Figure 1. Midline and mediolateral episiotomy

FUNCTIONAL EVALUATION

In an online survey completed by 2,400 women who gave birth in American hospitals from July 2011 through June 2012, 41% of those who had a vaginal birth reported a painful perineum for two months post-delivery, and remaining for six months post-delivery in 7% of those. Perineal pain was strongly related to whether the woman had an episiotomy (18%) or did not (9%) ($p < 0.01$).⁸ Suture material and technique might influence postpartum perineal pain, as these parameters influence the rates and severity of spontaneous perineal trauma and episiotomies.⁹⁻¹⁰

Aside the perineal pain, perineal trauma complications in the postpartum period may include wound infection and dehiscence.¹¹ Episiotomy dehiscence is a rare complication, there is limited data on the prevalence of perineal wound dehiscence related to episiotomy or perineal tears, but rates ranging from 0,1% to 5,5% have been reported.¹² Infection rates in episiotomy wounds are low; a recent study revealed the prevalence rate of episiotomy infections was 17.7%, with their predominant pathogens were: *Escherichia coli* (49.2%), *Enterobacter* spp. (11.1%), *Streptococcus* spp. (9.1%), *Enterococcus faecalis* (6.5%), *Klebsiella* spp. (8.1%), followed by *Pseudomonas aeruginosa* (4.7%), *Staphylococcus aureus* (4.2%), *Proteus* spp.(2.9%) and *Staphylococcus epidermidis* (2.8%).¹³ However, it remains the most common cause of wound dehiscence, which may lead to major physical, psychological and social problems if left untreated. Most dehisced perineal wounds are left to heal naturally by secondary intention.

Other complications of episiotomy are similar to those of spontaneous perineal tears, which includes bleeding, prolonged wound healing, complications in subsequent vaginal deliveries, dyspareunia, pelvic floor dysfunction,

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urinary fistulas, and inappropriate wound scarring.^{14,15} The most vital complication of an episiotomy is an injury to the external anal sphincter muscle, which can lead to incontinence and fistula formation. For this reason, one must ensure that the benefits of the procedure outweigh the risks during the decision-making process. Furthermore, there was one literature review showing that the median episiotomy approach escalates the risk of anal sphincter injury when compared to the mediolateral technique.^{16,17} This data implies that one method may be a safer choice comparatively.

AESTHETIC EVALUATION

Aesthetic evaluation after a perineal repair procedure includes the visual appearance of perineum area. Inflammatory signs, such as edema, ecchymosis, redness and pain, occur from the first hours after delivery and usually remain beyond the hospitalization period. A randomized controlled trial comparing two different perineal repair techniques acknowledged that edema (26.2%), redness (6.6%) and ecchymosis (3.3%) occurred in women who had episiotomy or second degree laceration at the first 24 hours after delivery. On the fourth day after delivery, the findings of edema (11.5%) and redness (4.9%) decreased while ecchymosis increased.¹⁸

An episiotomy scar can be a source of altered body image. The size of the episiotomy scar may be disproportionate to the impact it has on a woman's body image.¹⁹ One past study revealed noticeable scars were present in all patients who had perineal repair procedures with chromic cat-gut sutures, while those who had polyglycolic acid sutures showed noticeable scarring in 56.8% cases.²⁰ There has not been any previous reports comparing aesthetic outcome between using absorbable sutures versus non-absorbable sutures in perineal repair procedures, but for analgesic comprehension, physicians may refer to a meta-analysis study reviewing aesthetic outcomes between suturing facial wounds with absorbable materials versus non-absorbable materials that cited no significant difference in any aspect, including Visual Analogue Cosmesis scale, Visual Analogue Satisfaction scale, infection, dehiscence, erythema or stitch marks.²¹ Furthermore, physicians must consider that non-absorbable materials need suture removal; while an important consideration for women from a psychoemotional point of view is the necessity to remove threads.²² The factor of skin tension due to lithotomy position during a perineal repair procedure might strongly related to the high incidence of noticeable scarring.^{19,23,24}

INTERRUPTED VERSUS CONTINUOUS SUTURE METHODS

Interrupted suturing involves individually placing sutures to approximate the wound edges. This technique allows for precise control of wound tension and alignment, which can contribute to optimal wound healing. It is particularly useful in cases where tissue tension is uneven or when additional

security is required. Interrupted sutures provide better wound edge eversion, promoting proper healing and reducing the risk of wound dehiscence. They also allow for selective removal of individual sutures, if necessary, and enable easier wound examination and management of potential complications. Physicians and midwives of early age applied interrupted suturing methods for repair of the vagina, perineal muscles, and skin after an episiotomy or a second-degree tear related to childbirth.⁹ They believed interrupted suturing methods were the safer option to reduce the risk of dehiscence episiotomy repairs.²⁵

In term of aesthetic outcomes, interrupted suturing allows for precise alignment of wound edges, which can contribute to pleasing aesthetic outcomes. By individually placing sutures, this technique enables fine adjustment of tissue tension, resulting in improved wound edge eversion and cosmetically pleasing wound closure. The meticulous alignment achieved with interrupted sutures can reduce the risk of irregular scar formation and minimize the visibility of the scar. However, the presence of multiple suture knots along the wound line may lead to small, discrete scars, which can be a consideration in terms of aesthetic outcome.

Continuous suturing involves the placement of a single continuous suture along the entire wound length. This technique is quicker and easier to perform than interrupted suturing, as it requires fewer suture placements. It provides more efficient wound closure, reducing the total time required for the procedure. Continuous sutures also distribute tension more evenly along the wound edges, minimizing the risk of tissue ischemia. Additionally, continuous suturing can result in a watertight closure, reducing the likelihood of wound complications such as seroma formation or infection. In the last 80 years, many physicians suggested that continuous non-locking suture techniques are associated with less pain than traditional, interrupted suturing methods, and therefore become more preferable in term of patients approval.^{9,10}

In term of aesthetic outcomes, continuous suturing can provide a smoother, more uniform wound closure, which may be considered aesthetically favorable. The absence of multiple suture knots along the wound line can result in a cleaner appearance and potentially minimize scar visibility. Continuous suturing may reduce the risk of track marks caused by interrupted sutures and create a more seamless transition between the wound edges. However, care must be taken to ensure proper wound edge eversion and alignment, as inadequate tension distribution or misalignment may affect the final aesthetic outcome.

In 1998, Graczyk and his colleagues paired polyglycolic acid threads, as less reactive materials for repairing perineal tears, with continuous subcutaneous skin closure for episiotomy repair and observed patients' acute postpartum discomfort and healing. They concluded that episiotomy repair with continuous subcutaneous sutures using polyglycolic acid thread offers significant advantages over traditional interrupted suture, in terms of faster and better wound

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healing, more favorable scarring and resumption of sexual activity.²⁶ Many publications from the last twenty years have studied and compared both perineal repair methods and stated almost the same conclusion.

In 2001, Nikolov and his colleagues designed a prospective study to establish the possibility for reconstructing episiotomies with a continuous uninterrupted single-thread suture using cat-gut or polyglactyn-910 sutures. Their study showed the method did not provide significant technical problems to the operators, achieved good hemostasis during the procedure and provided good anatomic adaptation. All episiotomies healed primarily. One important advantage from women's psychoemotional point of view was this continuous uninterrupted single-thread absorbable suture needed no necessity to remove threads.²²

In 2006, Morano and her colleagues published their study of 214 primiparous women with episiotomies or second-grade tearing of the perineum who were randomly allocated to either the continuous knotless/non-locking technique or the interrupted-3-layer-suturing method, and were evaluated by their post-procedural perineal pain (evaluated by visual analogue scale) at day-2 and day-10, and their post-procedural dyspareunia 3 months after delivery. Secondary outcomes which were observed included suture removal, wound dehiscence, 48-hours analgesia use, and their satisfaction at the third month and a year after childbirth. Significantly women with continuous knotless/non-locking sutures reported fewer pain than ones with the interrupted-3-layer-suturing method (32.3% vs 60.4%; $p < .001$), fewer consumption of analgesia than ones with the interrupted-3-layer-suturing method (33.6% vs 54.2%; $p < .05$), but no difference in superficial dyspareunia at 3 months after delivery. It was concluded that the use of a continuous knotless technique for episiotomy repair is associated with less short-term pain than techniques with interrupted sutures.²⁷

In 2009, Valenzuela and colleagues published their study of 445 women who had undergone vaginal deliveries with episiotomies or second-grade tearing of the perineum who were divided into two: a group which received perineal repair with continuous, non-locking sutures involving the vagina, perineum, and subcutaneous tissues, and the other group with continuous, locking sutures of the vagina, interrupted sutures in the perineal muscles, and interrupted transcutaneous sutures. Both groups used identical suture material, and evaluated regarding the sensation of pain and the use of analgesia on the second and the tenth days, and 3 months after delivery. Study result did not demonstrate that one technique was superior to the other in the incidence of pain in the short or long term, but repairs with continuous suturing were faster and used less suture material without an increase in complication than interrupted suturing.²⁸

Two consecutive Cochrane Database Systematic Reviews from 2007 and its update from 2012 assembled 16 studies which involved 8184 women from 8 countries, with

heterogeneous skill and background training of the surgical operators. Meta-analysis showed that continuous suture techniques compared with interrupted sutures for perineal closure (all layers or perineal skin only) were associated with less pain for up to 10 days' postpartum (risk ratio (RR) 0.76; 95% confidence interval (CI) 0.66 to 0.88, nine trials). There was an overall reduction in analgesia use associated with the continuous subcutaneous technique versus interrupted sutures for repair of perineal skin (RR 0.70; 95% CI 0.59 to 0.84). There was also a reduction in suture removal in the continuous suturing groups versus interrupted sutures (RR 0.56; 95% CI 0.32 to 0.98), but no significant differences were seen in the need for re-suturing of wounds or long-term pain. Those reports discovered that continuous suturing techniques for perineal closure were associated with less short-term pain compared to interrupted methods. If the continuous technique is used for all layers (vagina, perineal muscles and skin) compared to perineal skin only, the reduction in pain is even greater. Furthermore, there is also some evidence that the continuous techniques used less suture material as compared with the interrupted methods (one packet compared to two or three packets, respectively).^{9,10}

A randomized controlled trial in 2011 by Kokanali and colleagues also confirmed similar findings, that the continuous suturing techniques for episiotomy closure were associated with less short-term pain, are quicker and also need less suture material, compared to interrupted methods. However, the differences between the pain at tenth day and during sexual intercourse 6 weeks after the delivery were statistically same among patients of both methods.²⁹

On the subject of pain, a published study by Aslam and colleagues in 2015 revealed that there is no significant difference in frequency and severity of pain (slight/severe) in using interrupted and continuous methods for repair of second degree perineal tears or episiotomy.³⁰ In 2019, Martinez-Galiano and colleagues observed a total of 134 women with 70 of whom had perineal repair with continuous suture and 64 had interrupted sutures. Their study showed the women who had a continuous suture repair showed lower levels of pain from delivery to 3 months after delivery and had a lower incidence of urinary incontinence at 15 days postpartum.³¹ The more recent study by Aydin Besen and colleagues in 2020 revealed that patients having continuous suture closures showed less perineal pain, less analgesia need, better wound healing, shorter repair time, less material use during rest and daily activities in the early postpartum period compared to ones with the interrupted suture technique.³² Also in 2020, Sanson and colleagues brought together 401 perineal repair cases performed by physicians and midwives. They observed that only 45.4% (n=182) of the cases repaired with continuous sutures, suggesting that interrupted sutures were still more often performed. They also noticed interrupted sutures were more common in 1st and 2nd degree tears. The study also found out residents/obstetricians performed more continuous sutures significantly than

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midwives. Whatever the type of suture technique used (continuous or interrupted), all professional operators admitted they sutured in the way they felt most suitable to the degree of tearing/episiotomy. Fifty-one percent of midwives who performed repairs in this study were trained in continuous technique, compared to 81% of residents/obstetricians.³³

All the aforementioned studies showed that the development in the past twenty years displayed continuous sutures for episiotomy or perineal repair have functional advantages in term of faster and better wound healing, shorter post-procedural pain, more rapid resumption of sexual activity, and lower incidence of urinary incontinence. Aesthetically, continuous sutures resulted in more favorable scarring, and economically, they were beneficial in term of less consumption of suture materials.

ABSORBABLE VERSUS NON-ABSORBABLE SUTURE MATERIALS

When considering the advantages and disadvantages of using absorbable sutures versus non-absorbable sutures for episiotomy wound closure methods, clinicians should always think through both the clinical and aesthetic outcomes. Absorbable sutures offer several advantages in terms of clinical results. Absorbable sutures are designed to gradually degrade over time, eliminating the need for suture removal procedures and therefore reduce patient discomfort and minimize the risk of wound trauma during removal. Moreover, absorbable sutures are particularly beneficial when the wound edges are under low tension and are expected to heal without long-term support. They are also less likely to cause suture-related complications, such as granuloma formation or persistent inflammation.

Among the absorbable suture materials, clinicians utilized polyglycolic acid derivatives more than the others. Grant conducted a systematic review of the 14 relevant controlled trials in 1989 and showed that derivatives of absorbable polyglycolic acid were associated with less short-term perineal pain compared to the non-absorbable materials of silk and nylon.³⁴ Clinicians have long reduced the use of catgut sutures because of the patients complaints of unpleasant short-term post-procedural pain.³⁵

On the other hand, non-absorbable sutures provide long-lasting wound support, which can be advantageous in cases where the wound requires extended stability. These sutures, typically made of materials like polypropylene or nylon, offer excellent tensile strength and are suitable for wounds under high tension or with a longer healing timeline. Non-absorbable sutures reduce the risk of wound dehiscence and provide robust support, especially in situations where wound healing may be delayed or compromised.

In term of aesthetic outcomes, placing absorbable sutures subcutaneously can contribute to pleasing aesthetic results. As these sutures gradually break down, they may result in cleaner wound closures with no visible suture material. They

allow for precise alignment of wound edges, minimizing scar visibility. However, it is important to note that using absorbable sutures for surface skin closure may still leave behind small, discrete scars due to the presence of multiple suture knots along the wound line. Non-absorbable sutures may have different aesthetic implications.

Non-absorbable sutures may offer a smoother and more uniform wound closure, reducing scar visibility and promoting better aesthetic outcomes overall. There are some non-absorbable suture materials that have been shown to provide good aesthetic outcomes in wound closure, like nylon (Ethilon®) and polypropylene (Prolene®) for skin closure, and polyester (Mersilene®, Ethibond®) for both deep tissue and skin closure. Among those non-absorbable suture materials commonly used for episiotomy repair, polypropylene (Prolene®) and nylon (Ethilon®) are the most frequently utilized options, due to their high tensile strength, knot security, and ease of use as well as their favorable aesthetic outcome. However, it's important to note that the choice of suture material may vary depending on the surgeon's preference, the specific characteristics of the wound, and other individual patient factors. While non-absorbable suture materials can provide long-lasting wound closure, they require subsequent removal procedures which can result in track marks along the wound line, potentially affecting the aesthetic appearance. However, with careful removal techniques, these marks can be minimized.

NATURAL VERSUS SYNTHETIC SUTURE MATERIALS

When considering the advantages and disadvantages of using natural suture materials versus synthetic suture materials for episiotomy wound closure methods, clinicians should also consider the clinical and aesthetic outcomes. Natural-based sutures, such as those made from catgut or silk, offer several advantages in terms of clinical results. These sutures are derived from biological materials and are designed to be absorbed by the body over time. They are typically more pliable and have a softer texture, which can be advantageous in delicate tissues like the perineum. Natural-based sutures often elicit a reduced inflammatory response compared to synthetic sutures, potentially minimizing tissue reaction and facilitating wound healing. However, it is important to note that natural-based sutures have a shorter tensile strength compared to synthetic sutures, so they may not provide as much long-term wound support. Synthetic sutures, on the other hand, are made from artificial materials like polyglycolic acid (PGA), polyglactin, or polypropylene. These sutures offer greater tensile strength and can provide long-lasting wound support. They are particularly beneficial in cases where the wound requires extended stability or in situations with higher tension. Synthetic sutures are less prone to degradation and can maintain their strength for a longer duration. However, they may induce a greater inflammatory response compared to natural-based sutures,

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potentially resulting in a more noticeable tissue reaction.

In 1974, Livingstone and his colleagues compared between catgut (natural) and polyglycolic acid (synthetic) sutures in episiotomy repair and revealed that the most noteworthy finding was the significant reduction in the degree of pain which the patients experienced following episiotomy repair with polyglycolic acid sutures as compared to catgut sutures. There was also a significant reduction in the incidence of edema when polyglycolic acid sutures had been used, and there was no evident disadvantage in the use of polyglycolic acid sutures for episiotomy repair. By employing light and electron microscopy techniques it has been shown that polyglycolic acid sutures evokes considerably less inflammatory response than does catgut and other suture materials. Also polyglycolic acid sutures had a superior tensile strength to catgut sutures of comparable diameter, and thus clinicians could use polyglycolic acid sutures in a relatively smaller caliber than the catgut counterparts.³⁶ In 1978, Bänninger and his colleagues compared between chromic catgut and polyglycolic acid sutures and discovered that the degree of postpartum perineal pain was approximately half as great in patients with polyglycolic acid sutures, and the incidence of dehiscence of episiotomy was 3-5 times greater in the chromic catgut group. The aesthetic results 3 months postpartum were clearly better by using polyglycolic acid sutures, especially when the perineal skin was closed by a continuous intracutaneous suture.³⁷ A study by Nikolov and colleagues in 2006 declared that anatomical repair of the episiorrhaphy doesn't differ significantly depending on the type of suture material, however, erythema, edema and perineal pain are significantly less expressed in polyglycolic acid and polyglactin 910 groups compared to chromic catgut suture groups and silk suture groups. All suture materials were functionally and aesthetically acceptable.³⁸

In term of aesthetic outcomes, natural suture materials are often softer, more pliable, and have a finer diameter than the synthetic ones, which can result in a more seamless wound closure, help minimize scar visibility and promote better aesthetic results. However, it is important to consider that their absorption process may lead to discrete scars. In general, synthetic sutures may be more noticeable compared to natural-based sutures, and they are often firmer, which can result in more visible suture tracks and potentially impact the aesthetic appearance. However, there are several synthetic suture materials that have been used and proven to provide good aesthetic outcomes in wound closure, like polypropylene (Prolene®) for skin sutures, poliglecaprone 25 (Monocryl®) for subcutaneous closure, and polydioxanone (PDS®) for deep tissue closure and are known for their excellent handling and reduced tissue reaction. Polydioxanone sutures have been shown to produce good aesthetic outcomes with minimal scarring.

MONOFILAMENT VERSUS MULTIFILAMENT SUTURE MATERIALS

Monofilament sutures are composed of a single strand of suture material, such as nylon or polypropylene, and offer several advantages in clinical settings. Monofilament sutures have a smooth surface, which reduces tissue trauma during insertion and removal. This characteristic also makes them less prone to harboring bacteria, decreasing the risk of infection. Additionally, monofilament sutures have low tissue reactivity, reducing the likelihood of causing an inflammatory response. These factors contribute to better wound healing and decreased postoperative complications. On the other hand, multifilament sutures consist of multiple strands of suture material, such as silk or polyester, and offer benefits of better handling characteristics, such as flexibility and better knot security. They are particularly useful in cases where additional strength and stability are required, such as in wounds under high tension or in areas prone to dehiscence. In terms of aesthetic results, monofilament sutures have some advantages. Due to their smooth surface, they cause minimal tissue damage during insertion and removal, resulting in less scarring and improved aesthetic outcomes. The absence of interwoven filaments in monofilament sutures reduces the risk of suture marks or track marks along the wound line, further enhancing the aesthetic appearance. Multifilament sutures are more noticeable and potentially result in track marks or suture marks along the wound line. This can have a negative impact on the overall aesthetic appearance of the wound.

In 2006, Dencker and colleagues conducted a study to assess 1139 patients who required episiotomy suturing by a midwife and to study if patients sutured with a monofilament glycomer 631 (Biosyn®) would report fewer problems and lower levels of discomfort and pain compared with ones with a commonly used multifilament polyglycolic acid suture (Dexon® II). Perineal healing in the first 3 days showed no differences between the monofilament and the multifilament groups. Levels of discomfort and pain between the monofilament and the multifilament groups also did not differ significantly. One interesting fact was at the follow up after 8-12 weeks, more women in the monofilament group reported problems like redness and feeling of hardness in the sutured area, but there was still no difference in gaping or defective closure of the wound between both groups.

In summary, monofilament sutures offer advantages in terms of clinical outcomes, including reduced tissue trauma, decreased risk of infection, and improved wound healing. They also provide favorable aesthetic results by minimizing scarring and the presence of suture marks. On the other hand, multifilament sutures offer better handling characteristics and increased strength, but they may be more noticeable and potentially affect the aesthetic outcome due to the presence of multiple filaments and the possibility of track marks. The choice between monofilament and multifilament sutures should be based on the specific clinical scenario, taking into

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consideration the tension of the wound, the risk of infection, the desired aesthetic outcome, and the surgeon's preference and expertise.

CONCLUSION

Continuous sutures offer functional benefits in terms of clinical outcomes, aesthetics, and resource utilization. Continuous sutures are increasingly used, but interrupted sutures are still common, especially for lower-degree tears. Overall, continuous sutures offer functional benefits in terms of clinical outcomes, aesthetics, and resource utilization. Absorbable sutures gradually degrade over time, reducing patient discomfort and the risk of wound trauma, while non-absorbable sutures provide long-lasting support for wounds under high tension. Natural-based sutures offer seamless closure and minimal scar visibility, while synthetic sutures provide greater strength but in general they are more noticeable except certain types like polypropylene. Monofilament sutures minimize tissue trauma, infection risk, and scarring, whereas multifilament sutures offer better strength but may affect aesthetic outcomes. The choice of suturing materials should be strongly based on tear severity, tissue characteristics, desired aesthetic outcome, and surgeon preference.

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