Use of surgical glue to repair intrapartum perineal lacerations: a case series study

Uso de cola cirúrgica no reparo de lacerações perineais intraparto: estudo série de casos

Uso de pegamento quirúrgico para reparar desgarros perineales intraparto: estudio serie de casos

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Abstract

Objective: To describe the use of surgical glue to repair perineal trauma during normal delivery.

Methods: This is a case series study, which was carried out in three moments (up to 2 hours, 12-24 hours and 36-48 hours after delivery) in Itapecerica da Serra, SP. Women who had a normal delivery with perineal trauma with a suture (first or second degree laceration and episiotomy) were included. Perineal trauma was repaired exclusively with Glubran-2® surgical glue. Perineal pain intensity (11-point Visual Numeric Scale), healing process (15-point REEDA scale), satisfaction with repair (5-point Likert scale) were assessed. Data were analyzed in a descriptive and inferential way comparing the three moments.

Results: The technique of applying the glue and the required amount were defined in a sample of 19 women. Of these, 78.9% had first-degree lacerations, 15.8%, second-degree lacerations and 5.3%, episiotomy. The outcomes at moments 1, 2 and 3 were absence of pain (73.6%, 94.7% and 89.4%), score ≤1 on the REEDA scale (94.7%, 78.9% and 84, two%); 100% were satisfied with the repair at all times. There was no difference by the Friedman test for pain and satisfaction. The healing process showed a difference, but without confirmation in the hoc post-test.

Conclusion: The glue application proved to be viable for assessment in a larger sample of women, as the results suggest good acceptance by women and low or no pain, adequate healing and high satisfaction with the repair in the first 48 hours after delivery.

Resumo

Objetivo: Descrever o uso da cola cirúrgica no reparo do trauma perineal no parto normal.

Métodos: Estudo série de casos realizado em três momentos (até 2 horas, 12-24 horas e 36-48 horas após o parto), em Itapecerica da Serra, SP. Foram incluídas mulheres que tiveram parto normal com trauma perineal com indicação de sutura (laceração de primeiro ou segundo graus e episiotomia). O trauma perineal foi reparado exclusivamente com cola cirúrgica Glubran-2®. Avaliou-se: intensidade da dor perineal (Escala Visual Numérica com 11 pontos), processo de cicatrização (escala REEDA de 15 pontos), satisfação com o reparo (escala Likert de 5 pontos). Os dados foram analisados de forma descritiva e inferencial comparando os três momentos.

Resultados: A técnica de aplicação da cola e a quantidade necessária foram definidas em uma amostra de 19 mulheres. Destas, 78,9% tiveram laceração de primeiro grau, 15,8% de segundo grau e 5,3% episiotomia. Os desfechos nos momentos 1, 2 e 3, foram respectivamente: ausência de dor (73,6%, 94,7% e 89,4%); escore ≤1 na escala REEDA (94,7%, 78,9% e 84,2%); 100% satisfeitas com o reparo em todos os momentos. Não houve diferença pelo teste de Friedman para dor e satisfação. O processo de cicatrização mostrou diferença, porém sem confirmação no pós-teste hoc.

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Conflicts of interest: nothing to declare.

Conclusão: A aplicação da cola mostrou-se viável para avaliação em uma amostra maior de mulheres, pois os resultados sugerem boa aceitação pelas mulheres e dor de baixa intensidade ou ausente, cicatrização adequada e alta satisfação com o reparo nas primeiras 48 horas após o parto.

Resumen

Objetivo: Describir el uso de pegamento quirúrgico para reparar traumas perineales en partos vaginales.

Métodos: Estudio serie de casos realizado en tres momentos (hasta 2 horas, de 12 a 24 horas y de 36 a 48 horas después de parto), en Itapecerica da Serra, estado de São Paulo. Se incluyeron mujeres que tuvieron parto vaginal con trauma perineal e indicación de sutura (desgarro de primer o segundo grado y episiotomía). El trauma perineal fue reparado exclusivamente con pegamento quirúrgico Glubran-2®. Se evaluó la intensidad del dolor perineal (Escala Visual Numérica de 11 puntos), el proceso de cicatrización (Escala REEDA de 15 puntos) y la satisfacción respecto a la reparación (Escala Likert de 5 puntos). Los datos fueron analizados de forma descriptiva e inferencial, comparando los tres momentos.

Resultados: La técnica de aplicación del pegamento y la cantidad necesaria fueron definidas en una muestra de 19 mujeres. De ellas, el 78,9 % tuvieron un desgarro de primer grado, el 15,8 % de segundo grado y el 5,3 % episiotomía. Los resultados de los momentos 1, 2 y 3 fueron, respectivamente: ausencia de dolor (73,6 %, 94,7 % y 89,4 %); puntuación ≤1 en la escala REEDA (94,7 %, 78,9 % y 84,2 %); 100 % satisfechas con la reparación en todos los momentos. No se observó diferencia de dolor y satisfacción con la prueba de Friedman. El proceso de cicatrización mostró diferencia, pero sin confirmación en la prueba post hoc.

Conclusión: La aplicación del pegamento demostró ser viable para un análisis con una muestra mayor de mujeres, ya que los resultados sugieren buena aceptación por parte de las mujeres, dolor de baja intensidad o ausente, cicatrización adecuada y alta satisfacción respecto a la reparación en las primeras 48 horas después del parto.

Brazilian Clinical Trials Registry: RBR-2q5wy8

Introduction

Perineal trauma affects women worldwide and more than 85% of women who have had a vaginal delivery have suffered a spontaneous perineal laceration or episiotomy. In the United Kingdom and the United States, it is estimated that at least one third of perineal lacerations require repair.[1]

In Brazil, a cohort study found that the occurrence of first and second degree perineal lacerations was 36.4% and of third and fourth degree lacerations was 0.9%.[2]

Complications resulting from perineal trauma in the healing process can generate physical and psychological morbidities in the short and long term such as pain, edema, hyperemia, ecchymosis, infection, dehiscence, dyspareunia, urinary incontinence, anal incontinence, and decreased pelvic floor muscle strength (PFMS).[3-5]

Perinium recovery and morbidity reduction depend on the trauma prevention and correct assessment, the technique used for material repair and choice.[6-9] Suture with thread is the most traditional technique for perineal repair in normal childbirth, and the most used thread is the catgut; however, studies consider that the technique of continuous suture using synthetic fast absorbing Vicryl® thread is the most recommended for perineum repair.[6,9]

Surgical glue has been tested to repair tissue trauma in several areas of health, as it is less invasive and has a high degree of resistance, facilitating the surgical procedure.[10-12]

A comparative study between the use of the fast absorbing Vicryl® suture and the octyl-2-cyanoacrylate surgical glue, used in superficial trauma, found that the use of the glue for perineal repair showed similar aesthetic and functional results to the suture with wire; and still presented advantages, such as reduced repair procedure time, decreased pain, exemption from the need for local anesthesia and greater satisfaction of women.[13]

In a parallel, controlled and randomized pilot study that compared the use of surgical glue with the suture thread in first-degree lacerations, lower pain intensity, better healing score and greater satisfaction were found in women undergoing repair with surgical glue than in with suture.[14]

Another randomized clinical trial with 100 primigravidae compared skin repair in episiotomies, using Dermabond® glue in one group and Vicryl Rapide® in the other; with the use of glue, less repair time and less pain intensity were observed during and after the procedure, with similar results regarding healing.[15]

It is believed that perineal repair with surgical glue can contribute to the greater satisfaction of women with normal childbirth, as it can decrease perineal pain intensity and improve the process of perineal healing.

This work is justified by the need to study more widely the use of surgical glue in perineal trauma,

because although the literature shows positive results in obstetrics and other areas of health, there are no published studies on glue repair in all tissue planes, i.e., in second-degree lacerations and/or episiotomies, in addition to a variety of glue types and lack of information on the best application technique for perineal repair.

In this context, aiming to know new techniques and materials to improve delivery assistance and the quality of care for perineal trauma in first and second degree lacerations or episiotomies, this study aimed to describe the use of glue to repair perineal trauma resulting from normal birth.

Methods

Type of study, place, and sample

This is a case series study on the use of Glubran-2® surgical glue in the perineal repair of first and second degree perineal lacerations or episiotomy in relation to perineal pain, healing process and women's satisfaction, with follow-up up to 48 hours after normal delivery. The study was carried out at the Birth Center (BC) of *Pronto-Socorro e Maternidade Municipal Zoraide Eva das Dores* (PSMMZED - Emergency Room and Maternity), a reference for pregnant women of habitual risk, in the municipality of Itapecerica da Serra, São Paulo State.

The sample consisted of convenience with 19 women who agreed to undergo perineal repair with surgical glue and met the following inclusion criteria: being in labor with up to 6 centimeters of dilation; not having a previous vaginal delivery; not using steroids; not having leukorrhea or any sign of infection at the repair site; having no difficulty understanding Portuguese or communicating.

The exclusion criteria were indication of cesarean section during labor and normal delivery with intact perineum or with perineal trauma without indication of suture. It is noteworthy that the need or not for perineal repair/suture was assessed by a service professional who was not part of the research team and the assessment of perineal repair was performed by a nurse from the research team.

Description of the surgical glue used: Intervention

For perineal repair, Glubran-2® synthetic surgical glue, cyanoacrylate-based, was used, modified by the addition of a monomer, synthesized by the manufacturer GEM S.r.l, in Italy. This glue is classified as a class III surgical medical product, which can be used on the skin and in superficial and deep tissues, according to the requirements of the European Directive 93/42/EEC. It is noteworthy that this glue is registered (80159010003) with the Brazilian National Health Regulatory Agency (ANVISA - *Agência Nacional de Vigilância Sanitária*). The manufacturer also describes that the glue is versatile, as it can be used in all types of traditional surgeries, laparoscopic and endoscopic treatments, in addition to having high hemostatic and adhesive properties. Once solidified, the glue produces an effective antiseptic barrier against the most frequent infectious or pathogenic agents in surgical interventions. It is a clear, transparent liquid and ready to be used.

When in contact with living tissue or humid environment it quickly polymerizes, creating a thin elastic film with high resistance to tension, which guarantees a solid adherence of tissues and is not damaged by blood or organic fluids. The polymerization time varies depending on the type of fabric that the glue comes into contact with, the nature of fluids present and the amount of product applied. If used correctly, the glue starts to solidify in approximately 1 to 2 seconds, completing its reaction after about 60 to 90 seconds, reaching its maximum mechanical strength. In normal surgical procedures, the glue film is eliminated through a hydrolytic degradation process. The duration of this process varies depending on the type of fabric and the amount of glue applied.

Due to the type of intervention and outcomes, there was no possibility of blinding, so both participants and researchers knew at all times that the type of perineal repair would be with surgical glue. Women also knew that they would be accompanied by the researchers during the entire hospitalization. It is also worth mentioning that during the assessment of the healing process, it is possible to check the material used.

Variables, exposure, and outcomes

The variables analyzed were intensity of perineal pain, healing process and women's satisfaction with the perineal repair performed.

Exposure was considered perineal repair with surgical glue and as outcomes, pain intensity, perineal healing and woman's satisfaction with perineal repair were considered.

Perineal pain intensity was assessed using VNS, which consists of a horizontal line with 11 points and values in centimeters from 0 (zero) to 10 (ten), with 0 being classified as painless and 10 being the worst possible pain.[16] The study participant received the scale and indicated the number corresponding to pain intensity. For statistical analysis purposes, pain was later categorized as painless (0), mild pain (1-4), moderate pain (5-7) and severe pain (8-10).[17]

To assess the healing process of perineal trauma, the REEDA scale was used, which corresponds to five items in English: redness, edema, ecchymosis, discharge, approximation and in Portuguese it means: hyperemia, edema, ecchymosis, secretion and coaptation. For each assessed item, a score from 0 (zero) to 3 (three) was assigned, with a maximum score of 15 corresponding to the worst perineal healing result.[18] However, literature does not present a defined punctuation value to affirm that the process of perineal repair has already occurred; the consensus is that values around 1 are indicative that the healing process is taking place or has already taken place properly. To measure the REEDA scale items, the Peri-Rule® ruler was used. This tool is made of malleable plastic, graduated in centimeters, and is recommended to measure the depth and extent of perineal trauma.[19] This ruler was wrapped in a layer of PVC film and reused after cleaning with water and soap, followed by antisepsis with 70% alcohol. In each assessment, the researcher checked whether or not a new perineal repair was necessary and if the coaptation item was greater than or equal to two, a new repair was performed with surgical glue or with suture if there was difficulty with the repair with surgical glue.

The woman's level of satisfaction with the type of perineal repair was assessed using a five-point Likert scale, corresponding to: very dissatisfied, dissatisfied, indifferent, satisfied and very satisfied. For the report of satisfaction with perineal repair, women were asked to see the region of their perineal repair, through a mirror, and, afterwards, to answer about their satisfaction.

Training, description of the technique used to apply Glubran-2® surgical glue and data collection

Before the start of data collection, surgical glue was applied to bovine tongue tissues and other pieces of beef, such as the shoulder tip and chuck steak, in order to develop and improve the technique. After defining the best technique for applying surgical glue, training was carried out for the entire research team, still in bovine parts, to standardize the application mode. From that moment on, the use of surgical glue began in the women included in the research, with adjustments being made to the procedure, as necessary, until the definitive application technique was established. It is worth mentioning that a nurse and a biologist, who were representatives of the glue distributor, accompanied the researchers during the training, aiming to assist in the application of the technique.

Irregular perineal lacerations or the presence of active bleeding make the repair more difficult than in regular or non-bleeding lacerations, even when repairing with surgical thread. This fact was also observed with the use of surgical glue. However, the researchers believe that the improvement of the glue application technique related to the quantity, polymerization time and use of applicator or syringe and needle demanded a longer study time, than initially expected, until the technique was developed with excellence. It is worth clarifying that the description of the technique used for the application of surgical glue was improved during the data collection of this study, since it had already been tested in bovine tissues.

The technique was developed and the researchers proposed a protocol for the application of surgical glue in perineal repair, as described below:

1. Place women in the gynecological position, with the naked genital region;

2. Put on sterile gloves;
3. Assess the conditions of the perineum and classify perineal lacerations or episiotomy;
4. Insert a pad of gauze into the vaginal introitus to prevent blood from escaping and keep the area of perineal trauma dry, if necessary;
5. Perform antisepsis with 0.9% saline at the site where the perineal repair will be done;
6. Dry the area to be repaired with gauze;
7. Let the product present flow from the neck of the ampoule to the bottom of the ampoule;
8. Check glue fluidity and transparency. If the product has a slightly fluid and/or cloudy appearance, it cannot be used;
9. Remove the top of the ampoule by turning it;
10. Invert the ampoule and, with a slight pressure, let the glue flow until the end of the ampoule impregnates;
11. Exert a slight pressure on the ampoule body, apply surgical glue directly to the subcutaneous tissue, muscles, skin and vaginal mucosa, drop by drop, approximately one drop per cm^2;
12. Bring the tissues together with the fingers, obeying the perineal anatomy, supporting the edges with two fingers for 90 seconds, a period necessary for the glue to complete its reaction;
13. Check if the perineal repair is adequate, that is, according to the perineal anatomy and if it is not suitable, undo the bonding with a scalpel blade or forceps and try a new application, if it is not possible, suture the laceration by continuous technique and with the fast absorbing Vicryl® yarn;
14. Leave women in a comfortable, covered position.
15. Guide how to perform hygiene with water and soap in the place repaired with surgical glue, at least three times a day, and advise that if they noticed the presence of the glue, they should not remove it.

Data collection took place in three stages, from February to March 2017:

At Moment 1, it was carried out during labor, in the eligibility phase, when women were invited to participate in the research, after explaining the objectives of the study. The interview was carried out to survey sociodemographic and obstetric data. After birth, women who met the inclusion criteria were included in the study and surgical glue was applied for perineal repair. Immediately after perineal repair, in a period of no more than 2 hours after delivery, the other study variables (pain, perineal healing and women's satisfaction) were collected).

Moment 2 occurred between 12 and 24 hours after delivery. Moment 3 occurred between 36 and 48 hours after delivery.

Data collection was performed by six obstetric nurses who were part of the research team and any of these professionals could perform perineal repair. Perineal repair assessment was performed by one of these research nurses in conjunction with nurses on duty, without the requirement that women's assessment be done by a single professional during the three moments. In this way, women could be assessed by different professionals over the three moments of data collection.

Statistical treatment

Data analysis was performed using descriptive and inferential statistics, using Friedman's non-parametric test, with comparison between the three moments. The value of p=0.05 was adopted for significance.

Ethical aspects

The research project was approved by the Municipal Health Council of Itapecerica da Serra and by the Research Ethics Committee of the School of Arts, Sciences and Humanities of *Universidade de São Paulo* (CAAE (*Certificado de Apresentação para Apreciação Ética* - Certificate of Presentation for Ethical Consideration) 44832615.1.0000.5390). The study followed all ethical determinations, with the voluntary participation of women in the research, demonstrated by signing the Informed Consent Form. It is worth mentioning that the researchers have no link with the manufacturers or distributors of the materials used in this study.

Results

Initially, 28 women who met the inclusion criteria during labor were approached in the study, however

there was a loss of one woman due to withdrawal from participating in the research and eight were excluded from the final sample following. The reasons that led to the exclusion were: two women had an indication for cesarean section; four had perineal trauma without the need for repair and in two cases there was excessive perineal bleeding (one after second degree laceration and the other after episiotomy), with difficulty in repairing with glue; polymerization took place before the adhesion between the tissues, requiring repair with suture. Therefore, it was observed that the presence of profuse bleeding, with the need for local pressure hemostasis, in tissue to be repaired prevented the use of surgical glue, with a rate of 9.5% (n=2) of failure with the procedure. No other events were observed that would prevent the use of surgical glue for perineal repair. The final sample consisted of 19 puerperal women assessed from perineal repair to 48 hours after delivery.

Women's sociodemographic and obstetric characteristics

The average age of women was 20 years (SD=6.8); 52.6% (n=10) called themselves brown or black and 47.4% (n=9) white; most completed high school (63.2%; n=12); 26.3% (n=5) engaged in paid activity; all reported having a steady partner; the average gestational age at admission was 39.6 (SD=1.1) weeks. As for the puerperium conditions, 78.9% (n=15) had first degree lacerations, 15.8% (n=4) second degree and an episiotomy, 5.3%, with greater occurrence in the region of the wishbone (73.6%; n=14) and entrance exam (42.1%; n=8) (data not shown in table).

Perineal pain, healing and women's satisfaction

The absence of perineal pain, assessed by Visual Numerical Scale (VNS), was reported by most of participants, in the three moments. Only two women reported moderate or severe pain right after perineal repair. The Friedman test did not show any significant difference between the three moments with respect to pain intensity (p=0.142) (Table 1).

Regarding the healing process, assessed by the REEDA scale, only one woman presented an alteration (score 2) shortly after perineal repair. However, half of them had a score of 1 to 3 between 12 and 24 hours postpartum. Between 36 and 48 hours postpartum, there was an improvement in the score. The Friedman test showed a difference between the three moments (p=0.014), but without confirmation in the hoc post-test, which allows us to infer that there was no significant difference (Table 1). When performing the hoc post-test (significance 0.05/3 moments=0.016), the value 0.014 was considered very close to the cut of significance, with no difference being attributed between groups. Participants' satisfaction with perineal repair was progressive within 48 hours postpartum, and at moments 2 and 3 all women reported being satisfied or very satisfied. There was no significant difference between the three moments of the study (p=0.526) (Table 1).

Table 1. Pain intensity, healing process and women's satisfaction with perineal repair

Pain intensity	Moment 1 n(%)	Moment 2 n(%)	Moment 3 n(%)	P value
Painless	14(73.6)	18(94.7)	17(89.5)	0.142*
Mild pain (1-4)	3(15.8)	1(5.3)	2(10.5)	
Moderate pain (5-7)	1(5.3)	-(-)	-(-)	
Severe pain (8-10)	1(5.3)	-(-)	-(-)	
Total	19(100)	19(100)	19(100)	
REEDA Scale Score	**Moment 1 n(%)**	**Moment 2 n(%)**	**Moment 3 n(%)**	
0	18(94.7)	9(47.3)	12(63.2)	0.014*+
1	-(-)	6(31.6)	4(21.0)	
2	1(-)	3(15.8)	3(15.8)	
3	-(-)	1(5.3)	-(-)	
Total	19(100)	19(100)	19(100)	
Women's satisfaction	**Moment 1 n(%)**	**Moment 2 n(%)**	**Moment 3 n(%)**	
Very dissatisfied	1(5.3)	-(-)	-(-)	0.526*
Dissatisfied	-(-)	-(-)	-(-)	
Indifferent	1(5.3)	-(-)	-(-)	
Satisfied	7(36.8)	10(52.6)	7(36.8)	
Very satisfied	10(52.6)	9(47.4)	12(63.2)	
Total	19(100)	19(100)	19(100)	

* Friedman test; + Hoc post test

In the assessment of the five REEDA scale items (Table 2), it was found that edema, ecchymosis and coaptation were the parameters with some alteration. Perineal or vulvar edema between 1 and 2 cm from the incision (score 2) was observed in one woman in the first moment, while perineal edema with less than 1 cm from the incision (score 1) was

observed in four women in the second moment . Ecchymosis up to 0.25 cm from the incision bilaterally or 0.5 cm unilaterally (score 1), was verified in a woman in the second moment. The irregular coaptation of the edges, with skin separated at 3 mm or less (score 1), was seen in two women in the second moment and in four women in the third moment. In turn, skin and subcutaneous separation (score 2) occurred in four women in the second stage and in three women in the third stage.

Table 2. REEDA scale items with change

	Swelling						Total
Score	0	%	1	%	2	%	n(%)
Moment 1	18	94.7	-	-	1	5.3	19(100.0)
Moment 2	15	78.9	4	21.0	-	-	19(100.0)
Moment 3	19	100.0	-	-	-	-	19(100.0)
	Ecchymosis						Total
Score	0	%	1	%	2	%	n(%)
Moment 1	19	100.0					
Moment 2	18	94.7	1	5.3	-	-	19(100.0)
Moment 3	19	100.0	-	-	-	-	19(100.0)
	Coaptation						Total
Score	0	%	1	%	2	%	n(%)
Moment 1	19	100.00	-	-	-	-	19(100.0)
Moment 2	13	68.4	2	10.5	04	21.1	19(100.0)
Moment 3	12	63.2	04	21.1	03	15.7	19(100.0)

In the application of surgical glue, it was observed that an excessive amount of glue prevented the tissue from approaching properly, as it forms a non-adherent film. Thus, the drip technique proved to be ideal.

Discussion

Based on the results presented, it was verified that the surgical glue application technique described proved feasible to be used in future studies. It is suggested the prior training of professionals to perform the technique of applying surgical glue for perineal repair, because although it is a simple method, it requires training and skill.

The results of this study also demonstrate that conducting research using surgical glue is feasible for perineal repair in first and second degree lacerations and episiotomy, as there was low pain intensity, adequate healing process of perineal trauma and good women's satisfaction with the procedure, with results similar to those found in literature with the use of suture.[13, 20-22]

The technique of continuous suture with the fast absorbing Vicryl® suture has been presented as the gold standard for perineal repair as it results in decreased perineal pain, better healing of perineal trauma and greater women's satisfaction with perineal repair.[20]

In literature, it can be seen that comparative studies between the use of surgical glue and suture thread for perineal repair demonstrated that pain intensity scores were lower with the use of surgical glue.[21] In the current study, the use of surgical glue was not compared with the suture thread, however, there were few reports of perineal pain soon after perineal repair and no reports between 12 and 48 hours, indicating that, as in other research, there seems to be a decrease in perineal pain intensity in the first two days postpartum with the use of glue.[21,22]

In a randomized clinical trial on the use of surgical glue or threaded suture to repair first-degree lacerations, a significantly lower score on pain VNS was observed with the use of the glue (1.7 versus 4.1; p> 0.001) immediately after the procedure. Women's satisfaction with both procedures was high in both perineal repair procedures (average of 9.42 on a scale of 0 to 10, 10 being very satisfied). The authors concluded that, in addition to decreasing pain intensity, the use of glue showed aesthetic and functional results similar to the suture with thread and presented advantages such as reduction in the time of perineal repair, exemption from the need for local anesthesia and greater women's satisfaction.[13]

When the healing process was assessed using the REEDA scale, only the items edema, ecchymosis and coaptation were identified, however with no significant difference between the three observed moments. In different studies, when comparing conventional suture methods and the use of surgical glue, it was found that there was no difference in the healing process between the two methods; however, the authors concluded that efficacy, quality and safety in the healing process when using surgical glue were higher.[15,22]

It was decided to assess women's satisfaction in relation to the procedure, since studies carried out

in the health area have been increasingly concerned with individuals' satisfaction, as they consider that the data collected are significant to identify gaps and develop improvements in assistance, in the choice of materials used and to better meet users' expectations.[23]

Women's satisfaction in relation to repair with surgical glue was observed at all times of the research, showing good acceptance by women regarding the aspect of their perineum and the use of surgical glue, confirming the findings found in other studies.[13,15,22]

Surgical glue does not require anesthesia for its application, being a quick, painless and easy procedure by a trained professional.[13] The American College of Obstetricians and Gynecologists (ACOG) recommends the use of surgical glue as an option for perineal repair of first-degree lacerations and skin in second-degree lacerations, as it has a shorter time to repair, lower referred pain score and greater satisfaction with the result (Recommendation level B).[20]

As this is a case series study, there was a limitation as to the small sample size, as to the high frequency of women with first-degree lacerations compared to those with second-degree lacerations and episiotomy. This fact was due to the inclusion of women in the study for convenience and not due to randomization criteria, as in a clinical trial. It is noteworthy that the repair was only carried out after the assessment of a service professional, unrelated to the collection team, indicating the need for the procedure.

Another limitation observed was the performance, by different researchers, of the assessment of the scores of the measures, over the three moments. If, on the one hand, this fact made it possible to carry out the collection at the appropriate time, reducing losses from follow-up, on the other, it may have enabled greater variation in the scores of the measures, due to disagreement among observers.

Regarding the difficulties encountered in the development of the technique for using surgical glue, it was found that the amount of glue used for tissue repair influenced the proper performance of the procedure, as its excess prevented the tissues from approaching when forming a non-adherent film. This difficulty was minimized by the drip technique.

Another difficulty was excessive bleeding in the tissues to be repaired, the use of glue being contraindicated when local pressure hemostasis is required. The presence of excessive bleeding was also considered as an impeding factor for the use of surgical glue in literature.[13]

The present study presents results that will serve as a basis for further research. The application of surgical glue is an option to the traditional suture and the results suggest good acceptance by women and good perineal results. It is considered important that further studies are carried out on different types of perineal repair, aiming to find the materials and techniques that bring the best benefits for women and professionals who assist in childbirth.

Conclusion

The application of surgical glue proved to be feasible for use in a larger sample of women, using the technique described in this study. The results showed that in the first 48 hours after delivery, women had low or no pain and that the healing process was favorable. The mothers reported satisfaction with their perineal repair, which suggests a good acceptance of surgical glue.

Collaborations

Caroci-Becker A, Brunelli WS, Lima MOP, Mendes EPB, Ochiai AM and Riesco MLG contributed to the study design, data analysis and interpretation, writing of the article, relevant critical review of intellectual content and final approval of the version to be published.

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