Original Article

Evaluation and treatment of perineal pain in vaginal postpartum*

Avaliação e tratamento da dor perineal no pós-parto vaginal

Evaluación y tratamiento del dolor perineal en el posparto vaginal

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ABSTRACT

Objectives: To identify the prevalence, intensity and therapeutic measures for relief of perineal pain in the vaginal postpartum. **Methods:** Cross-sectional study in a University Hospital Rooming Unit of the University of Sao Paulo; data were collected through interviews with 303 postpartum women who delivered vaginally (numeric scale from 0 to 10) to assess: perineal pain, perineal assessment and medical record data. **Results:** The prevalence of perineal pain was 18.5%, with moderate intensity (51.8%) associated with presence of episiotomy (p = 0.001). There were 303 vaginal deliveries, 80.5% had perineal trauma, episiotomy, 75.4% and 24.6% lacerations. The oral analgesic was the method used to relieve perineal pain. **Conclusion:** There are several treatments for perineal pain relief and there are no effective methods for complete resolution of the problem.

Keywords: Perineum; Pain; Postpartum period; Nursing care

RESUMO

Objetivos: Identificar a prevalência, intensidade e medidas terapêuticas de alívio da dor perineal, após o parto vaginal. **Métodos:** Estudo transversal realizado na Unidade de Alojamento Conjunto do Hospital Universitário da Universidade de São Paulo e os dados foram colhidos por entrevista, junto a 303 puérperas que tiveram parto vaginal, com escala numérica (0 a 10) para avaliar a dor perineal, avaliação perineal e dados do prontuário. **Resultados:** A prevalência da dor perineal foi de 18,5%, com intensidade moderada (51,8%), associada à presença de episiotomia (p=0,001). Houve 303 partos vaginais; 80,5% apresentaram trauma perineal, 75,4% episiotomias e 24,6% lacerações. O analgésico oral foi o método mais utilizado para alívio da dor perineal. **Conclusão:** Há diversos tratamentos para o alívio da dor perineal; não há método com completa eficácia para a resolução do problema.

Descritores: Períneo; Dor; Período pós-parto; Cuidados de enfermagem

RESUMEN

Objetivos: Identificar la prevalencia, intensidad y medidas terapéuticas de alivio del dolor perineal en el posparto vaginal. **Métodos:** Estudio transversal realizado en la Unidad de Alojamiento Conjunto del Hospital Universitario de la Universidad de Sao Paulo; los datos fueron recolectados por medio de entrevista a 303 puérperas que tuvieron parto vaginal (escala numérica de 0 a 10) para evaluar: el dolor perineal, la evaluación perineal y los datos de la ficha médica. **Resultados:** La prevalencia del dolor perineal fue de 18,5%, con intensidad moderada (51,8%), asociada a la presencia de episiotomía (p=0,001). Hubo 303 partos vaginales; 80,5% presentaron trauma perineal, 75,4% episiotomías y 24,6% laceraciones. El analgésico oral fue el método más utilizado para aliviar el dolor perineal. **Conclusión:** Existen diversos tratamientos para el alivio del dolor perineal y no existen métodos con completa eficacia para la resolución del problema.

Descriptores: Perineo; Dolor; Periodo de posparto; Atención de enfermería

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INTRODUCTION

Spontaneous or surgical perineal traumas are frequent after normal delivery and can lead to relevant maternal morbidities. According to literature, a direct relation exists between the extent and complexity of the perineal lesion and the morbidities affecting women in the postpartum period[1], mainly related to the episiotomy.

Among the morbidities that are due to the surgical incision that is made in the vaginal opening while giving birth, some can occur in the short term, such as: vaginal bleeding, infection, suture dehiscence and hematoma, which can interfere in the breastfeeding process and enhance painful experiences. In the long term, dyspareunia, urinary and fecal incontinence and pelvic floor problems can occur[1-3].

Some of these problems are reported in a study that involved 1,573 women in the United States, who were interviewed two months after giving birth. The study reported puerperal complaints regarding episiotomy after spontaneous vaginal delivery. In multiparous women, associations were observed with intestinal problems ($p=0.001$), perineal pain ($p<0.001$), perineal infection ($p<0.001$) and interference of pain in daily activities ($p<0.001$)[4].

Considerable variation is found in episiotomy rates, although the World Health Organization[5] recommends its limited use in about 10% of normal deliveries. In Brazil, data from the National Survey on Child and Women's Demographics and Health (PNDS-2006) appoint that, in the last decade, episiotomy was performed in 70% of normal deliveries[6]. In the Netherlands, the total intervention rate was 8%, against 14% in England, 50% in the United States of America and 99% in Eastern Europe[7].

High episiotomy frequencies are often justified as a way to prevent severe perineal lacerations. Certain conditions are mentioned in literature as risk factors for several spontaneous perineal lacerations, such as instrumental delivery (forceps application or vacuum extraction), primiparity, lithotomy position, perineal tissue stiffness, bad adaptation of fetal presentation in the symphysis pubis, anomalous fetal position, fetal macrosomia and rapid fetal delivery[8-10].

Hence, perineal trauma is a determinant factor for postpartum perineal pain. A study showed that perineal pain increased with the severity of the injury seven days after birth, with 38% of women with intact perineum mentioning pain, against 60% of women with first and second-degree laceration and 91% with third and fourth-degree laceration[11]. Recently, a cohort study that involved 241 women in the puerperal period identified that 173 (92%) of them reported perineal pain on the first day after delivery, independently of their perineal trauma[12].

A large-scale survey, carried out two months after birth, revealed that most of the women submitted to instrumental delivery mentioned perineal pain, 77% of whom were primiparous and 52% multiparous, and that 31% of the 73% of primiparous women after spontaneous vaginal delivery had an episiotomy[4].

Pharmacological and non-pharmacological treatments have been investigated for perineal pain control after vaginal delivery. Traditionally, oral analgesics (nonsteroidal antiinflammatory agents), local anesthetics and cold and warm sitz baths are used in postpartum care to treat perineal lesions.

In the puerperal period, the presence of pain entails difficulties to practice motherhood and perform daily activities, such as self-care, breastfeeding and newborn care. It also interferes in the women's sleep, rest, movements, urination, evacuation and appetite[13-14]. These difficulties can cause important physical, psychological and emotional problems that cooperate towards negative delivery experiences.

Although it is one of women's main postpartum complaints, the postpartum women themselves, their families and health professionals tend to devalue perineal pain, since the newborn care becomes a priority in this period, while the women's needs move to the background[13,15].

It is a priority for health professionals who attend women in the puerperal period to identify and value the morbidities deriving from normal delivery, particularly the presence of pain. The identification of spontaneous perineal pain and methods used for its relief are considered important to minimize it, offering women the possibility to experience motherhood in a positive and pleasant way. In this sense, this study aimed to identify the prevalence and intensity of postpartum perineal pain during hospitalization and verify the use of therapeutic measures for its relief.

METHODS

A cross-sectional research was carried out, with prospective data collection on puerperal perineal pain occurrence and treatment. It was accomplished at the Rooming-In (RI) Unit of the University of São Paulo University Hospital (HU-USP). At this hospital, after assessment, the neonatologist releases the newborn, who is forwarded to the RI together with the mother, where the following are prescribed to the postpartum women: 50 mg of diclofenac sodium and a compound with dipyrone sodium, adiphenine and promethazine, both in the form of a pill, taken every eight hours if necessary; 30 drops of dipyrone; and as topical treatment: an anesthetic spray, containing benzocaine, menthol, benzethonium chloride and benzoxiquine, every six hours

if necessary. Exceptionally, nonsteroidal antiinflammatory agents are used. Moreover, sitz baths and ice packs are used. In general, hospital discharge takes place 60 hours after birth.

The study population included 303 postpartum women, hospitalized between January and March 2007 at the RI of HU-USP. A convenience sample was defined, according to the women's availability to participate in the study, according to the following inclusion criteria: older than 15 years of age; after (normal or forceps) vaginal delivery from a single pregnancy, live and full-term fetus, without clinical or obstetric intercurrences during the data collection period. The women were selected from the Admission Book, which contains information on the delivery type, date and time, besides the postpartum woman's name and bed number. Through this information, the women were located and informed about the study purpose and the voluntary nature of their participation.

After the women agreed and signed the Informed Consent Term, data collection started. One of the researchers collected the data at a private room of the RI/HU-USP from Monday to Friday. The following were used for data collection: interview to assess spontaneous perineal pain, patient file analysis and perineal examination. A form was applied, with data on: woman's identification, obstetric data, pain complaints, pharmacological and non-pharmacological treatment for pain relief and information regarding the interview and perineal examination.

In the study, women without previous deliveries were considered nulliparous, while women with one or more previous deliveries upon admission were considered multiparous.

To assess perineal pain intensity, an 11-point numerical scale was used, with the following pain classification: zero - absence; 1 to 3 - mild; 4 to 6 - moderate; 7 to 9 - strong; 10 - unbearable. Pain assessment took place between two hours after birth and hospital discharge, during an interview where the women were asked: "do you feel any pain in the perineal region right now?" In case of an affirmative answer, the abovementioned numerical scale was applied.

Perineal inspection was done at a private room, with the women placed in the gynecological position. This assessment only involved women who mentioned perineal pain. The Peri-rule™* was used to assess the extent of the episiotomy, externally measuring the skin from the furcula towards the end of the incision.

Descriptive and comparative analysis was performed, using SPSS for Windows version 10.0. The Chi-square test was used to check the association between the trauma type and perineal pain. Approval for the research project was obtained from the Institutional Review Board of HU-USP, under registration No. 698/06.

RESULTS

Study participants were 303 women after vaginal birth at the institution during the data collection period. Approximately 40% of these women were between 20 and 24 years old, with a mean age of 24.3±5.9 years, median 23 years, minimum 15 and maximum 43 years, respectively. White (71%) and multiparous (51.8%) women predominated, and the majority (67.3%) had a normal birth (Table 1).

Table 1 -Postpartum women according to age range, color, parity and delivery type. HU-USP, 2007.

Age range	n	%
Age range (years)		
<19	65	21.4
20-24	120	39.6
25-29	59	19.5
>30	59	19.5
Skin color		
White	215	71.0
Others	77	25.4
Black	11	3.6
Parity		
Nulliparous	146	48.2
Multiparous	157	51.8
Delivery type		
Normal	204	67.3
Forceps	99	32.7
Total	303	100

Among the 303 participants, 244 (80.5%) had some type of perineal trauma, against 59 (19.5%) with an intact perineal region. The most frequent perineal trauma was episiotomy (75.4%) and, in nine cases, that intervention occurred simultaneously with perineal laceration (Table 2).

The length of the episiotomy ranged from 2 to 5 cm, with a mean 3.2 cm, standard deviation 0.9 cm and median 3 cm. At the institution, plain zero catgut suture is used for perineal trauma.

Among the 303 women after vaginal delivery, pain prevalence during the puerperal period amounted to 18.5% (56 participants). The time passed since the delivery until the pain was identified ranged from 1.9 to 97.7 h; with a mean 27.7±19.6 h and median 23.1 h. It should be highlighted that some postpartum women had a longer stay in the hospital, due to the baby's phototherapy treatment.

* http://www.peri-rule.bham.ac.uk/

Table 2 -Perineal trauma type among postpartum women. HU-USP, 2007.

Perineal trauma	n	%
Episiotomy	184	75.4
Spontaneous laceration	60	24.6
First degree	39	16.0
Second degree	20	8.2
No data	1	0.4
Total	244	100

Referred spontaneous perineal pain intensity was predominantly moderate (51.8%), with a mean 4.8±1.9, median 4.5, minimum 2 and maximum 10. Eleven women (19.6%) mentioned strong or unbearable pain (Table 3). Women submitted to forceps delivery mentioned perineal pain more frequently (41.1%) in comparison with spontaneous delivery, without any statistically significant difference (p=0.138).

Table 3 -Time passed since delivery until mentioning of perineal pain and referred perineal pain intensity. HU-USP, 2007.

Variable	n	%
Time after delivery (h)		
< 24	30	53.6
24 to 48	18	32.1
> 48	8	14.3
Pain intensity		
Mild (1 to 3)	16	28.6
Moderate (4 to 6)	29	51.8
Strong (7 to 9)	9	16.0
Unbearable (10)	2	3.6
Total	56	100

The analysis of perineal pain frequency associated with trauma type showed that significantly more postpartum women who underwent episiotomy mentioned pain (80.4% against 56.3% in the group without pain), with a statistically significant difference. No statistical difference was found, however, between women with perineal pain and the occurrence of spontaneous perineal laceration (Table 4).

It should be added that, out of 56 postpartum women who mentioned pain, 42.9% experienced perineal alterations, particularly edema (37.5%), hyperemia (5.4%) and ecchymosis (3.6%).

Twenty women (35.7%) received no perineal pain relief method.

Among the 35 women who received pharmacological treatment for pain relief purposes, 29 received oral medication with Dipyrone Sodium, Diclofenac Sodium or topical anesthetic spray; five used the anesthetic spray, and a nonsteroidal antiinflammatory agent was administered intravenously in one postpartum woman.

Table 4. Postpartum women with and without perineal pain, according to type of perineal trauma. HU-USP, 2007.

Variable	Perineal pain				Total	p-value*
	No		Yes			
	n	%	n	%		
No spontaneous laceration	187	75.7	47	83.9	234	0.185
Spontaneous laceration	60	24.3	9	16.1	69	
Episiotomy	139	56.3	45	80.4	184	0.001
No episiotomy	108	43.7	11	19.6	119	
Total	247	100	56	100	303	

*Chi-square test

Table 5 -Postpartum perineal pain treatment type during hospitalization. HU-USP, 2007.

Treatment type	n	%
Pharmacological	35	59.3
Oral	29	49.2
Topical	5	8.5
Intravenous	1	1.8
No	24	40.7
Total*	59	100
Non-pharmacological	13	23.2
Warm sitz bath	11	19.6
Ice	2	3.6
No	43	76.8
Total	56	100

***** Two women had more than one drug prescribed.

It should be mentioned that, although the women were medicated, 13 were also submitted to non-pharmacological methods for perineal pain relief, i.e. 23.2% of the 56 women who mentioned pain in that region. In this group, topic heat was the most used technique (11), while ice was applied in only two women.

DISCUSSION

Regarding the women's characteristics, the majority (61%) was younger than 25 years. A similar study at the same hospital, which involved 100 postpartum women, also found similar results[13]. The white skin color predominated (71%), followed by others (25.4%), such as mulatto (24.7%) and yellow (0.7%) (data not included in the table). These results are similar to those of other Brazilian studies in the same context[9, 16].

The postpartum women's distribution according to obstetric antecedents appointed practically the same number of multiparous and nulliparous women. Some studies observed higher perineal trauma rates in primiparous women when compared to women with previous birth experiences[17-18]. A Canadian research showed greater perineal pain probability among primiparous than multiparous women on the first and

seventh day and in the sixth week after delivery (RR=0.9; 0.7; 0.3; respectively). The pain score among them was also higher, with a statistically significant difference (p=0.05)[11].

As for the delivery type, approximately twice as many normal than forceps deliveries were observed (67.3% versus 32.7%). Women submitted to forceps delivery mentioned perineal pain more frequently (41.1%), but this difference was not statistically significant (p=0,138). A research that compared instrumental vaginal delivery with spontaneous vaginal delivery identified that women after instrumental delivery mentioned perineal pain more frequently (77% among primiparous and 52% among multiparous women)[4]. These data indicate that forceps use can entail greater perineal pain for pospartum women.

Regarding perineal trauma, most of the postpartum women (80.5%) displayed some kind of injury. Episiotomy was done in 75.4%, followed by 24.6% of spontaneous lacerations (16% first-degree and 8.2% second-degree). Previous research at the HU-USP showed the same results(13,19), with 75% and 76.3% of episiotomies, 19% and 13.1% of lacerations, 6% and 10.6% of intact perineum, respectively.

On the other hand, in a study carried out at the in-hospital Birth Center of the General Hospital in Itapecerica da Serra, using a probabilistic sample of 830 patient files of women after normal delivery attended by nurse-midwives, the episiotomy rate corresponded to 26.5% and the perineal laceration rate to 73.5%[20]. Another research, accomplished at the University of New Mexico, involving 444 women after normal delivery attended by nurse-midwives, observed 20% of intact perineum cases, 61.3% of first-degree and 18.7% of second-degree lacerations[21].

The World Health Organization[5] defends judicious practice and individual assessment to perform an episiotomy, indicating that first and second-degree ruptures result in lower morbidity levels for women. A systematic review by the Cochrane Library, which compared restrictive and routine episiotomy use, concluded that restricting the procedure is associated with decreased risk of perineal trauma (OR=0.88; 95% CI=0.84-0.92), decreased need for suture (OR=0.74; 95% CI=0.71-0.77) and less complications for healing (OR=0.69; 95% CI=0.56-0.85). No statistically significant difference was found regarding severe perineal laceration, dyspareunia, urinary incontinence and intense pain scores[3].

One of the justifications for the high episiotomy rates observed in this study is related to the fact that the hospital is a teaching hospital, where professionals perform this procedure for learning purposes. Another factor associated with the routine use of this intervention was the lithotomy position adopted at the institution, in which the mother's back remains horizontal, with the thighs bended, abducted and supported by leg rests, responsible for increased perineal tension when the fetus moves through the birth canal.

According to a systematic review by the Cochrane Library, which compared different positions during the expulsive period, the vertical or lateral position, in comparison with the supine or lithotomy position, is associated with a shorter duration of the expulsive period (mean 4.28 min; 95% CI=2.93 -5.63 min), lower episiotomy rates (RR=0.83; 95% CI=0.75 -0.92), increased second-degree lacerations (RR=1.23; 95% CI=1.09 -1.39), less severe pain reports during the second delivery period (RR=0.73; 95% CI=0.60 -0.90), low frequency of altered fetal heartbeats (RR=0.31; 95% CI=0.08 -0.98) and increase in estimated blood loss above 500 ml (RR 1.63; 95% CI=1.29 -2.05)(22).

In this research, out of 303 postpartum women, only 56 (18.5%) mentioned perineal pain. According to 53.6% of them, the painful sensation predominantly occurred during the first 24 h after birth, with a mean 27.7±19.6 h. A longitudinal study carried out at the same site revealed that 32.9% of women mentioned perineal pain during the first 24 h postpartum, 26.3% between 56 and 60 h and 28.1% on the tenth day postpartum. During the first ten days, pain persisted as the main pain complaint, with a higher mean intensity between 20 and 24 h postpartum[13].

Scientific literature appoints that perineal pain can appear during the first hours after birth and persist for some months. Some studies found 9.8% of women mentioning perineal pain during the first hour following delivery[2], 92% during the first 24 h postpartum, 7% at six weeks[11] and 48% two months after birth[4]. A study by the Health Science Center at the University of New Mexico identified perineal pain upon hospital discharge (98%), after six weeks (61%) and three months after vaginal delivery, with 79%[23].

A comparison between the present research results and the abovementioned studies showed a smaller proportion of women mentioned perineal pain after birth. However, pain was related with the presence of episiotomy (p<0.001), in line with data from another research[4].

Perineal pain intensity was predominantly moderate, 4 to 6 on the numerical scale, for 51.8% of postpartum women, with a mean score of 4.8. Data similar to other studies in the same context showed a mean score of 4.2; 5.0 and 5.5 on the numerical pain scale, respectively[2,13,15].

Frequent episiothomy repair using the intermittent suture technique and plain zero catgut can be another factor contributing to perineal pain. According to

literature, the type of material and suture technique used for perineal repair can determine perineal pain and dyspareunia[24]. A study that compared two types of perineal suture -conventional and experimental technique, using continuous stitches on the mucous membranes, muscle and intradermal plane -appointed advantages when using polyglactin (Vicryl®) in comparison with catgut, showing the former's faster absorption, lesser discomfort and local inflammation[2]. In line with this information, a systematic review showed that women whose perineum was sutured with polyglactin revealed less pain occurrence during the first three days after birth (OR=0.62), less need for analgesics (OR=0.63) and less suture leakage (OR=0.45) in comparison with catgut[25].

Despite the perineal pain 56 women reported, it was observed that little more than half (59.3%) of them received pharmacological treatment, particularly analgesics or oral antiinflammatory agents and topical anesthetics. A recent descriptive research at a private maternity in São Paulo City appointed that almost all of the 130 (98.5%) postpartum women who participated in the study received medication for perineal pain relief; 91.5% of them were medicated with nonsteroidal antiinflammatory agents, 88.5% with oral analgesics, 54.6% used topical anesthetics and 16.1% opioids[26].

According to literature, pharmacological treatment with oral analgesics requires care that needs to be taken into account. Paracetamol (acetaminophen) is the preferred oral analgesic for mild perineal pain, due to its useful analgesic properties and practically no side effects. When paracetamol is not effective, nonsteroidal antiinflammatory agents can be the most appropriate, as they hardly have any collateral effects and its excretion in breast milk is very limited[24]. A systematic review to assess the analgesic efficacy of one single dipyrone dose against moderate to severe postoperative pain showed similar effectiveness of dipyrone and ibuprophen for pain relief, with nausea, gastric discomfort and sleepiness as the main collateral effects[27].

Regarding topical medication, a systematic review by the Cochrane Library concluded that there were no clear benefits for the reduction of perineal pain when using topical anesthetics, suggesting further research with a view to their use in clinical practice[28].

Non-pharmacological resources for pain relief at the institution included topical application of ice and heat. The analgesic effects of physical methods (warm and cold) include muscle relaxation and activation of the pain suppression system through the stimulation of the sensitive-discriminative system that inhibits the conduction of the nociceptive stimulus[29].

A literature review that analyzed randomized and quasi-randomized clinical trials on the efficacy and acceptability of cold treatment to relieve perineal trauma effects revealed difficulties for analysis purposes, as the studies showed limited data and investigated different outcomes in distinct periods, using several cooling methods. The authors suggested that cooling can be used to reduce inflammatory reactions and minimize the perineal pain levels the women reported, but that further scientific research is needed to prove its efficacy for pain relief[30].

A systematic review that assessed the efficacy and local effects of cryotherapy for perineal pain relief describes that ice packs relieve pain between 24 and 72 h after birth when compared with the absence of treatment (RR 0.61; CI 0.41-0.91). The study also suggests, however, that further research is needed to support treatment effectiveness[31]. Regarding the application of warm compresses or the use of warm sitz baths, this conducts is still based on clinical observations only, without any scientific support to prove its efficacy[24].

Despite the frequent application of non-pharmacological methods for perineal pain relief, a gap is observed in literature in terms of high-quality randomized and controlled clinical trials to support the indication of ideal treatment for this purpose. The large range of treatments used for perineal pain relief reflects the inability of one single method to effectively solve the problem. Avoiding routine episiotomy use and offering women the possibility of giving birth in a non-lithotomy position can help to preserve perineal integrity and, hence, decrease pain complaints after vaginal delivery.

CONCLUSION

Among the 303 women who had a vaginal birth, puerperal perineal pain prevalence amounted to 18.5%, and its referred spontaneous intensity was predominantly moderate. Postpartum women who underwent episiotomy showed significantly higher pain percentages in the region when compared with the group without pain. Pharmacological methods for perineal pain relief were used in 56 postpartum women who mentioned pain during hospitalization, and 23.2% of them also received non-pharmacological treatment.

At the place of study, some obstetric practices are still adopted during delivery, despite little evidence to support their use, such as: forceps delivery, episiotomy, catgut suture and lithotomy position in the expulsive period.

Although most of the postpartum women were treated, predominantly moderate perineal pain was observed after vaginal birth, associated with the presence of episiotomy. Pharmacological and non-pharmacological methods were used to relieve this discomfort, particularly the use of topic

heat, despite the lack of scientific evidence to support its use. Pain control is more effective when it includes multiple interventions that can act on the different pain components. Non-pharmacological therapies should be offered to minimize the pain, considering non-interference in the breastfeeding process.

As nurses are the professionals who spend most of the time near these women, it is fundamental that they develop competencies and skills for pain detection and treatment during the puerperal period, thus assuring nursing care quality and women's satisfaction with motherhood.

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