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Incidence and Factors Associated with Postpartum Perineal Pain in Primipara

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ABSTRACT

Objectives: To determine the incidence and factors associated with postpartum perineal pain after vaginal delivery in primiparous women.

Study design: Prospective descriptive study.

Subjects: Primipara with episiotomy following vaginal delivery at Bangkok Metropolitan Administration Medical College and Vajira Hospital during August 2008 to September 2008.

Methods: Two hundred and ninety nine primiparous women were recruited for this study. General data of the included subjects were collected from medical records and the pain score was assessed with an 11-point verbal analogue scale within 48 hours after delivery.

Results: The incidence of significant postpartum perineal pain (pain score more than 3) was 41.1% on the first day of postpartum. And only 8.7% associated with perineal pain at the same level on day two. Factors associated with this pain were operative vaginal delivery and duration of second stage (> 30 minutes). But no statistical difference between maternal BMI, neonatal birth weight, degree of perineal trauma, suturing technique or suture material on perineal pain score.

Conclusion: Postpartum perineal pain is common among primiparous women especially in the initial day. Perineal pain was more severe with operative vaginal delivery and duration of second stage more than 30 minutes.

Keywords: postpartum period, perineal pain

Introduction

Postpartum perineal pain is one of the most common problem in the postpartum period especially for primipara.[1] Major cause of pain is perineal trauma after delivery from episiotomy[2] or from spontaneous perineal tear that may varies in degrees.[1,3] On the other hand, operative vaginal delivery, suture materials and technique, neonatal birth weight, and duration of second stage could increase perineal pain after delivery.[3-7] Perineal pain may affect postpartum mother from only few days to many weeks postpartum.[1,8,9] However the most affected period was during the first 48 hours after delivery.[10] This pain can be potentially devastating for mothers and may affect bonding with

the newborn child and relationships with their partner from dyspareunia.

The objective of this study was to determine the incidence, severity and factors associated with perineal pain after vaginal delivery in primipara.

Materials and Methods

This study was approved by ethics committee for researches involving human subjects Bangkok Metropolitan Administation (BMA), based on the declaration of Helsinki on August 2008 and was carried out over a 2-month consecutive period between August 2008 and September 2008. The sample size was calculated after pilot study was performed, and at least 289 patients must be completed. The study population consisted of all primiparous women who had episiotomy for vaginal delivery at BMA Medical College and Vajira Hospital. Inclusion criteria were those with single fetus in cephalic presenting after complete 37 weeks gestation and were admitted in hospital for at least 48 hours after delivery. Exclusion criterias were those who received epidural analgesic during labor and delivery and those with immediate postpartum hemorrhage or had vaginal hematoma after delivery. The basic personal data such as weight, height, gestational age and intrapartum data such as duration of second stage, degree of perineal trauma, suture material and technique, neonatal birth weight were collected from medical records.

The assessment of perineal pain was made in the first and second day postpartum by an 11-point verbal analogue scale. These scale consists score from 0 to 10. Zero-score is representing no pain and 10-score refers to most severe pain.[11] The first day postpartum refers to 8-24 hours after delivery and the second day means 25-48 hours after delivery. Evaluation of pain was not made in the first 8 hours postpartum to avoid anaesthetic effect of xylocaine that may last about 1.5 – 3 hours. Pain was noted as "significant pain" when score was more than 3.

All episiotomies in this study were mediolateral type and all patients were received local anaesthesia prior to performed episiotomy. Perineal trauma was classified according to international classification into first, second, third and fourth-degree tear.[12,13] All degree of perineal trauma was sutured. Suture technique and material used depended on individual clinicians. In our institute, two types of vaginal repair were employed; continuous locking suturing technique and interrupted suture. The continuous locking suturing technique involves placing the first stitch above the apex of vaginal trauma then reapproximate all layer with loose, continuous locking technique. The skin sutures are placed loosely and deeply in the subcutaneous tissue, reversing back and finished with terminal knot placed in vagina beyond the hymen. As a result, only 1 pack of chromic catgut 3-0 is used. The interrupted suture involves placing 3 layers of sutures: an interrupted stitch to close the vaginal epithelium from apex of wound to fourchette; interrupted sutures to reapproximate the deep and superficial muscles; and interrupted transcuteneous technique to close the skin. As a result, 1 pack of chromic catgut 3-0 for repair vagina and muscle and 1 pack of silk 2-0 for skin closure.

Data were analysed using SPSS statistical program version 11.5. Chi-square test was used to test for differences between groups for univariable analysis and multiple logistic regression was used for multivariable analysis.

Results

Two hundreds and ninety nine patients who meet the inclusion criteria were enrolled in this study. The enrolled patients had mean age of 23.5 years, mean body mass index (BMI) of 26.7 kg/m^2, and mean gestational age ± SD at delivery of 38^{+5} weeks ± 8 days. Of these 299 patients, 254(84.9%) had normal delivery while 38(12.7%) were delivered by vacuum extraction and 7(2.4%) by forceps extraction. Indications for all operative delivery include fetal distress and prolonged second stage. The mean duration of second stage of labor ± SD was 29.7 ± 25.4 minutes. The mean neonatal birth weight ± SD was 2976 ± 426.2 grams. All women had episiotomy during vaginal delivery, 22 women(7.4%) had extension of perineal tear after episiotomies. Two women had first-degree tears, 288 women had second-degree tears and 9 women had third-degree tears. No one had fourth-degree tear in this study. Type of perineal repair were: interrupted suture with silk for skin closure in

102 women and continuous locking suture with chromic catgut for transcuteneous skin closure in 196 women. There was one woman who had interrupted suture with chromic catgut along vaginal repair and had skin closure with interrupted stitches of chromic catgut too.

The median pain score was 3.2 on postpartum day 1 and 2.1 for day 2. On day 1, 123/299 women (41.1%) had significant perineal pain with score more than 3. Later on day 2, the number of women with significant perineal pain decreased to 8.7%. All women who complaint of perineal pain would receive paracetamol 1000 mg orally, which could be repeated every 6 hours apart. During day 1, there were 3 women who needed additional analgesic drug other than paracetamol to relief perineal pain but nobody requested additional analgesic drug on day 2.

Concerning about factors that might associated with postpartum perineal pain, we found that those who underwent operative obstetrics either vacuum extraction or forceps extraction had significantly more chance of significant perineal pain (pain score > 3) on day 1 and day 2 both in univariable and multivariable analysis. Pregnant women who underwent operative obstetrics procedure had 3.3 times (95% CI 1.6 - 6.8) risk of significant perineal pain as compared to those who had normal delivery. Longer second stage of labor was significantly associated with significant perineal pain on day 1, but not day 2 in univariable analysis, and had only borderline significant on day 1 in multivariable analysis. Larger fetus and higher degree of perineal tear tended to be associated with perineal pain on only day1 but not reach statistical significance, while age, BMI, suture techniques and suture materials did not have any association with severity of postpartum perineal pain on both day 1 and day 2. Extended tear beyond episiotomy wound did not have significant association with perineal pain on day 1 but tended to have some clinical different but not statistical significant different on day 2. (Table 1 and Table 2)

Table 1. Univariable analysis for factors associated with significant perineal pain as day 1 and day 2 postpartum.

	Significant perineal pain (pain score > 3)			
	Day 1		Day 2	
Characteristics	**n(%)**	**P value**	**n(%)**	**P value**
Duration of second stage				
≤ 30 minutes (n = 193)	69(35.8)	0.011*	14(7.3)	0.233
> 30 minutes (n = 106)	54(50.9)		12(11.3)	
Mode of delivery				
Normal labor (n = 254)	92(36.2)	< 0.001*	17(6.7)	0.004*
Vacuum extraction (n = 38)	25(65.8)		5(13.2)	
Forceps extraction (n = 7)	7(85.7)		4(18.2)	
Degree of perineal trauma				
First or second-degree (n = 290)	117(40.3)	0.114	25(8.6)	0.794
Third-degree (n = 9)	6(66.7)		1(11.1)	
Suture technique				
Interrupted suture (n = 103)	46(44.7)	0.369	5(4.9)	0.087
Continuous locking suture(n = 196)	77(39.3)		21(10.7)	
Suture material				
Silk (n = 102)	46(45.1)	0.317	5(4.9)	0.094
Chromic catgut (n = 197)	77(39.1)		21(10.7)	

* statisticall significant

Table 2. Multivariable analysis for factors associated with significant perineal pain in day 1 and day 2 postpartum.

	Odd ratio	95 % CI	P value
Day 1			
Neonatal birth weight (≤ 3000/ > 3000 gm)	1.3	0.793-2.112	0.303
Duration of second stage (≤ 30/ > 30 min.)	1.5	0.878-2.439	0.145
Mode of delivery (NL/Operative)	3.3	1.603-6.782	0.001*
Episiotomy wound (without tear/with tear)	0.5	0.150-1.930	0.342
Degree of perineal trauma (1^{st} and 2^{nd} VS. 3^{rd})	2.5	0.367-16.975	0.350
Day 2			
Neonatal birth weight (≤ 3000/ > 3000 gm)	0.8	0.346-1.929	0.644
Duration of second stage (≤ 30/ > 30 min.)	1.3	0.550-3.187	0.531
Mode of delivery (NL/Operative)	3.3	1.272-8.782	0.014*
Episiotomy wound (without tear/with tear)	3.3	0.794-13.304	0.101
Degree of perineal trauma (1^{st} and 2^{nd} VS. 3^{rd})	0.2	0.019-2.971	0.264

*statistically significant

Discussion

Millions of women throughout the world experience pain as a result of perineal trauma sustained during delivery, and yet there is only few studies about this problem in Thailand. In this study, we excluded multiparous woman because of evidence that perineum sensibility could have been changed from previous pregnancies and deliveries.[13]

This prospective descriptive study followed 299 women for 48 hours postpartum. Our results indicated that significant postpartum perineal pain was common in first 24 hours, which was in accordance with previous studies.[1,9,14]

Regarding factors associated with postpartum perineal pain, our results confirmed the finding of Macarthur[1] that operative vaginal delivery and longer duration of second stage were associated with greater perineal pain on the first day postpartum. Other factors such as larger baby and severe degree of perineal tear had clinical significant associated with perineal pain but did not reach statistical significance. Macarthur et al[1] also concluded from their study that fetal birth weight was clinically significant, but not statistically significant, associated with postpartum perineal pain, while Andrews et al[9] concluded in their prospective study that more severe degree of perineal trauma(third and fourth-degree) produce significantly higher pain score on the first day postpartum.

Previous studies of perineal pain had focused on suturing technique and material used in perineal repair. Kettle et al[15] in their randomized study published in 2002 concluded that the continuous subcuticular technique of perineal repair was associated with less pain in the immediate postpartum period when compared with the interrupted suture technique. Cochrane Database systematic reviews had also demonstrated that continuous sutures for perineal repair and the use of absorbable synthetic sutures reduce the postpartum perineal pain in the first 10 days.[6,7] The difference in pain between the suturing methods was believed to be due to increasing suture tension caused by edema. In continuous technique, tension was transferred through the whole length of the single suture,[16] hence there was less tension, and less tissue edema leading to less pain. Another important factor, which could contribute to reduction in pain in continuous technique is that skin sutures are placed deeply in the subcutaneous tissue, without suturing through skin surface, thus avoiding nerve endings in the skin surface.[5] In our study, perineal repairs

were performed by obstetricians and midwife nurses. Suturing technique were continuous locking technique that performed by obstetricians and interrupted technique if performed by midwife nurses. Result of this study show no difference in significant perineal pain between these 2 groups.

This should be explained that continous lock technique that used in our institute resulted in the same degree of perineal pain as compared to interrupted technique. Continuous nonlock technique might produce less pain as be confirmed in many studies. Randomized controlled trial comparing between continuous lock and continuous nonlock for repairing episiotomy wound would help to clarify this issue.

Conclusion

Our study indicated that perineal pain is common in the initial day postpartum in primiparous women. Operative vaginal delivery and duration of second stage longer than 30 minutes were associated with greater "significant" pain scores (pain score > 3). These results might beneficial to clinicians in terms of providing additional therapy for women who have these risk factors to decrease their perineal pain.

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อุบัติการณ์และปัจจัยที่มีผลต่อการปวดบริเวณฝีเย็บหลังคลอดบุตรครรภ์แรก

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วัตถุประสงค์ *: เพื่อหาอุบัติการณ์และปัจจัยที่มีผลต่อการเกิดอาการปวดบริเวณฝีเย็บหลังคลอดบุตรครรภ์แรก*

รูปแบบการวิจัย *: การวิจัยเชิงพรรณนาแบบติดตามไปข้างหน้า*

กลุ่มตัวอย่าง *: สตรีตั้งครรภ์แรกที่มาคลอดบุตรครรภ์ที่วิทยาลัยแพทยศาสตร์กรุงเทพมหานครและวชิรพยาบาล สำนักการแพทย์ กรุงเทพมหานคร โดยการคลอดทางช่องคลอดและได้รับการตัดฝีเย็บในช่วงเดือนสิงหาคม – กันยายน พ.ศ. 2551 จำนวนทั้งสิ้น 299 ราย*

วิธีการ *: เก็บข้อมูลจากสตรีตั้งครรภ์แรกที่มาคลอดบุตรที่วิทยาลัยแพทยศาสตร์กรุงเทพมหานครและวชิรพยาบาล สำนักการแพทย์ กรุงเทพมหานคร จำนวน 299 คน โดยเก็บข้อมูลโดยการสอบถามและเก็บข้อมูลจากเวชระเบียนผู้ป่วยใน ในช่วง 48 ชั่วโมงหลังคลอด โดยวิธีถามปากเปล่าเทียบเป็นคะแนนการปวดตั้งแต่ 0 – 10 คะแนน*

ผลการศึกษา *: อุบัติการณ์ของการเกิดอาการปวดบริเวณฝีเย็บช่วงหลังคลอดบุตร ที่มีระดับของอาการปวดมากกว่าระดับเฉลี่ยการปวดทั่วไป (pain score > 3) คือ ร้อยละ 41.1 ในช่วงวันแรกหลังคลอด และลดลงเป็น ร้อยละ 8.7 ในช่วงวันที่สองหลังคลอดบุตร ปัจจัยที่มีผลต่อการเกิดอาการปวดที่มากขึ้นคือ การคลอดโดยใช้สูติศาสตร์หัตถการ, ระยะเวลาการคลอดช่วงที่ 2 (มากกว่า 30 นาที) โดยพบอีกว่า ดัชนีมวลกายของผู้ป่วย, น้ำหนักแรกเกิดทารก, การบาดเจ็บต่อฝีเย็บในช่วงการคลอด และลักษณะการเย็บแผล ไม่สัมพันธ์กับการเพิ่มอาการปวดบริเวณฝีเย็บช่วงหลังคลอดอย่างมีนัยสำคัญทางสถิติ*

สรุป *: อาการปวดบริเวณฝีเย็บหลังการคลอดบุตรเป็นภาวะที่พบได้บ่อยในสตรีครรภ์แรกโดยเฉพาะช่วง 1-2 วันแรกหลังคลอดบุตร ปัจจัยที่ก่อให้เกิดอาการปวดมากขึ้นคือ การใช้สูติศาสตร์หัตถการและ ระยะเวลาการคลอดช่วงที่ 2 ที่มากกว่า 30 นาที*