Continuous Versus Interrupted Sutures for Episiotomy Wound Repair

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ABSTRACT

Objective — *To compare continuous suturing technique with interrupted method for the procedure of episiotomy.*

Study design — *A comparative study.*

Place & Duration of study — *Gynaecology Unit 2, Bhawal Victoria Hospital Bahawalpur, from January 2008 to December 2009.*

Methodology — *Patients were randomized into two groups; One group (C) was repaired with continuous, non-locking sutures involving the vagina, perineum and subcutaneous tissues for skin. The other group (I) with the same match had continuous locking sutures of vagina, interrupted sutures in the perineal muscles and interrupted transcutaneous sutures for skin. The threads used for stitching were identical in both the groups. The participants were asked about pain during defecation, urination, in sitting position and during movement, the use of analgesics on the 2nd , 10th day and 3 months postpartum.*

Results — *A total of 547 women underwent vaginal deliveries with episiotomies. Less repair time (one minute - p=0.017) was noted in continuous technique group and suture material consumed was also less (RR 3.2, 95% CI: 2.6-4.0). The comparison of pain on the 2nd, 10th day and 3 months after delivery showed no significant difference between two techniques (RR 1.08, 95% CI:0.74-1.57, RR, 0.96, 95% CI: 0.59-1.55 and RR ,0.68, 95% CI:0.19-2.46 respectively).*

Conclusions — *There was no difference between the severity of pain in short and long term period in both the techniques. Repair with continuous suturing was quicker and less suture material was used in comparison with interrupted suturing.*

Key words — *Episiotomy, Continuous suturing, Interrupted suturing, Postoperative pain.*

INTRODUCTION:

In most of the deliveries damage or trauma to the perineum is likely to occur to a greater or lesser degree. It is because of inadequate protection to the area at the moment of baby's head delivery or if extraction of shoulders is not appropriate. Episiotomy is reserved for cases where perineum is likely to torn, complicated childbirths, good size baby and assisted deliveries.[1]

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Although the current tendency is to reduce the incidence of episiotomies, despite this repair of the perineum continues to be an aspect of childbirth that affects a great number of women and enhance maternal morbidity.[2,3] The majority of females experience pain of short duration after episiotomy repair and some continue to suffer from this problems as sexual discomfort.[4]

In addition to the extent of trauma, the surgical skills, the type of material used and the suturing technique have an important effect on the degree of maternal morbidity.[5,6] The best technique for this repair should be quick, with less use of suture material and minimal pain. This study was conducted to find out an optimal technique for repair of episiotomy wound.

METHODOLOGY:

This study was conducted in the Gynaecology and Obstetrics unit 2, Bahawal Victoria Hospital, Bahawalpur during 2008 and 2009. A total of 550 women were included. Of this 275 were assigned to each group. Three women did not give consent to enter into the study, so final sample size remained 547. The inclusion criteria were vaginal birth without instrumentation, at least 37 weeks of gestation, a viable newborn without serious congenital malformations and parity less than 2. The exclusion criteria were patients suffering from diabetes mellitus, chronic illness like liver, heart, renal diseases etc, hemoglobin < 8g/dl and those on steroid therapy.

One group of researchers stitched episiotomies and those who collected the data about pain were unaware of the technique used for that particular patient. Patients were also not aware of technique used. The perineum was repaired by one of the following techniques; Continuous suture technique with continuous non-locking sutures in the vagina, perineum and subcutaneous tissues for skin and Interrupted suture technique with continuous locking sutures in vagina, interrupted sutures in the perineal muscles and interrupted transcutaneous sutures for skin. Immediately after repair of the perineum, the number of suture strands used were counted and the time taken for the repair was recorded. Two days post partum, before discharge, the participants were asked about pain. Ten days after delivery, same questions were asked on phone and then contact was made at three months for inquiry about pain.

The continuous data are expressed as an average with standard deviation. The qualitative data as an absolute and relative frequency presented as relative risk (RR) with a 95% confidence interval (CI). The visual analogue scale was used to define the severity of pain; None: 0-2, Slight: 3-4, Moderate: 5-7, Severe: 8-10. The results were analyzed using the student "t" test or Chi-square test where applicable.

RESULTS:

A total of 547 women underwent episiotomy. There was no difference between the two groups with respect to the demographic characteristics of the women. Less suture material was required for the repair of the perineum in the continuous technique compared with the interrupted technique (table I). In addition the time used in the repair with the continuous technique (9.6+3.9 minutes) was less than the interrupted technique (10.6+4.9 minutes; p=0.017).

The comparison of pain (no/yes) on the second and tenth postpartum days, and at 3 months was statistically insignificant between the groups (table II). No differences existed in the pain between the second and tenth days postpartum with respect to rest, while moving or sitting, or during urination or defecation (Table III).

On the second and tenth days postpartum, no association was found between the suture technique and the use of analgesics (RR, 0.97, 95 % CI: 0.66-1.42 and RR, 0.66, 95 % CI: 0.30-1.30, respectively). most women did not use analgesics by the second day postpartum (RR0.60, 95 % CI:0.41:0.88) though 45 % of the women (n=247) did complaint of some pain. The average number of days that they had taken before resuming intercourse was 48 days for the continuous suture group and 44 days for the interrupted suture group (49.0+15.7 versus 45.8 + 15.1 days; p= 0.040).

With the continuous suture technique, it was necessary to remove suture material in 31 women (11 %) compared with 17 women with the interrupted suture (13 %; RR, 0.84, 95 % CI: 0.47-1.50). In two women in the interrupted suture group, it was necessary to re-suture the perineum. One of the women required resuturing because of complete dehiscence.

DISCUSSION:

In this study, the differences between the continuous suturing group and the interrupted suturing group were a reduction in repair time of one minute and use of less suture material. Both short and long-term complaints of pain were similar between the groups. Those in the interrupted suture group resumed sexual intercourse earlier.

Instrumental deliveries were not included in the study because apart from addition of other factors

Table I: Sutures Used According to the Technique Employed

Technique of Suturing	One suture n (%)	Two sutures n (%)	Three or more n (%)	One suture />1 RR(95% CI)
Continuous	259 (94)	13 (4)	2 (<1)	3.2(2.6-4.0)
Interrupted	80 (29)	144 (52)	49 (18)	

Table II: : Relation Between Suture Technique and Pain at the Time of Interview, Pain now, 2nd and 10th Day and 3 Months

Technique of Suturing	No pain (%)	Pain (yes) Slight (%)	Pain (yes) Moderate/Severe (%)	Pain no/yes, RR (95%CI)
Second day				1.08 (0.74-1.57)
C (n=274)	140(50)	98 (36)	36 (13)	
I (n=273)	133(48)	110 (40)	30 (10)	
Tenth day				0.96 (0.59-1.55)
C (n=267) *	215(80)	46 (17)	6 (2)	
I (n=268) *	217(81)	42 (15)	9 (3)	
3 months				0.68 (0.19-2.46)
C (n=266) *	259(97)	7 (2)	0	
I (n=256) *	251(98)	5 (1)	0	

C, technique of continuous suturing, I, technique of interrupted suturing

* 12 patients lost to follow up on tenth day and 25 patients lost to follow up at 3months.

responsible for more pain, the episiotomies tend to be cut larger and earlier. Premature child-births were not included because the episiotomies in such cases tend to be cut before the perineum has thinned by pressure of the head, which usually generates greater hemorrhage. Also, we considered that our study would interfere with the grieving process in the event of deliveries involving a fetal demise, live nonviable births, or those with serious malformations.

In a survey, by means of questionnaires given to midwives of state hospitals in Madrid, which was carried out by the same authors before beginning the project, an almost standard technique for the repair of the perineum that consisted of continuous suture crossing the vagina, interrupted suture in the underlying muscles, and transcutaneous suture in the skin, however, there was a great preference for one technique. There are only few clinical trials that compare the effects of different suture techniques on the magnitude of maternal morbidity associated with the repair of perineum.[7-10]

Almeida SF, Rieco MI compared the continuous and interrupted techniques and found more pain in interrupted suture technique.[11] Mota R, Costa F published their experience in the use of the two suture techniques; use of adhesive glue and subcuticular suture in repairing the skin and suggested that adhesive glue was associated with a lower degree of pain in the perineum compared with other more traditional methods.[12]

Kettle et al carried out a trial comparing the two techniques of episiotomy repair (continuous and discontinuous) using two suture materials (quick absorption and standard) and found that less pain was experienced with the continuous suture technique.[13] In a study that included health personnel who differed in their ability to repair episiotomies, it was found that the continuous suture technique was associated with less pain in the short term compared with discontinuous technique. In this comparative study, in the two groups of women, the ability of the health professionals and the type of materials used were the same. The only difference was the suture technique. Less repair time and less material used were the only significant differences between the two groups. The pain and the dyspareunia, both at short and long term, were similar according to the women.[14] Although our results contradict the recent meta-analysis of the Cochrane database.[3] Our conclusion goes with those of a published study that compared continuous and interrupted skin sutures. The difference between these results and those obtained in the meta-analysis is probably attributable to the homogeneity of the health personnel in terms of their skill in performing the repair and the method of concealment used in the repair of the perineum, as well as the person who conducted the interview, and even the patient herself.

The use of analgesics in the last 24 hours seemed to be a good question for evaluating the pain, but the discovery that the women who had received epidural anaesthesia during dilation had a greater likelihood of requiring oral analgesics on the second and tenth days after childbirth, raising the question that the women selected were less tolerant of pain

Table III: : Relation Between Suture Technique and Pain in Different Circumstances, on 2nd and 10th Day and 3 Months

Technique of Suturing	No pain (%)	Pain yes Slight (%)	Pain yes Moderate/Severe (%)	Pain no/yes, RR (95%CI)
Second day				
Pain in response				0.91 (0.63-1.33)
C (n = 274)	154 (56)	90 (32)	30 (10)	
I (n = 273)	159 (58)	90 (32)	23 (8)	
Pain in movement				1.26 (0.85-1.88)
C (n = 274)	99 (36)	106 (38)	69 (25)	
I (n = 273)	84 (30)	125 (45)	64 (23)	
Pain when sitting				0.75 (0.50-1.12)
C (n = 274)	75 (27)	107 (39)	91 (23)	
I (n = 273)	91 (33)	93 (33)	89 (32)	
Pain when urinating				0.72 (0.49-1.03)
C (n = 274)	117 (42)	95 (34)	62 (22)	
I (n = 273)	137 (51)	87 (31)	47 (17)	
Pain when defecating				0.59 (0.33-1.06)
C (n = 274)	120 (57)	82 (25)	72 (17)	
I (n = 273)	137 (69)	70 (16)	66 (13)	
Tenth day				
Pain in response				0.78 (0.47-1.30)
C (n = 267)	219 (81)	43 (16)	5 (1)	
I (n = 268)	228 (85)	35 (12)	5 (1)	
Pain in movement				0.87 (0.58-1.30)
C (n = 267)	175 (65)	72 (26)	20 (7)	
I (n = 268)	184 (68)	68 (25)	16 (5)	
Pain when sitting				0.90 (0.61-1.32)
C (n = 267)	157 (58)	79 (29_)	31 (11)	
I (n = 268)	165 (61)	80 (29)	23 (8)	
Pain when urinating				1.03 (0.68-1.57)
C (n = 267)	191 (71)	65 (24)	11 (4)	
I (n = 268)	189 (70)	53 (19)	26 (9)	
Pain when defecating				0.89 (0.59-1.34)
C (n = 267)	182 (68)	63 (23)	22 (8)	
I (n = 268)	189 (70)	53 (19)	26 (9)	

C: Technique of continuous suturing, I: Technique of interrupted suturing

or less reluctant to analgesics. Above all, in the group of women who did not use oral analgesics, there was a high percentage who referred to pain. It is probable that in the acceptance and perception of pain, there are other factors that are difficult to define and quantify, yet exert an influence on

analgesic use.[15]

CONCLUSIONS:

Continuous technique was quick to perform and consumed less suture material without the risk of increased complications. No statistically significant difference was noted regarding pain in the short or long term.

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