

Continuous Versus Interrupted Sutures for Episiotomy Wound and Perineal Tear Repair

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Abstract: This study was conducted to compare continuous suturing technique with interrupted method for the procedure of Episiotomy and second degree perineal tear following vaginal delivery. It was a comparative prospective study conducted in department of Obstetrics & Gynecology of M.K.C.G. Medical college, Berhampur , Odisha, India, from November 2019 to November 2020. Patients were randomized into two groups; One group (A) was repaired with continuous, non-locking sutures involving the vaginal mucosa, perineal muscles and subcutaneous tissues for skin following delivery. The other group (B) with the same match had continuous locking sutures of vaginal mucosa, interrupted sutures in the perineal muscles and interrupted transcutaneous sutures for skin. The sutures used were absorbable (chromic catgut) and identical in both the groups. The participants were asked about pain in sitting position and during movement, the use of analgesics on the 2nd, 10th day and 6weeks postpartum. A total of 700 women underwent vaginal deliveries with episiotomies and/or with second degree perineal tear. Less repair time (five minute - $p=0.0001$) was noted in continuous technique group and suture material consumed was also less (1 suture RR 3.10, 95% CI: 2.63-3.65). The comparison of pain on the 2nd, 10th day showed that continuous suture techniques compared with interrupted sutures for perineal closure are associated with less pain for up to 10 days postpartum (RR 1.61, 95% CI: 1.39-1.87 for 2nd day and RR-1.23, CI:1.15-1.33 for 10th day). There was no difference between the severity of pain in long term period [6weeks postpartum] [RR-1.0, CI: 0.98-1.03] in both the techniques. Repair with continuous suturing was quicker and less suture material was used in comparison with interrupted suturing. There was less pain in short term period in continuous technique and no difference between the severities of pain in long term period in both the techniques.

Key words: Episiotomy, continuous repair, interrupted repair.

INTRODUCTION

When women give birth the perineum (the area between the vaginal opening and back

passage) sometimes tears or it may be necessary to have an episiotomy (surgical cut) to increase the size of the outlet. Episiotomies and tears that involve the muscle layer (second degree) need to be repaired. Millions of women worldwide per day will experience perineal stitches following vaginal birth. A midwife or doctor will stitch the episiotomy or second degree tear in three layers (vagina, perineal muscle and skin). Traditionally the vagina is stitched using a continuous locking stitch and the perineal muscles and skin are repaired using approximately three or four individual stitches, each needing to be knotted separately to prevent them from dislodging.

Researchers have been suggesting for more than 70 years that the 'continuous non-locking stitching method' is better than 'traditional interrupted methods'.

Episiotomy is reserved for cases where perineum is likely to torn, rigid perineum, complicated childbirths, good size baby and assisted deliveries [1]. Spontaneous tears are defined as first degree (involving the perineal skin only), second degree (involving the perineal muscles and skin), third degree (injury to the anal sphincter complex - 3a = < 50% of the external anal sphincter torn; 3b = > 50% of the external anal sphincter torn; 3c = injury to the external and internal anal sphincter) and fourth degree (injury to the perineum involving the anal sphincter complex and anal epithelium)[2].

The majority of females experience pain of short duration after episiotomy repair and some continue to suffer from these problems as sexual discomfort [2]. 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 [3,4]. 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 and 2nd degree perineal tear wound.

MATERIALS AND METHODS

This study was conducted in the Gynaecology and Obstetrics dept of m.k.c.g. medical college, berhampur, odisha, india from November 2019 to November 2020. A total of 700 women of vaginal deliveries were included. Of this 350 were assigned to each group. Group 'A' included those with Continuous suture technique with continuous non-locking sutures in the vagina, perineal muscles and subcutaneous tissues for skin. Group 'B' included those with interrupted suture technique with continuous locking sutures in vagina, interrupted sutures in the perineal muscles and interrupted transcutaneous sutures for skin.

The inclusion criteria:

1. Vaginal deliveries,
2. Term gestation,
3. A viable newborn without congenital malformations
4. Parity \leq 2.
5. Assisted breech vaginal delivery

The exclusion criteria

1. Patients suffering from chronic medical disorders like diabetes mellitus, liver diseases, heart diseases, renal diseases.

2. Hemoglobin < 8g/dl.
3. Those on steroid therapy.
4. 3rd degree or more of perineal tear.
5. Parity ≥ 3

This study was double blinded. One group of researchers sutured 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. Immediately after repair of the perineum, the numbers 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 on follow up and then contact was made at 6 weeks 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 and Fishers exact test where applicable.

RESULTS

A total of 700 women underwent episiotomy and/or 2nd degree perineal tear. There was no difference between the two groups with respect to the demographic characteristics of the women. 25 women lost to follow up on 10th post partum day and total of 46 women lost to follow up on 6weeks postpartum. Less suture material was required for the repair of the perineum in the continuous technique compared with the interrupted technique (Table 1) (RR-3.10, CI: 2.63-3.65). In addition the time used in the repair with the continuous technique (<5 minutes) was less than the interrupted technique (>5 minutes) (p=0.0001) (Table 2).

The comparison of pain (no/yes) on the second and tenth postpartum days showed that continuous suturing technique group A experienced less pain than interrupted suturing technique group B [2nd day- RR- 1.61, CI:1.39-1.87], [10th day- RR-1.23, CI: 1.15-1.33].There was no statistically significant difference in long term pain at 6 weeks postpartum.(RR-1.0, CI: 0.98- 1.03) (Table 3)

Technique/ Group	One suture	\geq two sutures	One suture: \geq two suture RR and CI
Group A Continuous	326	24	RR- 03.10

Suturing			CI: 02.63-03.65
Group B Interrupted Suturing	105	245	

Table 1: Sutures Used According to Technique Employed**Table 2: Time Required According to Technique Employed**

Technique Used/ Group	< 5 minutes	> 5 minutes	Two tailed p value
Group A Continuous suturing	309	41	0.0001
Group B Interrupted suturing	59	291	

Table 3: Relationship between Suturing Technique and Pain in Postpartum Days 2, 10 and 6weeks

Technique Used/ Group		No Pain	Slight Pain	Moderate To Severe Pain	No Pain : Pain RR, 95% CI
Second Day	Group A-350	230	80	4 0	RR-1.61 95% CI: 1.39-1.87
	Group B- 350	142	136	7 2	
10th Day	Group A-335	305	29	1	RR-1.23 95% CI: 1.15-1.33
	Group B-340	250	75	1	

				5	
6 Weeks Post Partum	Group A-326	320	6	0	RR-1.00 95% CI: 0.98-1.03
	Group B-330	321	9	0	
25 women lost to follow up on 10 th post partum day and total of 46 women lost to follow up on 6weeks postpartum.					

DISCUSSION

In this study, the differences between the continuous suturing group and the interrupted suturing group were a reduction in repair time and use of less suture material. Short term pain was less in continuous suturing group and long term complaints of pain were similar between the two groups.

Kettle et al carried out a trial comparing the two technique 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 [5].

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, less suture material used and less short term post partum pain were the significant differences between the two groups. Our results were same as the recent meta-analysis of the Cochrane database [6].

Almeida SF, Rieco MI compared the continuous and interrupted techniques and found more pain in interrupted suture technique [7]. 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 [8].

Thus in conclusion, continuous suturing techniques for perineal closure is associated with less short term pain. However, if the continuous technique is used for all layers (vagina, perineal muscles and skin), the benefit in terms of reducing pain is even greater. The continuous technique is easily performed by the novice or inexperienced operator. In addition, it has economical advantages is that the continuous technique requires one packet of suture material per perineal repair compared to two or more packets for the interrupted method. Therefore, the nonlocking continuous suturing technique is recommended for repair of vagina and perineal muscles with a continuous subcutaneous stitch to close the perineal skin.

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