



Continuous versus interrupted sutures for repair of episiotomy or second-degree perineal tears: A randomised controlled trial

Gynaecology

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ABSTRACT

Aim: To determine the outcome of continuous versus interrupted method of episiotomy stitching.

Study design: Randomized controlled trial.

Setting: Study conducted at Jawaharlal Nehru medical college and AVB Rural hospital.

Duration: From 2nd Dec 2016 to 1st April 2017. Total duration of study was 6 months.

Subjects and methods: This randomized controlled trial was conducted at AVB Rural hospital. over a period of 6 months. A total of 200 patients delivering singleton fetus and having episiotomy were included in this study and were divided into two groups; one with interrupted stitching of episiotomy and another with continuous stitching of episiotomy, involving the vagina, perineum, and subcutaneous tissues.

The other group had continuous, locking sutures of the vagina, interrupted sutures in the perineal muscles, and interrupted transcutaneous sutures. The threads used for stitching were identical in both groups.

Main outcome measures

The participants were questioned regarding the sensation of pain and the use of painkillers on the second and the tenth days, and 3 months postpartum.

Results

When comparing the group with continuous suture to the group with interrupted sutures, the differences included less repair time (1 minute; $P = 0.017$) and less suture material used (relative risk [RR], 3.2, 95% CI: 2.6–4.0). The comparison of pain on the second and tenth days, and 3 months postpartum were not statistically different between the two techniques

Conclusions

Although we did not demonstrate that one technique was better than the other in the incidence of pain in the short or long term, we showed that episiotomy and perineal tear repairs with continuous suturing were quicker and used less suture material without an increase in complication than interrupted suturing.

KEYWORDS:

Episiotomy, suture, pain, techniques

INTRODUCTION

Episiotomy is the incision of the perineum during the last part of second phase of labour or delivery. Long term complications of episiotomy repair are common. A large proportion of women suffer short term perineal pain and up to 20% have long term problems e.g., dyspareunia. Other complications involve the removal of suture material and need for resuturing¹.

The best technique for episiotomy repair would be that which requires less time to perform and less use of materials, and that which produces less pain in short and long term, permitting the resumption of intercourse sooner and with less pain, and requiring less of a need to remove the suture and a low frequency of resuturing².

About 85% of women who have a spontaneous vaginal birth will have some form of perineal trauma, and up to 69% will need to have sutures (McCandlish et al., 1998). Episiotomies are known to provide the following benefits speed up the birth, prevent vaginal tears, protect against incontinence, protect against pelvic floor relaxation and heals easier than tears (Arulkumaran, 2004).

First description of Episiotomy was in 1742. It was said that "it sometimes happens that the head of the child cannot however come forward by reason of the extraordinary constriction of the external orifice of the vagina, wherefore it must be dilated if possible by fingers if this cannot be accomplished, there must be an incision made towards the anus with a pair of crooked probe scissors"³.

In addition to the extent of the trauma, the surgical skill, the type of material used, and the suture technique for perineal repair after childbirth can have an important effect on the magnitude and degree of morbidity experienced by women after repair.

Thus, in the current study, we have attempted to evaluate an optimal technique for repair of episiotomies and perineal tears.

MATERIALS AND METHODS

A randomized trial of patients who delivered in AVBR Hospital, Sawangi (m), Wardha, Maharashtra

A) Inclusion Criteria:

1. Normal vaginal delivery of singleton pregnancy
2. At term (37 wks – 40 wks).
3. Vertex presentation.
4. Live baby.

B) Exclusion criteria:

1. Third and fourth degree perineal tear.
2. Instrumental vaginal delivery.
3. Previous perineal surgery.
4. Anaemia with hemoglobin level < 9 g/dl.
5. Diabetes mellitus.
6. Coagulation abnormalities.
7. Postpartum hemorrhage.
8. Delivery conducted outside the AVBR Hospital
9. Breech delivery.

From 2nd Dec 2016 to 1st April 2017 total of 200 eligible women, who fulfils the inclusion and exclusion criteria during study period were considered for final analysis. The perineum was repaired by one of the techniques; continuous suture technique with continuous locking sutures in the vagina, perineum muscles and subcutaneous tissues for skin and interrupted suture technique in vagina, interrupted sutures in the perineal muscles and mattress sutures for skin.

Immediately after repair of the perineum, the numbers of suture packets used were counted and the patients were asked about pain on 2ND and 10TH day 3 months after delivery. Verbal Rating Score (VRS 0-3), consists of a scale from 0 to 3 (0= no pain, 1=mild, 2=moderate, 3=severe pain) was used to evaluate pain severity at 2ND and 10TH day 3 months after delivery and episiotomy repair.

Data Collection Procedure:

Participants included 200 pregnant females in labour fulfilling the inclusion criteria, getting admitted in labour room of AVBR Hospital. An informed consent for using their data in research was obtained. Two groups of participants were made and group allocated 'A' or 'B' randomly by lottery method.

Group A: included 100 females on whom interrupted method of episiotomy stitching was employed.

Group B: included 100 females on whom continuous method of episiotomy stitching was employed.

Both types of episiotomy repair was done by operator of equal competence that was assessed by year of training to avoid bias of skill i.e. repair in both group was done by trainees of same year. Patients were inquired at 48 hours after delivery and at 10th postpartum day when she was called after 3 months for post natal follow up about pain using visual analogue scale. All this information was entered in a pre-designed proforma and was analysed to compare the outcome of continuous method of episiotomy stitching with interrupted method of episiotomy repair.

Data Analysis:

Data was entered in Microsoft Excel and results were analyzed by using percentage and proportions whenever necessary.

Results:

As shown in Table 1 that among 100 patients who underwent continuous episiotomy suturing, maximum patients i.e. 84% required only one packet of VICRYL where as in other group of intermittent suturing 72% patients required more than one packet.

Table 1 Suture packets used according to technique employed

Technique of suturing	1 packet (n= %)	2 packets (n= %)	3 or more packets (n= %)
Continuous	84	14	2
Intermittent	18	72	10

Table 2. Relation between suture technique and pain at the time of interview (pain now), the second and tenth day and at 3 months

Technique of suture	NO PAIN	MILD PAIN	MORE PAIN	SEVERE PAIN
SECOND DAY				
CONTINUOUS	50	36	10	4
INTERMITTENT	46	38	12	4
Tenth DAY				
CONTINUOUS	82	14	3	1
INTERMITTENT	76	18	6	2
3 MONTHS				
CONTINUOUS	98	2	0	0
INTERMITTENT	97	1	1	1

The comparison of pain on the second and tenth postpartum days, and 3 months postpartum (pain now) was not statistically significantly different between the two techniques. No differences existed in pain between the second and tenth days postpartum with respect to rest, while moving or sitting, or during urination or defecation.

Table 3. Relation between suture technique and pain in different circumstances, on the second and tenth day

	No pain, n (%)	Pain yes, n (%)		Pain no/yes, RR (95% CI)
		Slight (%)	Moderate/severe (%)	
Second day				
Pain in repose				
C (n = 100)	56(56)	32(32)	10(10)	0.91 (0.63–1.33)
I (n = 100)	58(58)	33(33)	8(8)	

Pain in movement				
C (n = 100)	36(36)	38(38)	56(56)	1.26 (0.85–1.88)
I (n = 100)	30(30)	45(45)	23(23)	
Pain when sitting				
C (n = 100)	27(27)	39(39)	33(33)	0.75 (0.50–1.12)
I (n = 100)	33(33)	33(33)	32(32)	
Pain when urinating				
C (n = 100)	42(42)	34(34)	22(22)	0.72 (0.49–1.03)
I (n = 100)	51(51)	31(31)	17(17)	
Pain when defecating				
C (n = 100)	57(57)	25(25)	17(17)	0.59 (0.33–1.06)
I (n = 100)	69(69)	16(16)	13(13)	
Tenth day				
Pain in repose				
C (n = 100)	81(81)	16(16)	1(1)	0.78 (0.47–1.30)
I (n = 100)	85(85)	12(12)	1(1)	
Pain in movement				
C (n = 100)	65(65)	26(26)	7(7)	0.87 (0.58–1.30)
I (n = 100)	68(68)	25(25)	5(5)	
Pain when sitting				
C (n = 100)	58(58)	29(29)	11(11)	0.90 (0.61–1.32)
I (n = 100)	61(61)	29(29)	8(8)	
Pain when urinating				
C (n = 100)	71(71)	24(24)	4(4)	1.03 (0.68–1.57)
I (n = 100)	70(70)	19(19)	9(9)	
Pain when defecating				
C (n = 100)	68(68)	23(23)	8(8)	0.89 (0.59–1.34)
I (n = 100)	70(70)	19(19)	9(9)	

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.

As was dyspareunia, although those in the interrupted suture group resumed sexual intercourse sooner.

Instrumental deliveries were not included in the study because apart from not being performed by midwives, the episiotomies tend to be cut larger and earlier. Premature childbirths 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 haemorrhage. 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 an anonymous survey, by means of questionnaires given to midwives of state hospitals in Madrid2, which was carried out by the same authors before beginning the project, we discovered 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, although there is a great preference for one technique, there are only a few clinical trials that compare the effects of different suture techniques on the magnitude of maternal morbidity associated with repair of the perineum. 4-6 Fleming⁷ published his experience in the use of the subcutaneous suture technique in repairing the skin and suggested that this technique was associated with a lower degree of pain in the perineum compared with other more traditional methods of suture.

In a recent meta-analysis⁸ that included seven clinical trials involving 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 the discontinuous technique. Kettle et al⁹ 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.

In our comparative study, in the two groups of women, the ability of the health professionals and the type of material 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. Although our results contradict the recent meta-analysis of the Cochrane database,⁸ our conclusions agree with those of a more published study¹⁰ 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 those women selected were less tolerant of pain or less reluctant to analgesics. Above all, in the group of women who did not use oral analgesics, there was a high percentage which referred to pain. It is probable that in the acceptance and perception of pain, there are other factors that are difficult to define and to quantify, yet exert an influence on analgesic use.

On a daily basis, there are a great number of women in need of repair of injuries to the perineum sustained during childbirth.

Although we have not demonstrated that one technique is superior to any other regarding the incidence of pain in the short or long term, we have identified a technique that is quicker to perform and consumes less suture material without a risk of increased complications.

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