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Research Article

A comparative study of continuous versus interrupted suturing for repair of episiotomy or second degree perineal tear

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ABSTRACT

Background: This study has been taken up to assess the effects of continuous versus interrupted suturing methods on the incidence of short and long term postpartum maternal morbidity experienced by women following repair of episiotomy or second-degree perineal tears after vaginal birth.
Methods: This comparative prospective study was conducted in department of obstetrics and gynaecology of S.C.B. medical college, Cuttack, Odisha to compare continuous suturing technique with interrupted method for the repair of episiotomy and second degree perineal tear following vaginal delivery in 211 women. One group was repaired with continuous non-locking sutures involving the vaginal mucosa, perineal muscles and subcutaneous tissue for skin and other group had continuous locking stitch of vaginal mucosa, interrupted sutures in perineal muscles and interrupted transcutaneous stitches for skin. Identical suture material (catgut supplied by the government) was used for both the groups. The mothers were interviewed on the 2nd, 10th and 42nd day following repair regarding pain perception with lying, walking and sitting posture using Visual Analogue Scale (VAS).
Results: The pain score measured by VAS on 2nd day showed mild to moderate pain in continuous group compared to moderate and severe pain in interrupted group (P = 0.008) in lying position and (P = 0.000) in sitting and walking position. On 10th day no difference in perception in lying position (P = 0.571) but more subjects of interrupted group had pain in sitting and walking position (P = 0.05). On 42nd day no difference in pain perception in both groups was seen (P = 1.000). There was no difference in wound dehiscence in both the groups (P = 0.361). Subjects in the interrupted group had greater complains of dyspareunia compared to subjects in continuous group (P = 0.009). Less length of suture were required in the continuous group (P = 0.000).
Conclusions: Continuous suturing technique for repair of episiotomy and second degree of perineal tear compared to interrupted methods are associated with less short term pain, dyspareunia and amount of suture material used is also less but there is no difference in daily work after 42 days and incidence of wound dehiscence.

Keywords: Episiotomy, Perineal tears, Visual analogue scale, Continuous suturing, Interrupted suturing

INTRODUCTION

Evolution is a significant truth of existence, so whatever methods or techniques of surgery are developed evolved over time and not withstanding episiotomy. Episiotomy the surgical incision made on the perineum to reduce the soft tissue resistance of the outlet and to straighten the pelvic canal that facilitates delivery.[1] The first recorded episiotomy occurred in Scotland in 1740s.[2] The procedure was not put to wide use in mid 1900s,when doctors in United States began to believe that the routine use of episiotomy would increase the speed of labour, prevent trauma or tearing to the vagina and prevent relaxation of the pelvic floor muscles, thereby preventing urinary and fecal incontinence. The policy of routine episiotomy should be abandoned in favour of policy of selective episiotomy.[3]

A recent prospective observational study revealed that 78 percent of women had a tear during child birth.[4] It is estimated that over 85 percent of women who have spontaneous vaginal birth will sustain some form of perineal trauma and of these 60-70 percent will require suturing.[4]

The technique of suturing perineal trauma following childbirth may have a significant effect on the extent and degree of morbidity experienced by women both in short and long term. For more than 70 years, researchers have been suggesting that continuous non locking suture techniques for the repair of vagina, perineal muscle and skin are far better than the traditional interrupted methods in terms of reduced postpartum pain and yet they have not been generally used.[5]

This study has been taken up to assess the effects of continuous versus interrupted suturing methods on the incidence of short and long term postpartum maternal morbidity experienced by women following repair of episiotomy or second-degree perineal tears after vaginal birth.

The evidence collated in this study will throw light to choose the most appropriate technique of perineal repair in terms of both health gain and cost.

The main outcomes of interest studied are short and long term pain, amount of suture material used, intromission dyspareunia and resuturing of wound.

METHODS

The study was conducted in the department of obstetrics and gynaecology of S. C. B. medical college, Cuttack, Odisha.

211 patients of variable age groups and parity with term pregnancy were enrolled in the study. The period of study was from June 2009 to December 2011.

Inclusion criteria

1) Vaginal birth with or without instrumentation
2) Pregnancy of atleast 37 weeks gestation
3) An episiotomy involving the skin and muscle but not the anal sphincter or rectum
4) Aviable new-born without serious congenital malformation

Exclusion criteria

1) Factors interfering with wound healing like severe anaemia, diabetes mellitus or patients on corticosteroids or immune-suppressants
2) Epidural labour analgesia which affects post-partum pain perception

This is a prospective comparative study between continuous and interrupted suturing used for episiotomy repair. All patients of reproductive age group with episiotomy or perineal tears are enrolled in this study after taking their consent. Suture material used in both the groups was same i.e. absorbable chromic catgut no1-0 which is supplied by the government.

One group was repaired with continuous, non-locking sutures involving the vagina, perineal muscles and subcutaneous tissue for skin.

The other group had continuous locking sutures of vagina, interrupted sutures in the perineal muscle and interrupted transcutaneous sutures. Patients were not aware of the type of suturing done.

Mothers were interviewed on 2nd, 10th, 42nd day following repair regarding pain perception with lying, walking and sitting postures using visual analogue scale. Besides this the number of sutures used, wound dehiscence and dyspareunia were also compared.

The statistical analysis of the data collected was done using SPSS 13 software. The results were analysed using Chi-square test and Mann Whitney U test.

RESULTS

A total of 211 women having either episiotomy or second degree perineal tear were selected with their consent, out of which 105 women had their perineum repaired by continuous technique and 106 women had their perineum repaired by interrupted technique. Almost equal number of subjects with similar age group and parity were taken in both study groups. The pain score measured by VAS on 2nd day, 10th day & 42nd day of puerperium is reflected (Table 1).

The pain score measured on the 2nd day in lying position showed 51.9% subjects in the interrupted group had moderate to severe pain compared to 20% in continuous group (P = 0.008). On 2nd day in sitting and walking position 51.9% subjects in interrupted group had pain in comparison to 20% in continuous group (P = 0.000). Pain score measured on 10th day in lying position showed 68.7% of subjects had no pain (P = 0.571). Pain score measured on 10th day in sitting and walking showed 70.5% subjects in continuous group had no pain compared to 56.6% in interrupted group. Incidence of mild to moderate pain was more in interrupted group 43.4% compared to 29.6% in continuous group (P = 0.024). Pain score measured on 42nd day in lying, sitting and walking positions showed no pain in all subjects of both the groups (P = 1.000). No difference in number of wound dehiscence in both groups noticed (P = 0.361) (Table 2).

Subjects in interrupted group had greater complains of dyspareunia (73%) compared to subjects in continuous

group (27%), P = 0.009 (Table 3). Comparison of number of sutures used showed less suture was used in continuous group as compared to interrupted group (P = 0.000) (Table 4).

Table 1: Mann-Whitney Test for comparing suturing techniques and pain in postpartum days 2nd,10th,42nd.

Pain	Suturing type	N	Mean rank	Mann Whitney U	2 sided P value
Pain in 2nd day in lying position	Continuous	105	97.00	4619.5	0.009
	Interrupted	106	114.92		
Pain in 2nd day in sitting position	Continuous	105	88.95	3775	0.000
	Interrupted	106	122.89		
Pain in 2nd day in walking position	Continuous	105	88.95	3775	0.000
	Interrupted	106	122.89		
Pain in 10th day in lying position	Continuous	105	103.87	5341.5	0.532
	Interrupted	106	108.11		
Pain in 10th day in sitting position	Continuous	105	98.13	4738.5	0.027
	Interrupted	106	113.80		
Pain in 10th day in walking position	Continuous	105	98.13	4738.5	0.027
	Interrupted	106	113.80		
Pain in 42nd day in lying position	Continuous	105	106.0	5565	1.000
	Interrupted	106	106.0		
Pain in 42nd day in sitting position	Continuous	105	106.0	5565	1.000
	Interrupted	106	106.0		
Pain in 42nd day in walking position	Continuous	105	106.0	5565	1.000
	Interrupted	106	106.0		

Table 2: Comparison of wound dehiscence with suturing technique.

Wound dehiscence	Suturing technique		Total
	Continuous	Interrupted	
Yes	4 (3.8%)	7 (6.6%)	11 (5.2%)
No	101 (96.2%)	99 (93.4%)	200 (94.7%)

Chi square P value = 0.361

Table 3: Comparison of dyspareunia with suturing technique.

Dyspareunia	Suturing technique		Total
	Continuous	Interrupted	
Yes	20 (19%)	37 (34.9%)	57 (27%)
No	85 (81%)	69 (65/1%)	154 (73%)

Chi square P value = 0.009

Table 4: Comparison of number of sutures according to suturing technique.

Number of sutures used	Suturing technique		Total
	Continuous	Interrupted	
1	93 (88.6%)	28 (26.4%)	121 (57.3%)
2	12 (11.4%)	62 (58.5%)	74 (35.1%)
3	0	16 (15.1%)	16 (7.6%)
Total	105 (100%)	106 (100%)	211 (100%)

Chi square P value = 0.000

DISCUSSION

In this study, the differences between the continuous suturing group and the interrupted suturing group were uses of less suture material. Short term pain was less in continuous suturing group and long term complains of pain were similar between the two groups. More dyspareunia (three times more) was seen in interrupted group but the incidences of wound dehiscence were same in both the groups.

Kettle et al. carried out a trail 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.[6]

In this comparative study, in the two groups of women, the ability of health professionals and the type of materials used were the same. The only difference was the suture technique. Less suture material used and less short term postpartum pain were the significant differences between the two groups. Our results were same as the recent meta-analysis of the Cochrane database.[7]

Almeida SF, Rieco MI compared the continuous and interrupted techniques and found more pain in interrupted suture technique.[8] 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 the adhesive glue was associated with a lower degree of pain in the perineum compared with other more traditional method.[9]

Thus in conclusion, continuous suturing techniques for perineal closure are 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 that the continuous technique requires less suture material compared to interrupted method. Therefore the continuous nonlocking 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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