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RESEARCH ARTICLE

Continuous versus interrupted suturing techniques for repair of episiotomy - a randomized controlled trial

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ABSTRACT

Objective: To assess the efficacy and safety of continuous versus interrupted suturing technique for repair of episiotomy. **Method**: 102 consecutive term primigravidae who received mediolateral episiotomy in VIMS labour ward were randomly assigned to receive continuous or intermittent suturing technique after exclusion criteria to include 51 in each group. **Results**: Length of episiotomy was 5 cm in both the group. 14 minutes and 75 cm long suture was required to suture in continuous (cases) group compared to 17 minutes and 90 cm long suture in interrupted (control) group which was statistically significant. Significantly less perineal pain was perceived at 12 and 24 hours in cases compared to controls. Wound healing process was similar in both the groups. **Conclusion**: Continuous suturing technique is simple, quick and economical with significantly lower short-term pain compared to intermittent technique of suturing.

Keywords: Episiotomy, continuous, interrupted suturing.

Episiotomy finds its mention in history as early as 1741. It is a surgical procedure that entails incision of perineum in second stage of labour with the aim of facilitating vaginal delivery of foetus, prevent perineal injuries especially obstetric anal sphincter injury (OASIS).[1] Although the current tendency is to reduce the incidence of episiotomies, it continues to be more frequently used procedure that affects a great number of women and contributes in maternal morbidity.[2]

Cochrane systemic review found that continuous subcuticular technique of perineal skin closure, when compared with interrupted transcutaneous stitches were associated with less short-term pain.[3] The type of suture material, the technique of repair and the skill of the operator are the main factors that influence the outcome of episiotomy repair.[4]

This study was undertaken to assess the effect of continuous versus interrupted suturing technique using synthetic absorbable suture material while repairing episiotomy.

Methodology

102 primigravidae with vertex presentation requiring episiotomy admitted in VIMS labour ward were recruited in the study. Women with previous history of episiotomy gaping or haematoma, known case of bleeding disorders, instrumental deliveries, immunosuppressive patients, serology positive for HIV and HbsAg, high risk pregnancy like severe hypertension, anaemia, were excluded from the study. Based on computer generated randomization technique women were randomized into group 1(continuous) and group 2 (intermittent) at the time of episiotomy. As an institutional policy all received right mediolateral episiotomy.

Episiotomy group 1(cases) were sutured with synthetic, fast absorbing, multifilament polyglactin 910 suture material continuously non locking from mucosa, muscle layer and skin with subcuticular and their knot was placed after the completion and suture material was cut.

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Table 1: Comparison of episiotomy length, suture material, time consumed

Categories		Independent samples test								
		Levene's test for equality of variances		t-test for equality of means						
		F	Sig.	t	df	P value	Mean difference	Std. Error difference	95% Confidence interval of the difference	
									Lower	Upper
Time for suturing in minutes	Equal variances assumed	.003	.955	-5.433	100	.0005	-2.7647	.5089	-3.7744	-1.7550
Length of wound in cm	Equal variances assumed	.162	.688	.267	100	.790	.04412	.16498	-.28320	.37144
Suture material used in cm	Equal variances not assumed	22.454	.000	-7.361	72.465	.0005	-15.156	2.0590	-19.261	-11.052

p – Value - ** Highly significant at p < 0.01; # No significant at p > 0.050

Episiotomy group 2 women were sutured using same suture material but in conventional 3 layered interrupted suturing technique. To overcome interperson variability only 2 operators were randomly involved in all these cases. In both the groups time taken to suture, length of suture material used, length of episiotomy was recorded. Immediately after suturing, single dose of diclofenac IM was given to all women belonging to both groups and pain score at 12 hours, 24 hours, 3 weeks and 6 weeks was assessed using visual analogue scale (VAS) in both the groups. Similar antibiotics and postnatal care was advised. Occurrence of haematoma, wound gaping was noted.

Statistical analysis: The collected data were analyzed with IBM SPSS Statistics for windows, version 23.0. (Armonk, NY: IBM Corp). To describe about the data descriptive statistics frequency analysis, percentage analysis was used for categorical variables and the mean & S.D were used for continuous variables. To find the significant difference between the bivariate samples in independent groups the unpaired sample t-test and the Mann-Whitney U test was used. To find the significance in categorical data chi-square test was used similarly if the expected cell frequency is less than 5 in 2×2 tables then the Fisher's exact was used. In all the above statistical tools the probability value .05 is considered as significant level.

Results

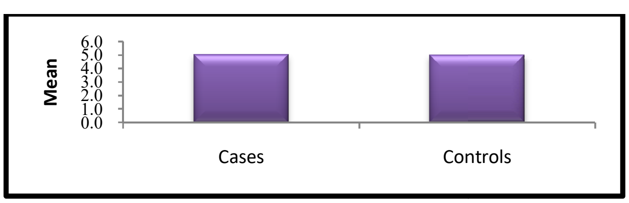

Figure 1: Length of wound.

Total of 102 women, 51 in each group underwent episiotomy. Demographic characters of both the groups were comparable. Both cases and controls had similar length of episiotomy 5cm and 5.1cm respectively (figure 1, table 1).

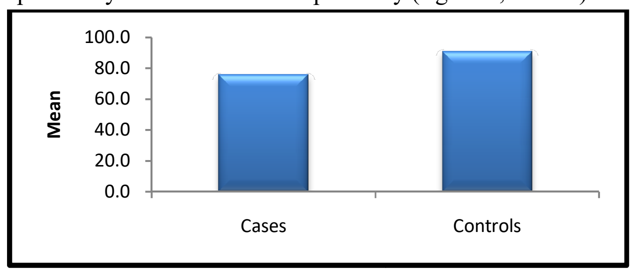

Figure 2: Suture material used in cm

Suture material consumed was significantly lower in continuous (cases) group 75 cm compared to interrupted (control) group 90cm which was statistically significant (figure 2 and table 1). Time to suture was significantly lower in continuous group compared to interrupted group (controls) 14 and 17 minutes respectively (figure 3, table 1)

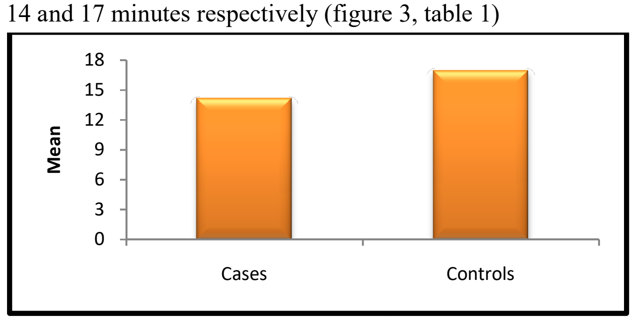

Figure 3: Time for suturing in minutes

There was significantly less pain at 12 and 24 hours in cases compared to controls (table 2, figure 4) but at the end of 3rd and 6th week follow-up, pain score was similar in both groups.

There was not much difference (2% and 7.8%) in additional analgesic requirement in either group (figure 5, table 3). Examination of wound did not show much difference in healing process in either of the group (table 4).

Table 2: Comparison of pain score using visual analogue scale (VAS)

Groups		N	Mean rank	Sum of ranks
VAS 12 hrs	Cases	51	31.73	1618.00
	Controls	51	71.27	3635.00
	Total	102		
VAS 24hrs	Cases	51	32.47	1656.00
	Controls	51	70.53	3597.00
	Total	102		
VAS 3weeks	Cases	51	51.50	2626.50
	Controls	51	51.50	2626.50
	Total	102		
VAS 6weeks	Cases	51	51.50	2626.50
	Controls	51	51.50	2626.50
	Total	102		

Test Statistics	Mann – Whitney U	Z	p-value
VAS 12 hrs	292.000	-7.111	.0005
VAS 24hrs	330.000	-7.077	.0005
VAS 3weeks	1300.500	0.000	1.000
VAS 6weeks	1300.500	0.000	1.000

Groups		N	Mean	SD
VAS 12 hrs	Cases	51	1.8	0.8
	Controls	51	3.2	0.8
VAS 24hrs	Cases	51	0.6	0.5
	Controls	51	1.6	0.6
VAS 3weeks	Cases	51	0.0	0.0
	Controls	51	0.0	0.0
VAS 6weeks	Cases	51	0.0	0.0
	Controls	51	0.0	0.0

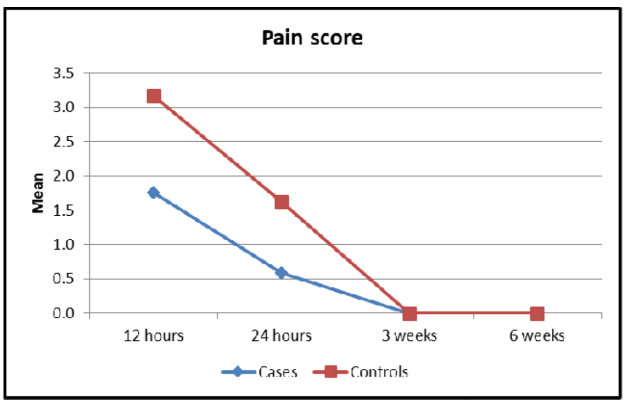

Figure 4: Pain score

Table 3: Comparison of additional analgesia needed

Parameters			Groups		Total
			Cases	Controls	
Analgesia	No	Count	50	47	97
		%	98.0%	92.2%	95.1%
	Yes	Count	1	4	5
		%	2.0%	7.8%	4.9%
Total		Count	51	51	102
		%	100.0%	100.0%	100.0%
Pearson Chi-Square	Value 1.893[a]		df 1		p-value .169

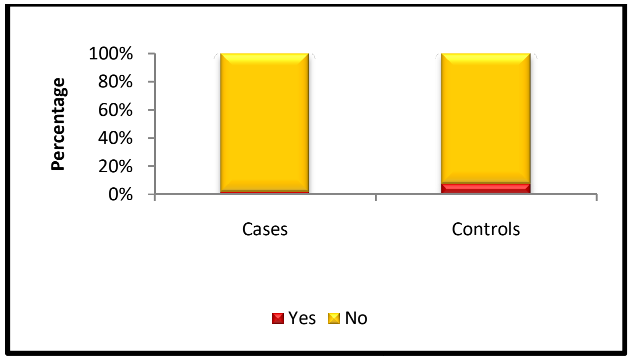

Figure 5: Analgesia with groups

Table 4: Comparison of nature of wound

Parameters			Groups		Total
			Cases	Controls	
Nature of wound	Oedematous	Count	1	0	1
		%	2.0%	0.0%	1.0%
	Healthy	Count	50	50	100
		%	98.0%	98.0%	98.0%
	Unhealthy	Count	0	1	1
		%	0.0%	2.0%	1.0%
Total		Count	51	51	102
		%	100.0%	100.0%	100.0%
Chi-square tests					
Pearson Chi-Square	Value 2.000[a]	df 2	p-value .368		

Discussion

Episiotomy is the most commonly performed surgical procedure in obstetrics. The rates are higher in developing countries like India, although the specific data is not available.[1] With the accumulation of evidence benefits and various aspects of episiotomy are still controversial.

Episiotomy repair may cause perineal pain sometimes dyspareunia which affect her sexual and quality of life. Type of suture material and technique used have an effect on the amount on perineal pain experienced by women in both short and long term.[3] We performed a randomized trial in homogenous healthy women delivering in our VIMS hospital to compare the suturing technique and its implications. We noticed significant reduction in time consumed for suturing in cases i.e continuous suturing technique compared to controls i.e interrupted suturing technique method. It was found relatively easy to perform continuous suturing than interrupted and amount of suture material required also was less. This may help in managing many cases at tertiary care hospital to train young obstetrics trainers with lower cost as suture material consumed is less. These results were consistent with study by Kokanali D et al.[4]

There was no significant difference in the need of additional analgesia in both the groups as local anaesthesia was universally practiced before episiotomy in the institute. Short term pain experienced by the women at 12 hours and 24 hours was less in cases compared to controls in our study. Continuous repair was associated with a reduction in short-term pain, together with a decreased need for the removal of sutures. The decrease in postrepair pain and dyspareunia 6 weeks postpartum was greater when all three layers (vaginal mucosa, perineal muscle and skin) were sutured in a continuous manner. Hence, this should become the standard manner of suturing Cochrane metanalysis also revealed the similar result.[3] Among women who did receive an episiotomy, the degree of postpartum discomfort and pain was related to the suturing technique and the type of suture used.[5, 6]

Continuous sutures can generate a close perfect, fast closure and relation of the two surfaces with good haemostasis. There is no ooze while suturing by maintaining aseptic precautions, following standard surgical principles while suturing episiotomy and ensuring adequate analgesic and antibiotic administration can prevent infection. This will prevent the necessity of removal of entire suture material removal in case of infection, serous and bloody ooze which can't get away from underneath sutured line and often created a thick scar. Episiotomy length, complications were comparable in both groups which was consistent with Mahmoud et al.[7] Mota R et al compared subcuticular vs adhesive glue for skin closure and found pain was less in glue group compared to traditional methods, suggesting deeper bites and tight knots may contribute in pain.[8]

Conclusion

Continuous repair technique of episiotomy is technically easy, effective, quicker, cheaper and beneficial compared to interrupted technique in view of healing, less time, less suture material consumption and lesser pain score or discomfort with excellent cosmetic effort without the risk of increased complications, however larger studies are required before generalizing the benefit.

Conflict of interest: None. **Disclaimer:** Nil.

References

1. Tripathi R, Singh C, Verma V. Current status of episiotomy. The Ganga Ram Journal. 2012; 2(5): 304-9.
2. Mahmood S, Anwar S. Continuous versus interrupted sutures for episiotomy wound repair. Journal of surgery Pakistan. 2013; 18(1): 7-11.
3. Kettle C, Doswell T, Ismail KM. Continuous and interrupted suturing techniques for repair of episiotomy or second - degree tears. Cochrane Database of Systematic Reviews. 2012; 11(11): CD000947
4. Kokanalý D, Ugur M, Kuntay Kokanalý M, Karayalcýn R, Tonguc E. Continuous versus interrupted episiotomy repair with monofilament or multifilament absorbed suture materials: a randomised controlled trial. Arch Gynecol Obstet. 2011; 284: 275- 80.
5. Grant A, Gordon B, Mackrodt C, Fern E, Truesdale A, Ayers S. The Ipswich childbirth study: One year follow up of alternative methods used in perineal repair. BJOG. 2001; 108: 34-40.
6. Oboro VO, Tabowei TO, Loto OM, Bosah JO. A multicentre evaluation of the two-layered repair of postpartum perineal trauma. J Obstet Gynaecol. 2003; 23: 5-8.
7. Ghareeb MA, Elmageid Abd Elhameid AA, El-Bakry Lashin M, Elsayed Soliman L. Interrupted versus continuous suturing of episiotomy: A comparative study. Zagazig University Medical Journal. 2020; 26(2): 287-96.
8. Mota R, Costa F, Amaral A, Oliveira F, Santos CC, Ayres-De-Campos D. Skin adhesive versus subcuticular suture for perineal skin repair after episiotomy: a randomised control trial. Acta Obstet Gynaecol Scand. 2009; 88(6): 660-6.

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