

## Comparison Of The Traditional Suturing Technique Versus Continuous Non-Locking For Repair Of Episiotomy Using Polyglactin 910.

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### ABSTRACT

**Introduction:** The present study was designed with the primary aim to compare the Traditional Suturing Technique versus Continuous Non-Locking technique for Repair of Episiotomy Using Treated Polyglactin 910.

**Materials and Methods:** A total of 100 postnatal women complying with study inclusion criteria were included and randomly divided into two groups viz. traditional suturing technique using polyglactin 910 (Group A) and continuous non-locking technique using polyglactin 910 (Group B). A detailed clinical evaluation was done for all the subjects. Appropriate and relevant investigations were done.

**Results:** Regarding the pain assessment by VAS score and episiotomy healing by REEDA score both the groups were not significant ( $p$ -value  $>0.05$ ), hence no difference was noted among them. However continuous non locking technique consumed less number of suture materials and less time as its  $p$ - value was  $<0.05$ , which was significant.

**Conclusion:** According to REEDA score and VAS score, there was no significant difference in episiotomy healing and pain assessment respectively. Continuous Non-Locking Technique of the episiotomy wound had less perineal pain on day 1, consumes less number of suture materials and less time, hence it was economically better when compared to Traditional Suturing technique.

**Keywords:** Episiotomy, traditional suturing, continuous non- locking suturing, Routine care, REEDA score, VAS.

## **INTRODUCTION**

Episiotomy, also known as Perineotomy, is a planned surgical incision of perineum and the posterior vaginal wall, performed during second stage of labour during crowning of the fetal head for facilitating delivery. The purpose of an episiotomy is to shorten the second stage of labour, aid the delivery of the presenting part when the perineum is tight, to prevent third-degree and fourth-degree perineal tears.<sup>6</sup> All these purposes are achieved by episiotomy incision because it widens, straightens and shortens the birth canal. Episiotomy is usually performed based on maternal or fetal indications and clinical judgement<sup>7, 8</sup> but still some countries perform episiotomy routinely against to the ACOG recommendations.<sup>7</sup>

## **Material and Methods**

It was a observational analytical study done at Dr. D.Y. Patil Medical College, Hospital and Research Centre, Pimpri, Pune, India from January 2020 to August 2022. The approval from ethical committee (IESC/PGS/2020/128) was obtained. Written and Informed consent was obtained from all patients in local language after explaining the benefits of the study.

Pre-designed and pre-tested routine questionnaire in local language and national language (as per patient's choice) has been prepared including

- Clinical evaluation and relevant investigations.
- Routine care of episiotomy includes perineal cold pack or ice pack, warm sitz baths, using over- the- counter (OTC) pain reliever like diclofenac twice daily, antibiotics includes T. Augmentin 625mg twice daily. All the patients were treated equally without any changes.

### ***Inclusion criteria***

- Postnatal mothers undergoing episiotomy at vaginal birth
- Cephalic presentation with Occipitoanterior or occipitotransverse positions only.
- All vaginal births irrespective of gravida status.

### ***Exclusion criteria***

- Patients suffering from chronic medical disorders like diabetes mellitus, liver diseases, heart diseases, renal diseases.
- Preterm delivery.
- Non-viable fetus.
- All cases of Malpresentations.
- Occipitoposterior position
- Hemoglobin <9gm/dl.
- Congenital malformed fetus.
- Bow or Face presentation or Compound presentation.

Total 100 patients fulfilling both the criteria and consenting during the study period were included in study. They were allocated randomly into two groups - group A with traditional suturing technique and group B continuous non-locking technique. In all the patients same suture material has been used ie. Polyglactin 910 (vicryl rapide). After inclusion and

exclusion criteria applied, informed consent was taken and the patient herself picked up a closed envelope with group name mentioning inside, it was handed over to the patient by sister on duty who was unaware of the study. Once the group was decided, the authors of the study or on call obstetrician performed the episiotomy closure by respective technique.

### **Traditional technique**

Episiotomy was traditionally repaired in three stages: a continuous locking stitch was inserted to close the vaginal layer of the incision, commencing at the apex of the wound and finishing at the level of the fourchette with a loop knot. The proposed rationale for using a locking stitch is to prevent shortening of the vagina and hemostasis. The perineal muscles were approximated with interrupted sutures. Finally, the perineal skin was sutured by interrupted vertical mattress (far-far near-near) transcutaneous stitches.

### **Continuous non-locking technique**

It is a three-stage technique: Firstly the apex of the vaginal mucosa was closed with a single continuous non-locking suture up till hymen, then the perineal muscles were approximated using a similar continuous non-locking technique and the repair was completed with a subcutaneous suturing from apex on skin towards hymen. The rationale for using this suturing technique is that the tension is transferred throughout the whole length of the single suture and also the skin sutures are inserted well below the skin surface avoiding the nerve endings, hence reducing the pain.

- VAS and REEDA score was mentioned in the questionnaire as it is the standard protocol validated by WHO.<sup>9,10</sup>
- VAS score and REEDA score could not be blinded because the assessment of the episiotomy healing was done by observing the wound after 72hours by authors in the study and consultant obstetrician on rounds. By decision of the majority, the assessment was measured on questionnaire.

#### **➤ VAS Score**

Visual Analog Scale is one of the pain rating scales used to measure the intensity or frequency of various symptoms in which the patient selects a whole number (0-10cm).<sup>9</sup>

<b>Score</b>	<b>Interpretation</b>
0-4mm	No pain
5-44mm	Mild pain
44-74mm	Moderate pain
75-100mm	Severe pain

- REEDA Score was used to assess postpartum restoration of the perineum. It has five components namely: Redness, Edema, Ecchymosis, Discharge, Approximation (closeness of skin edges).<sup>10</sup>
- It is a healing assessment tool based on a scale of three points. Score 3 is indicative very poor wound healing. The entire score ranges from 0 to 15 points. Higher score indicates poor wound healing while lower score indicates good wound healing.<sup>11</sup> it is assessed on day 1, day 2 and day 3.
- **REEDA score**

Score	Interpretation
0	Healed
1- 5	Moderately healed
6- 10	Mildly healed
11- 15	Poorly healed

- The data was collected systematically, coded, entered into Microsoft excel work sheet and exported to SPSS. Data was analyzed using SPSS version 20. Chi-square test and paired t-test were used for test of statistics.

### Results

History, examination, investigations, surgical technique, surgical material, VAS score and REEDA score was done by authors and on duty consultants at same center. The demographic data of these 2 groups were comparable in respect to age, parity and gestational age with p-value being >0.05. All the parameters of both groups are almost similar hence comparable.

Variable	Group A	Group B	P Value
Age(Years)	24.8 ± 4.24	25.28 ± 3.81	0.5529
Gestational Age(Weeks)	38.246 ± 2.227	38.436 ± 1.825	0.6462
Parity	0.94 ± 0.818	0.74 ± 0.803	0.2202

**Table 1: Comparison of demographic data**

For assessing the pain in our study we have used visual analog scale (VAS) scale. According to that group B patients have lesser pain when compared to group A due to the interrupted suturing technique used in group A. Fischer's exact Test was conducted and P-value>0.05 on day 2 and 3, this difference is considered to be not statistically significant. But on day 1 P-value <0.005 which denotes group B has less pain when compared to group A.

No of Days	Group	No of patients based on VAS score with				Total	P value
		No pain	Mild pain	Moderate pain	Severe pain		
Day 1	Group A	0	1	38	11	50	0.031 3
	Group B	0	4	43	3		
Day 2	Group A	0	33	17	0	50	0.110
	Group B	0	41	9	0		
Day 3	Group A	1	49	0	0	50	

	<b>Group B</b>	<b>7</b>	<b>43</b>	<b>0</b>	<b>0</b>	<b>50</b>	0.059
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**Table 2: VAS score**

In our study with the help of REEDA score episiotomy wound healing assessment has been done. Among the two groups no significant difference was noted. Fischer's exact Test was conducted to compare the two groups with p value >0.05. By conventional criteria, this difference is considered to be not statistically significant, hence in terms of episiotomy healing both the were similar.

No of Days	Group	No of patients based on REEDA score				Total	P value
		Healed	Moderately Healed	Mildly Healed	Not Healed		
Day 1	Group A	0	0	44	6	50	0.5
	Group B	0	0	45	5	50	
Day 2	Group A	0	17	33	0	50	
	Group B	0	26	24	0	50	
Day 3	Group A	0	50	0	0	50	0.24
	Group B	2	48	0	0	50	

**Table 3: REEDA score**

In group A where traditional interrupted suturing technique was used more suture materials were required when compared to group B where continuous non locking technique was used as shown in table 4. In most of the patient's time required for suturing was less than 5 minutes in group B when compared to the time required for suturing in group A as shown in table 5. Fischer's exact Test was conducted and the two-tailed P value equals <0.0001, hence P<0.05. By conventional criteria, this difference is considered to be statistically significant.

Number of suturing materials used	Group A	Group B	P value
Suture materials 1	10	44	<0.0001
Suture materials 2	34	06	
Suture materials 3	06	0	
Total	50	50	

**Table 4: number of suture materials used**

**Table 5: Time required for suturing according to technique employed**

We have also asked the patients to follow up after 10 days in the outpatient department and no patients were found to have any wound gape, discharge or hematoma. VAS and REEDA

Time required for suturing according to technique employed			
Technique used /Group	Time required		P value
	<5 min	>5 min	
Group A	9	41	<0.0001
Group B	48	2	

score were not assessed after 10 days as it would be non-significant.

### Discussion

In our study demographic data showed no difference in the distribution regarding age, parity and gestational age as showed in table 1. The study presented is least likely to be surgical skill biased as all the surgeons who performed episiotomy had similar surgical skills. Assessment bias was also reduced as the authors and chief consultant have assessed the episiotomy wound at same time and unanimously a decision was taken. Similarly observer bias as reduced as same antibiotics at same dosing along with same analgesics were given to all the patients.

In our study the rate of episiotomy healing among the two groups is almost similar and have no significant difference. In an Australian study, Valenzuela noted the pain severity on day 2, day 10 and 2 months after delivery and use of sedatives for pain relief. <sup>1</sup> Their study also found no difference among the two groups with continuous non locking and traditional

methods of episiotomy repair. But they had showed that episiotomy with continuous suturing were quicker and used less suture material without increasing the complication than interrupted suturing. Similar results were found in our study.

Group B with continuous non locking suturing technique used less number of sutures, less time for repair and less pain when compared to group B with interrupted traditional method of suturing. Similar results were found in study done by Dash S. Their study has also proved that by using continuous method of suturing there was less perineal pain and took less number of sutures and also less time for repair.<sup>2</sup>

In 2011, Kokanali conducted a randomized controlled in which continuous suturing technique showed less short term pain, need of less suture material and less time on the first day after the delivery. The difference between the pain on day 10 and 6 weeks after the delivery the results were similar.<sup>3</sup> In our study showed similar results as continuous non locking technique was better than traditional method as showed in table 1, 2 and 4. Almeida had also conducted a similar study and declared that traditional interrupted suturing technique had more pain than continuous suturing.<sup>4</sup>

In 2009, Fouzia Perveen and Tehmina Shabbir have conducted a randomized control clinical trial comparing traditional repair with continuous repair. Significant difference (p value- $<0.000$ ) in utilization of suture materials revealed that 76% of continuous group needed one suture material and 88% of traditional repair group utilized two suture materials. In our study similar results were found in which continuous no locking technique utilized less materials when compared to traditional suturing technique. On day 2, traditional group 18% showed more pain comparing to continuous group 14%. While on day 10 it was reversed 8% in traditional and 12% in traditional but p- value  $>0.005$  which is insignificant.<sup>5</sup> Day 1, 2 and 3 pain scores have been compared in our study in which continuous group and the traditional group had almost similar scores.

## CONCLUSION

In our study, both the groups were statistically not significant in terms of REEDA score and VAS score (on day 2 and 3). However group B used less suture materials, less time for repair and less pain on day 1 as their p-value was statistically significant. The overall observation in our study do suggest as continuous non- locking suturing technique has the following advantages when compared to traditional suturing technique

- Requires less number of suture materials.
- Less time for repair
- Less pain score on day 1.

Hence continuous non- locking technique for episiotomy closure is more economical than traditional method as it reduces the maternal morbidity in terms of pain and requirement of less suture materials and less time.

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