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# Comparative Study of Continuous Vs. Intermittent Technique of Episiotomy Suturing in Rural Population of India

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### Abstract:

**Introduction:** Episiotomy is a deliberate incision on perineum made to increase vulval outlet during child birth. Millions of women throughout the world experience pain and suffering as a result of perineal trauma sustained during delivery, and yet this is a very under researched area. Therefore, AIM of the present study was to compare pain severity and requirement of suture material at perineal repair in two episiotomy repair methods.

**Methods:** In this observational study, 200 full term patients who came to Pravara Rural Hospital, Loni for delivery and required episiotomy were randomly allocated into two groups of 100 who had undergone either continuous or interrupted episiotomy repair. Verbal Rating Score (VRS 0-3), was used to evaluate pain severity at 1<sup>st</sup> and 3<sup>rd</sup> day after episiotomy repair after delivery. Suture material required (chromic catgut No.1) also observed in terms of packets.

**Results:** Statistical tests show significant differences between the 2 groups in pain severity variations at 1<sup>st</sup> and 3<sup>rd</sup> day after delivery. However, the mean required time for repair and the number of used threads were significantly lower in the continuous repair group.

**Conclusion:** The results of this study showed that pain severity was more in intermittent suturing of perineum as compared to continuous. Nevertheless, shorter time of repair and fewer threads were required using the continuous repair method. Therefore, this method would provide better services for mothers and reduce the required time, energy, and costs.

**Key words:** Episiotomy, Perineum, continuous, intermittent.

### Introduction:

Episiotomy is a surgical incision of the perineum made to increase the vulval outlet during childbirth. Eighty five percent of women who have a spontaneous vaginal birth will have some form of perineal trauma, and up to sixty nine percent will need to have sutures.<sup>1</sup>

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.<sup>2</sup>

Although there are various techniques to close the incision of episiotomy, hemostasis and restoration of anatomical structure of the incision site without additional suture are fundamental aspects of success in all methods.

At present, two common methods of repair include continuous and interrupted methods.

Despite the importance of finding the best strategies to minimize the time required for episiotomy, provide effective prenatal care and reduce postpartum complications like pain and feeling of thread, limited studies with contradictory results have been performed in this field. On the other hand, maternal pain relief is completely essential according to the World Health Organization (WHO).

Millions of women worldwide undergo perineal suturing after childbirth and the type of repair may have an impact on pain and healing. For more than 70 years, researchers have been suggesting that continuous non-locking suture techniques for

repair of the vagina, perineal muscles and skin are associated with less perineal pain than traditional interrupted methods.

Therefore, we are determined to compare the two episiotomy repair methods in women who referred to educational-institute in rural and urban population. We then tried to present the best method of episiotomy repair with the least complications for mothers.

**Methodology**

This study was observational. Written informed consents received from 200 eligible women who were admitted in Pravara Rural Hospital for delivery. This study was conducted in the Gynaecology and Obstetrics unit 3. Patients were alternately allocated into two groups of 100 who had undergone either continuous or interrupted episiotomy repair.

**The inclusion criteria:**

- Full term vaginal birth without instrumentation (at least 37 weeks of gestation).
- Viable newborn without serious congenital malformations.

**The exclusion criteria:**

- Patients suffering from diabetes mellitus, chronic illness like liver, heart, renal diseases etc.

The perineum was repaired by one of the techniques with chromic catgut no1.

Women placed in the lithotomy position for repair. The standard analgesia for perineal repair was given in the wound area using 5-10 ml 2% zylcaine.

1. **Continuous** suture technique: The continuous suturing technique is not tightly taken, continuous locking suture to close the vaginal mucosa and the muscular layer of the perineum. The perineal skin is approximated with the subcuticular suture in the subcutaneous tissue a few millimeters under the perineal skin edges, finishing with a terminal knot in the vaginal mucosa in front of the hymenal ring.
2. **Interrupted** suture technique: The interrupted suture involved placing 3 layers of

sutures: a continuous locking stitch to close the vaginal mucosa, commencing above the apex of the wound by 1 cm and finishing at the level of the fourchette; 3 or 4 interrupted sutures to re approximate the deep and superficial perineal muscles; and interrupted mattress techniques to close the skin. The standard suture material in the study will be absorbable chromic catgut no.1 of length 76 cm.

Both the groups were given regular analgesia of Tab. paracetamol two times a day for 3 days and outcome measured.

**Outcome measures**

1. The time required for Episiotomy suturing in minutes approximately.
2. The number of suture material packets that will be used.
3. Postpartum perineal pain on postnatal day 1 and 3 according to VRS scale 0-3 (Fig.1).



Fig. 1.

**Statistical analysis** done by Asus computer using graph pad in stat version 3.1.

All data subjected to proper statistical test in order to obtain p value for its significance.

**Observations and results**

<b>Table 1: Comparison of time required by both suturing techniques</b>			
Technique of suturing	6-10min (n= %)	11-15min (n= %)	16-20min (n= %)
Continuous	35%	52%	13%
Intermittent	10%	32%	58%

According to observation table no 1: only 13% patients required time more than 15min in continuous group where as 58% patients required more than 15min time in intermittent group.

This is noteworthy time saving feature by continuous technique with chi sq value 47.172, df= 2 and p value <0.0001 which suggest extremely significant.

**Table 2: Suture packets used according to technique employed**

Technique of suturing	of 1 packet (n= %)	2 packets (n= %)	3 or more packets (n= %)	Total no. of packets used
Continuous	84%	14%	2%	119
Intermittent	18%	72%	10%	192

According to observation table no 2: Among 100 patients who underwent continuous episiotomy suturing, maximum patients i.e 84% required only one packet of chromic catgut where as in other group of intermittent suturing 82% patients required more than 1 packet. Chi sq value 87.155, df= 2 and p value <0.0001.

**Table 3: Relationship of suturing technique and severity of pain at 1<sup>st</sup> and 3<sup>rd</sup> day of delivery**

	VRS 0 (n= %)	VRS 1 (n= %)	VRS 2 (n= %)	VRS 3 (n= %)	X <sup>2</sup>	P value
<b>1<sup>st</sup> day</b>						
Continuous	10%	58%	20%	12%	39.523	<0.0001
Intermittent	5%	19%	51%	25%		
<b>3<sup>rd</sup> day</b>						
Continuous	61%	22%	14%	3%	40.978	<0.0001
Intermittent	20%	27%	35%	18%		

According to observation table no 3: Only 32% patients were complaining of pain of grade 2 and more on 1<sup>st</sup> day of delivery and it was reduced to only 17% on 3<sup>rd</sup> day, rest majority of the patients were comfortable in term of pain on very first day of delivery in continuous suturing technique. Whereas 76% of the patients complained of pain of severity grade 2 and more on 1<sup>st</sup> day and 53% on 3<sup>rd</sup> day in intermittent suturing technique; which suggest remarkable difference in pain severity in these two different suturing techniques.

### Discussion

This research was performed in order to compare time requirement, material requirement and pain severity of episiotomy site between continuous and interrupted repair methods.

The time required for repair of Episiotomy following continuous suturing was found to be much less in comparison with intermittent

technique with significant p value of <0.0001.84% of patients required one packet of suture material and 14% with 2 packets in continuous group, while only 18% required one packet and 72% with two packets of sutures in interrupted group, over all P value was <0.0001 and which was significant.

Similar study results were brought by Abed Gulab Nagure et al.<sup>3</sup> with P value 0.014 and which was significant. A study by Sohail Mahmood Ch, Shehnaz Anwar<sup>4</sup> also suggest that 94% of the patients required only one suture material as compared to 52% required two suture materials in intermittent group, which was also significant.

In present study majority of the patients (58%) were having mild pain(VRS1) on day 1 of procedure in continuous group whereas 76% patients were having moderate to severe pain in intermittent group with p value <0.0001 which shows extremely significant. On day 3 61%

patients were relieved of pain in continuous group where only 20% were relieved of pain in intermittent group which was significant with p value <0.0001. Australian study by Valenzuela et al. evaluated pain severity and use of sedatives on 2nd and 10th days and 3 months after delivery in two groups with continuous and interrupted methods of episiotomy repair. It did not show a significant difference in pain severity between two groups.<sup>5</sup> In England, Kettle et al. reported pain severity to be considerably less in continuous repair method until the 10th day. Although the difference was persistent until 12 months after delivery, it was not statistically significant.<sup>6</sup> In another study, Kettle et al. suggested that the difference in pain could be caused by the increased pressure on the sutures due to edema. While the pressure is distributed through the suture in the continuous method, the sutures are placed vertically on the wound in the interrupted method.<sup>7</sup>

One of the limitations of the present research is that pain is generally a mental phenomenon which can be influenced by different factors such as culture and socioeconomic status. It is thus not controllable in all conditions. We attempted to eliminate the confounding factor by randomized allocation of the subjects. It is however recommended to carry out a research under the same title to evaluate long-term pain and healing rate using the continuous and interrupted methods.

### Conclusion

Continuous technique is quick to perform and consume less suture material without the risk of increased complications. Statistically significant difference was noted regarding pain in the short or long term. Continuous method is more preferable due to fewer numbers of used threads and the shorter required episiotomy repair time. Therefore, it can be concluded that continuous sutures would provide mothers with better services, need less time and energy, and shorten the duration of mothers' stay on the delivery bed, and finally reduces the costs.

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