Observational study of continuous versus interrupted suturing of episiotomy in rural population of India in terms of requirement of suture material and pain

Aditi Tandon¹, Ajit Deshpande²

¹Junior Resident, ²Professor, Department of Obstetrics and Gynecology, Rural Medical College of Pravara Institute of Medical Sciences (Deemed University), Loni, Maharashtra, India

Abstract:

Context: Episiotomy is a deliberate incision on perineum made to increase vulval outlet during childbirth. 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.

Objectives: The present study was to compare the 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), 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 1st and 3rd day after episiotomy repair after delivery. Suture material required (chromic catgut no.1) also observed in terms of packets.

Results: In the present study, 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 one packet. However, the mean required time for repair and the number of used threads were remarkable lower in the continuous repair group.

Conclusion: The present 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 and costs.

Key words: Continuous suturing, Interrupted suturing, Episiotomy, Rural area

Introduction:

Episiotomy is a surgical increase of the perineum made to increase the vulval outlet during childbirth. 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.¹ 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.² 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.³,⁴ At present, two common methods of repair include continuous and interrupted methods. Despite the importance of finding the best strategies to 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).\textsuperscript{5,6} Therefore; we are determined to compare the two episiotomy repair methods in women who referred to educational-institute in rural population. We then tried to present the best method of episiotomy repair with the least complications for mothers.

Materials and Methods:
This study was observational study. This study was conducted in the Department of Obstetrics and Gynecology Unit 1 during the period of January to June 2015. Written informed consents received from 200 eligible women who were admitted in Pravara Rural Hospital, Loni for delivery during study period. The inclusion criteria were vaginal birth without instrumentation, at least 37 weeks of gestation, and a viable newborn without serious congenital malformations. The exclusion criteria were patients suffering from diabetes mellitus, chronic illness like liver, heart, renal diseases etc. Hence a 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 1\textsuperscript{st} and 3\textsuperscript{rd} day 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 1\textsuperscript{st} and 3\textsuperscript{rd} day after episiotomy repair after delivery.

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 chromic catgut where as in other group of intermittent suturing 82\% patients required more than one packet.

As per Table 2 that only 32\% patients were complaining of pain of grade 2 and more on 1\textsuperscript{st} day of delivery and it was reduced to only 17\% on 3\textsuperscript{rd} 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\textsuperscript{st} day and 53\% on 3\textsuperscript{rd} day in intermittent suturing technique; which suggest remarkable difference in pain severity in these two different suturing techniques.

<table>
<thead>
<tr>
<th>Technique of suturing</th>
<th>1 packet (n= %)</th>
<th>2 packets (n= %)</th>
<th>3 or more packets (n= %)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Continuous</td>
<td>84%</td>
<td>14%</td>
<td>2%</td>
</tr>
<tr>
<td>Intermittent</td>
<td>18%</td>
<td>72%</td>
<td>10%</td>
</tr>
</tbody>
</table>
Table 2: Relationship of suturing technique and severity of pain at 1\textsuperscript{st} and 3\textsuperscript{rd} day of delivery

<table>
<thead>
<tr>
<th></th>
<th>VRS 0 (n= %)</th>
<th>VRS 1 (n= %)</th>
<th>VRS 2 (n= %)</th>
<th>VRS 3 (n= %)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1\textsuperscript{st} day Continuous</td>
<td>10%</td>
<td>58%</td>
<td>20%</td>
<td>12%</td>
</tr>
<tr>
<td></td>
<td>5%</td>
<td>19%</td>
<td>51%</td>
<td>25%</td>
</tr>
<tr>
<td>3\textsuperscript{rd} day Continuous</td>
<td>61%</td>
<td>22%</td>
<td>14%</td>
<td>3%</td>
</tr>
<tr>
<td></td>
<td>20%</td>
<td>27%</td>
<td>35%</td>
<td>18%</td>
</tr>
</tbody>
</table>

VRS 0: No pain, VRS 1: Mild pain, VRS 2: Moderate pain, VRS 3: Severe pain

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. Instrumental deliveries were not included in the study because apart from addition of other factors responsible for more pain, the episiotomies tend to be cut larger and earlier. Premature child-births 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 hemorrhage. 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.\textsuperscript{7,10}

In a survey, by means of questionnaires given to midwives of state hospitals in Madrid, which was carried out by the same authors before beginning the project, 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, there was a great preference for one technique. There are only few clinical trials that compare the effects of different suture techniques on the magnitude of maternal morbidity associated with the repair of perineum.\textsuperscript{11-14}

Almeida SF et al.\textsuperscript{15} compared the continuous and interrupted techniques and found more pain in interrupted suture technique. Mota R et al.\textsuperscript{16} 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 adhesive glue was associated with a lower degree of pain in the perineum compared with other more traditional methods. A study by Kettle et al.\textsuperscript{17} 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 a study that included 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 discontinuous technique. In this comparative study, in the two groups of women, the ability of the health professionals and the type of materials 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.18
Although our results contradict the recent meta-analysis of the Cochrane database. Our conclusion
goes with those of a published study 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 the 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 that
referred to pain. It is probable that in the acceptance and perception of pain, there are other
factors that are difficult to define and quantify, yet exert an influence on analgesic use.19

**Conclusion:**
Continuous technique was quick to perform and consumed less suture material without the risk of
increased complications. Continuous method was 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 reduce costs.

**References:**

controlled trial of care of the perineum during second stage of normal labor. Br J Obstet Gynaecol
1998;105:1262-72
4. Fleming N. Can the suturing method make a difference postpartum, perineal pain? J Nurse Midwifery
5. Kettle C., Hills R., Jones P., Darby, L., Gray, R., Johanson, R. Continuous versus Interrupted perineal
repair with standard or rapidly absorbed sutures after spontaneous vaginal birth: a randomized
controlled trial. The Lancet 2002;359.
6. Fleming, EM., Hagen S., Niven C. Does perineal suturing make a difference? The SUNS trial. An


