

RESEARCH PAPER.**COMPARISON OF SHORT TERM AND LONG TERM COMPLICATIONS OF CONTINUOUS VERSUS INTERRUPTED SUTURING TECHNIQUE**

Niruthan T¹,Rajapaksha R.N.G.²

¹Speciality Doctor, James Paget University hospital, Gorleston, United Kingdom, ²Consultant Obstetrician and Gynaecologist North Colombo Teaching Hospital, Sri Lanka.

Corresponding Author: Niruthan T. email: nirunithana@yahoo.com

ABSTRACT

When women give birth the perineum (the area between the vaginal opening and back passage) sometimes tears or it may be necessary to have an episiotomy (surgical cut) to increase the size of the outlet. Episiotomies and tears that involve the muscle layer (second degree) need to be stitched. A higher mean pain score was observed among the participant group which underwent interrupted suturing method than the group which underwent continuous suturing method. Majority of the participant who required analgesics for episiotomy pain were from the study group which underwent interrupted suturing method ($z=1.3;p=0.193$). Infections and antibiotic treatment were more common among the group who underwent continuous suturing ($z=1.7;p=0.098$). Wound dehisions were also frequently noted among the continuous suturing group ($z=1.4;p=0.149$). At the end of the three months of observation period more superficial dyspareunia ($z=0.6;p= 0.534$) and granuloma formation ($z=1.2;p=0.246$) were recorded among the group with interrupted sutures. When overall satisfaction was considered, most of the participants were included into the group who underwent continuous sutures. Continuous suturing technique can be used as a more cost effective technique for episiotomy suturing. Making awareness among labor room working staff and providing hand skill training for the staff members regarding continues suturing techniques appears to be more beneficial.

Introduction

Morbidity associated with childbirth may affect women's physical, psychological, and social well-being, both in the immediate and long-term postnatal period(1). Perineal

discomfort may disrupt breastfeeding, family life, and sexual relations(2)(3). Complications depend on the severity of perineal trauma and on the effectiveness of treatment. The type of suturing material, the skill of the operator, and the technique of repair are the 3 main factors that influence the outcome of perineal repair(4). The use of a rapidly absorbed form of polyglactin for repair of perineal trauma is associated with a significant reduction in pain and a reduction in suture removal when compared with standard absorbable synthetic material(5). Practitioners who are appropriately trained are more likely to provide a consistently high standard of perineal repair(6).

When women give birth the perineum (the area between the vaginal opening and back passage) sometimes tears or it may be necessary to have an episiotomy (surgical cut) to increase the size of the outlet(7). Episiotomies and tears that involve the muscle layer (second degree) need to be stitched(8,9). In the Sri Lanka alone, approximately 800 women per day will experience perineal stitches following vaginal birth and millions more worldwide(10). A midwife or doctor will stitch the episiotomy or second degree tear in

three layers (vagina, perineal muscle and skin). Traditionally the vagina is stitched using a continuous locking stitch and the perineal muscles and skin are repaired using approximately three or four individual stitches, each needing to be knotted separately to prevent them from dislodging(11). Researchers have been suggesting for more than 70 years that the 'continuous non-locking stitching method' is better than 'traditional interrupted methods'(8).

Methods

Mothers who underwent normal vaginal delivery at the maternity unit of Colombo north teaching hospital Sri Lanka, were selected for the study. Pregnant mothers were randomly included in to two groups securing allocation concealment. Sequentially numbered sealed opaque envelopes method was used for this procedure and study sample included 160 study participants. It included 82 participants for continuous suturing and 78 for interrupted suturing. Randomized controlled trial design was used and a follow up period of three months was allocated for the study. Participants who were unable to complete the total follow up period were not included for analysis.

Primigravidae mothers who had completed 37 weeks of POA were included into the study. Singleton pregnancy and cephalic presentation were considered as inclusion criteria. Pregnant mothers were exposed to and ultrasound scan before selection and only mothers with a pregnancy of 2.5 kg to 3.5 kg estimated birth weight were included into the study. Pregnancies complicated with antenatal medical conditions were excluded from the study. Mothers who required instrumental assistance during delivery and mothers who required many other methods to stop heavy post-partum bleeding except episiotomy suturing were not followed up for outcome measures.

Results

A significant difference was not identified between age, BMI, POA and the birth weight of the delivered babies among selected participants (Table 1). A higher mean pain score was observed among the participant

group which underwent interrupted suturing method than the group which underwent continuous suturing method (Figure 1). Majority of the participant who required analgesics for episiotomy pain were from the study group which underwent interrupted suturing method ($z=1.3;p=0.193$). Infections and antibiotic treatment were more common among the group who underwent continuous suturing ($z=1.7;p=0.098$). Wound dehisions were also frequently noted among the continuous suturing group ($z =1.4: p = 0.14$). At the end of the three months of observation period more superficial dyspareunia ($z=0.6;p= 0.534$) and granuloma formation ($z=1.2;p=0.246$) were recorded among the group with interrupted sutures. When overall satisfaction was considered, most of the participants were included into the group who underwent continuous sutures (Table 2).

Table 1: Distribution of exposure variables of the study participants

Variable	Continuous Suturing	Interrupted suturing
	Mean (95%CI)	Mean (95%CI)
Age	25.49(24.5-26.3)	23.86(22.96-24.76)
BMI	20.15(19.4-20.9)	21.1(20.20-21.99)
POA	273.73(272.2-275.2)	274.2(272.4-276.1)
Birth weight	2.9(2.8-2.9)	2.8(2.7-2.9)

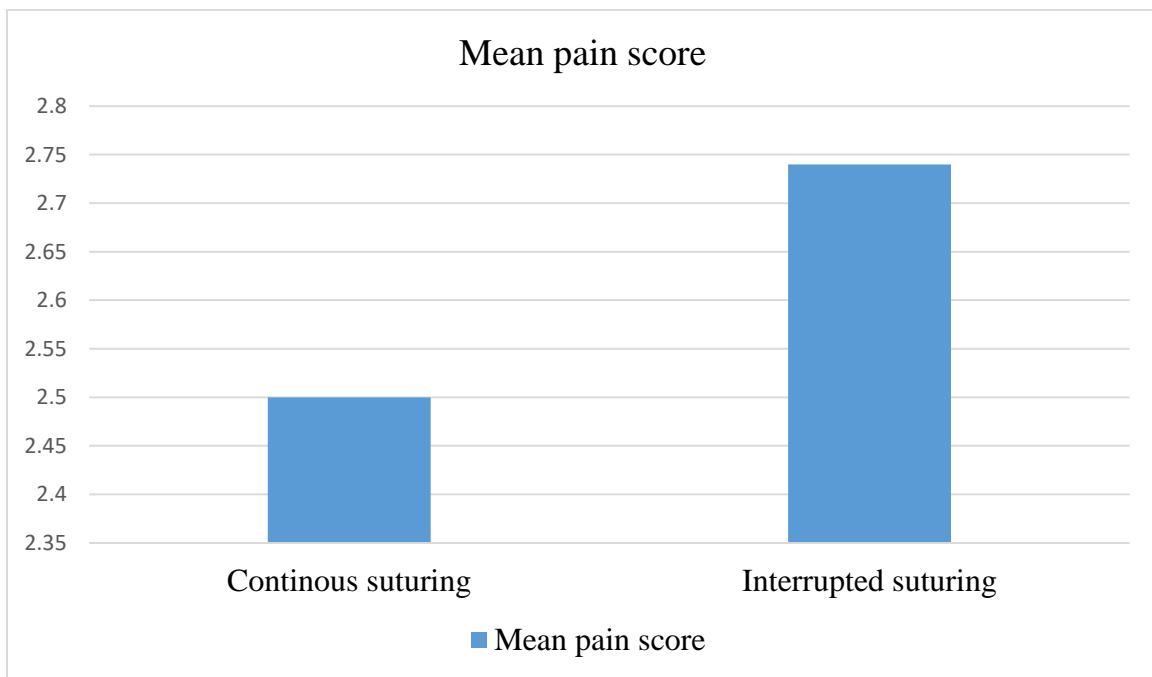


Figure 1: Distribution of mean pain score among two participant groups

Table 2: Comparison of outcome events between two groups

	Continuous (N=82)	Interrupted(N=78)	Z	p
Need analgesia	4(4.8%)	8(10.2%)	1.3	0.193
Infeccion	7(8.5%)	2(2.5%)	1.7	0.098
Antibiotics	7(8.5%)	2(2.5%)	1.7	0.098
Wound dehisions	6(7.3%)	2(2.5%)	1.4	0.149
Dyspareunea	8(9.7%)	10(12.8%)	0.6	0.534
Granuloma Formation	8(9.7%)	12(15.8%)	1.2	0.246
Patient Satisfaction	74(90.8%)	70(89.9%)	0.2	0.831

Discussion

When short term outcome is considered highest effectiveness is demonstrated by the continuous suturing technique. During this procedure patient experiences minimum amount of pain. It is essential to have the mother more comfortable, in order to provide proper care to the new born and continue breast feeding orderly and adequately. Therefore it is more beneficial to use a less painful method for post natal comfortability. Also when a less painful method is used need for analgesics is reduced and avoiding the adverse effects of these analgesics is another advantage.

But during the long term observation period it was noted that there is a higher tendency of infections with the continuous suturing technique. Therefore it is essential to pay more attention on wound care when

continuous suturing technique is used. On the other hand, study findings demonstrate that continuous suturing is not as stable as interrupted suturing. However during this study, application of sutures was done by a single person and it was not practical to asses his/her suturing techniques before commencing the study. It is possible to expect interrupted studying to persist longer with more strength than continuous suturing. However, study findings demonstrate that presence of dyspareunia and development of granuloma are more common with interrupted suturing. Study participants included into the study did not demonstrate a significant different in their age, BMI, POA and body weight. Therefore it is possible to expect minimum confounding effect in the study finding therefore it is observed that, continuous suturing technique is more beneficial to the patients and majority of the

participants prefer continuous suturing techniques. Prolonged time taken to apply the continuous suturing techniques is identified as the most common obstacle to practice this technique more frequently. It is not practicable to use this technique with the heavy work load at the Sri Lankan labour room set up as well. However recruiting well trained individuals for this procedure could be useful to overcome the obstacle more successfully.

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Conclusions

Continuous suturing technique can be used as a more cost effective technique for episiotomy suturing. Making awareness among labor room working staff and providing hand skill training for the staff members regarding continues suturing techniques appears to be more beneficial.

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