Original Research Article

Comparative study of continuous versus interrupted sutures for the repair of episiotomy in tertiary care centre

Anand Tambat[1*], Bhagyashree Badade[2], Sayli Thavare[3]

[1]Associate Professor, [2,3]Junior Resident, Department of Obstetrics and Gynecology, ACPM Medical College, Dhule, INDIA.
Email: anandrtambat@gmail.com

Abstract

Background: Episiotomy is a surgically planned incision on the perineum and posterior vaginal wall to prevent perineal injuries and facilitate and accelerate the second stage of labor. **Aims and Objectives:** To compare continuous versus interrupted sutures for the repair of episiotomy, with the aim of time required, number of suture material used, amount of blood loss, post-partum perineal pain, wound infection and need for resuturing. **Method:** This Prospective comparative study was conducted in the Department of Obstetrics and Gynecology at JMF's ACPM Medical College, Dhule. 200 pregnant females in labour, fulfilling the inclusion criteria, getting admitted in labour room of JMF's ACPM Medical College, delivering singleton fetus, who had experienced a perineal injury during delivery (second-degree tear or episiotomy) were included. Two groups of participants were made and patients fulfilling inclusion and exclusion criteria were allocated into one of the two groups A (interrupted) and B (continuous) randomly. Group A: included 100 females on whom interrupted method of episiotomy stitching was employed. Group B: included 100 females on whom continuous method of episiotomy stitching was employed. The women were blinded to the suture technique used. **Results:** Continuous suturing for the repair of episiotomy is better than interrupted suturing in terms of lesser pain at 6 hours and 7-10th day post-partum, lesser time for repair, less number of packets of suture material as compared to interrupted group. Conclusion: Our study revealed that continuous suture technique of perineal closure is associated with less pain and lesser time for repair. In addition, it also has economical advantage that the continuous technique requires less number of suture material compared to interrupted method. Therefore, we recommend continuous suturing technique for repair of episiotomy.
Keywords: Episiotomy, Continuous suture, Interrupted suture, Post-partum pain

[*]**Address for Correspondence:**
Dr Anand Tambat Associate Professor, Department of Obstetrics and Gynecology, ACPM Medical College, Dhule, INDIA.
Email: anandrtambat@gmail.com
Received Date: 02/05/2021 Revised Date: 12/06/2021 Accepted Date: 07/07/2021
DOI: https://doi.org/10.26611/10121933

Access this article online	
Quick Response Code:	Website: www.medpulse.in
	Accessed Date: 12 September 2021

INTRODUCTION

Evolution is a significant truth of existence, so whatever methods or techniques of surgery are developed, evolve over time.[1] Episiotomy is a surgically planned incision on the perineum and posterior vaginal wall to prevent perineal injuries and facilitate and accelerate the second stage of labor. It is derived from the Greek word "epision" meaning pudenda and "tom" meaning to cut.[2] It is one of the most common surgical procedures on women. The first recorded episiotomy occurred in Scotland in 1740s.[1] Joseph Delee was the first person to suggest routine episiotomy for all primiparous women and most multiparous women. His suggestion influenced the science of midwifery for 60 years. Global prevalence of this surgery has been reported as 30-90% of all vaginal deliveries.[3] During childbirth perineal trauma may occur, either spontaneously or after episiotomy. These injuries result in both short-term and long-term morbidity, with possible effects on the pelvic floor, causing perineal pain.[4] It imposes extra pressure on mothers who attempt to adapt to their new conditions. It

How to cite this article: Anand Tambat, Bhagyashree Badade, Sayli Thavare. Comparative study of continuous versus interrupted sutures for the repair of episiotomy in tertiary care centre. *MedPulse International Journal of Gynaecology.* September 2021; 19(3): 58-62. http://medpulse.in/Gynacology/index.php

even influences the relation between the mother and the infant.[3] Hence, episiotomy is reserved for cases where perineum is likely to be torn, rigid perineum, complicated childbirths, good size baby and assisted deliveries. In practice medio-lateral episiotomy is preferred over median for fear of extension into the anal sphincter complex.[2] Different suture techniques exist, with the most used technique being the interrupted suture closing the skin with separate stitches. In contrast, the continuous suture consists of joining all the tissue layers involved in the perineal lesion with the same suture thread in a continuous manner. The use of one or another technique in the repair of perineal trauma can prevent morbidity and discomfort to women in the postpartum period.[4] Despite the importance of finding the best strategies to provide effective prenatal care and reduce postpartum complications, limited studies with contradictory results have been performed in this field. 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.[5] Therefore, we were determined to compare the two episiotomy repair methods in women who were referred to educational-treatment centers in Dhule. We then tried to present the best method of episiotomy repair with the least complications for mothers.[3] Maternal pain relief and helping mothers in taking appropriate care of their infants are completely essential. Hence, we are of the view that the best technique for episiotomy repair would be that which requires less time to perform, require less amount of suture material, that which produces less pain in short and long term, requiring less of a need to remove the suture and a low frequency of resuturing.[6]

MATERIAL AND METHOD

This Prospective comparative study was conducted in the Department of Obstetrics and Gynecology at JMF's ACPM Medical College, Dhule. 200 pregnant females in labour, fulfilling the inclusion criteria, getting admitted in labour room of JMF's ACPM Medical College, delivering singleton fetus, who had experienced a perineal injury during delivery (second-degree tear or episiotomy) were included. This study was conducted over a period of 6 month from December 2020 to June 2021. Approval from the Institutional Ethical Committee was obtained. Informed written consent of all pregnant women was taken. Two groups of participants were made and patients fulfilling inclusion and exclusion criteria were allocated into one of the two groups A (interrupted) and B (continuous) randomly. Group A: included 100 females on whom interrupted method of episiotomy stitching was employed. Group B: included 100 females on whom continuous method of episiotomy stitching was employed. The women were blinded to the suture technique used. The threads used for stitching were identical in both groups. The records of 200 subjects wass ascertained. Information was gathered by interviewing the women in the delivery room. The rest of the data was obtained from the clinical history, maternal record book and via follow-up phone calls.

METHOD

Medio-lateral episiotomy: The suture material used in the study was CATGUT CHROMIC (Absorbable sterilised atraumatic needled suture) No-1. Each patient received 1 gm of second generation cephalosporin during the second stage of labor. In all parturients, the area of episiotomy was numbed using 5 cc of lidocaine 2% at the time of crowning on slow withdrawal protecting the fetal head during the procedure. The index and middle fingers was placed into the vagina between the fetal head and the perineum. An incision was given at the posterior fourchette and was continued downward at an angle of at least 45° relative to the perineal body and it was made just before delivery of the fetal head at the time when the perineum was thinned and stretched. The angle of the incision was 90° (perpendicular to the posterior fourchette). The incision was about four centimeters long. The Episiotomy in group A was done using the interrupted suture (IT) which involved placing three layers of sutures. A continuous interlocking stitch to close the vaginal epithelium was commenced above the apex of the wound and finished at the level of the fourchette. Three or four interrupted sutures were given to reapproximate the deep and superficial perineal muscles, and skin was closed with vertical mattress sutures. The Episiotomy in group B was done using the continuous knotless suturing technique (CKT) which involved placing the first stitch above the apex of vaginal trauma to secure any bleeding points that might not be visible. Vaginal wound, perineal muscles (deep and superficial), and skin were reapproximated by a loose, continuous, non-locking technique. Skin sutures were placed closely, fairly and deeply in the subcutaneous tissue; reversed back and finished with a terminal knot placed in the vagina beyond the hymeneal remnants. Immediately after repair of the perineum, the numbers of suture strands used were counted and the time taken for the repair was recorded. Pain severity and perineum repair rate was evaluated and all this information was entered in a pre-designed proforma, which was then analysed to compare the outcome of continuous method of episiotomy stitching with interrupted method of episiotomy repair following vaginal delivery. Outcome was determined in terms of presence or absence of pain. All patients were observed for 6 hours after delivery for need of analgesia and perineal pain which was measured by visual analogue scale. Visual analogue scale is usually a horizontal line 10 mm in length

anchored by word descriptors as: No pain- (0), mild pain-(1-3), moderate pain-(4-6), severe pain (7-10). Further, all the patients were asked to return for follow up after seven to ten days from delivery for wound healing and infection. Perineal repair rate was assessed using the REEDA (redness, edema, ecchymosis, discharge, and approximation) scoring scale. Since the same tools were used by Malekpoor *et al.* in 2009 and their reliability was confirmed, there was no need to reconsider their reliability.

Inclusion Criteria: In order to be included in the study the women should be in labour and episiotomy was indicated. All primiparous and multiparous women who have sustained an episiotomy or second-degree perineal tear and require stitching following a spontaneous vaginal delivery. Singleton pregnancy. Vertex presentation. Live baby. At term (37wks – 40wks). Age > 18 years. Subjected to medio-lateral episiotomy when perineal tears were imminent due to fetal macrosomia, congenital fetal malformations as (exophthalmos major, hydrocephalus, spinal cord teratoma, rigid perineum. Newborn weight between 2500 g and 4000 g.

Exclusion Criteria: Women who did not wish to participate or did not sign the informed consent. Delivery conducted outside the JMF's ACPM Medical College. Third degree and Fourth degree perineal tear. Cases of impaired immunity affecting wound healing such as (diabetes mellitus, patients receiving corticosteroids or immunosuppressant). Women with pre-existing medical disorders like heart disease, renal disease. High risk pregnancy as Hypertension, Anaemia with haemoglobin level < 9 g/dl or Coagulation abnormalities. Problems related to the pelvic floor prior to labor (prolapse, incontinence, vulva varices, etc.) Dyspareunia or sexual dysfunction. Hemorrhoids perceived as uncomfortable or painful. Postpartum hemorrhage. Breech delivery. Instrumental vaginal delivery. Other techniques of episiotomy. Patients who were developed traumatic injuries other than anal sphincter and rectal mucosal injuries, which were considered secondary outcomes. Obesity (BMI > 30).

RESULT

Table 1: Distribution of subjects according to Age

Age	Group A	Group B
18-21	31	30
22-25	40	36
26-29	22	24
30-33	6	7
>33	1	3

Table 2: Distribution of subjects according to Gravidity status

Parity	Group A	Group B
Primigravida	54	52
Multigravida	46	48

Table 3: Distribution according to presence of Pain and Need for analgesia at 6hrs and 7-10 days

	Group A(interrupted)		Group B(continuous)	
Presence of pain:	Yes	No	Yes	No
At 6 hrs	86	14	37	63
At 7-10 days	49	51	18	82
Need for analgesia:				
At 6 hrs	20	80	2	98
At 7-10 days	8	92	0	100

Table 4: Distribution of pain according to VAS score at 6hrs and 7-10 days

Severity of pain	Group A		Group B	
	At 6 hrs	At 7-10 days	At 6 hrs	At 7-10 days
0	14	51	63	82
1-3	22	15	24	16
4-6	44	26	11	2
7-10	20	8	2	0

Table 5: Comparison of REEDA scoring and need for resuturing based on type of episiotomy repair

	Group A	Group B
Redness	6	3
Oedema	11	6
Ecchymosis	8	5
Discharge	1	0
Approximation	97	99
Resuturing	3	1

Table 6: Comparison of time required in minutes for repair based on type of episiotomy repair

Time required for repair (in minutes)	Group A	Group B
15-17	4	18
18-20	9	54
21-23	49	16
24-26	14	7
>27	24	5

Table 7: Comparison of packets of suture material required based on type of episiotomy repair

Packets of suture material	Group A	Group B
1	85	98
2	15	2

Table 8: Comparison of amount of blood loss (in ml) based on type of episiotomy repair

Amount of blood loss (in ml)	Group A	Group B
200-250	44	40
>250	56	60

DISCUSSION

A total of 200 pregnant women were enrolled into the study and were randomly assigned into two groups; each included 100 women. The first group received interrupted suture technique while the second group received continuous suture technique for episiotomy repair. The subjects in both groups were similar with respect to mean age and gravidity. We ruled out any confounding factor that could influence the results. For this purpose, the skills of doctors suturing episiotomy and type of material used were the same. The only difference was suture technique. In the present study, on comparing the complaints of pain at 6 hours in interrupted and continuous suturing technique we found that, out of 100 women in Group A, 86 had complaints of pain whereas out of 100 women in Group B only 37 had complaints of pain. Persistence of pain at 7-10th day was found to be slightly higher in interrupted group (49 subjects) as compared to continuous group (18 subjects). The results of this research showed that the severity of pain (VAS score >3) at 6 hours was more in group A (64 subjects) as compared to group B (13 subjects). Also the need for analgesia at 6 hours was more in group A (20 subjects) as compared to group B (2 subjects). On reassessing the patients for the severity of pain on 7-10th day it was found that 34 subjects in group A complained of severe pain compared to only 2 patients in group B. Also no patients in group B required analgesia compared to 8 patients in group A, who required analgesia at 7-10th day. Kettle *et al.*, carried out a trial comparing the two techniques of episiotomy repair using two suture materials and found that less pain was experiences with continuous suture technique.[7] A meta-analysis reported in Cochrane database 2008 also claimed less pain upto 10 days postpartum and even greater reduction in pain when continuous suturing technique was used for all layers. In the present study, there was no significant difference in the presence of redness, ecchymosis or oedema postoperatively with either suture techniques. Also, there was not much difference in terms of amount of blood loss in both groups. In current study, amongst 100 patients in group A 97 had good approximation whereas 3 patients required resuturing compared to 100 patients in group B out of whom 99 patients had good approximation and only one required resuturing. One patient from group A had complaints of discharge from suture site. Concerning time needed for episiotomy suturing current study showed that there was significant difference between the two techniques under which continuous group needed less time in minutes for suturing while interrupted group consumed more time. The results of the present study also agreed with Kokanali *et al.*[8]. Perveen and Shabbir who reported that continuous technique needed less time for repair than interrupted one.[9]Furthermore, we found 85% of patients required one packet of suture material and 15% required 2 packets in interrupted group while 98% required one packet and 2% required 2 packets in continuous group. The

findings are similar to the study by Valenzuela *et al.* who reported that continuous technique needed less suture material than interrupted one[10].

CONCLUSION

Thus in conclusion, our study revealed that continuous suture technique of perineal closure is associated with less pain and lesser time for repair. In addition, it also has economical advantage that the continuous technique requires less number of suture material compared to interrupted method. Therefore, we recommend continuous suturing technique for repair of episiotomy.

REFRENCES

1. Jena L, Kanungo S. A comparative study of continuous versus interrupted suturing for repair of episiotomy or second degree perineal tear. Int J Reprod Contracept Obstet Gynecol 2015;4:52-5.
2. Garag S, Chandana Murthy SR, Naveen SB. Comparison between two layer and three layer repair of episiotomy. Int J Reprod Contracept Obstet Gynecol 2016;5:140-2.
3. Hasanpoor S, Bani S, Shahgole R, Gojazadeh M. The effects of continuous and interrupted episiotomy reIOTpair on pain severity and rate of perineal repair: a controlled randomized clinical trial. J Caring Sci. 2012 Aug 25;1(3):165-71.
4. Martínez-Galiano, J.M., Arredondo-López, B., Molina-Garcia, L. *et al.* Continuous versus discontinuous suture in perineal injuries produced during delivery in primiparous women: a randomized controlled trial. *BMC Pregnancy Childbirth* 19, 499 (2019).
5. Maged Ramadan Abu Seada, Tamer Farouk Borg, Mohammed Mahmoud Samy, Aliaa Abdelrazek Mohamed. Continuous versus Interrupted Suturing in Repair of Lateral and Mediolateral Episiotomy: A Randomized Controlled Trial. The Egyptian Journal of Hospital Medicine (April 2018) Vol. 71 (3), Page 2667-2680
6. Rubina Iqbal, Ayesha Intsar, Samina Khursheed, Shehneela Zafar. Outcome of Continuous Versus Interrupted Method of Episiotomy Stitching. P J M H S VOL .6 NO.3 JUL – SEP 2012 759-762
7. Kettle C, Hills RK, Jones P, Darby L, Gray R, Johanson R. Continuous versus interrupted perineal repair with standard or rapidly absorbed sutures after spontaneous vaginal birth: a randomised controlled trial. Lancet. 2002 Jun 29;359(9325):2217-23.
8. Kokanalı D, Ugur M, Kuntay Kokanalı M, Karayalcın R, Tonguc E.Continuous versus interrupted episiotomy repair with monofilament or multifilament absorbed suture materials: a randomised controlled trial. Arch Gynecol Obstet 2011; 284(2):275-80
9. Perveen F , Shabbir T. Perineal repair: comparison of suture materials and suturing techniques. J Surg Pakistan 2009; 14 (1); 23-8.
10. Valenzuela P, Saiz Puente MS, Valero JL, Azorín R, Ortega R, Guijarro R Continuous versus interrupted sutures for repair of episiotomy or second degree perineal tears: a randomized controlled trial. JOG.2009; 116(3):436-441.

Source of Support: None Declared
Conflict of Interest: None Declared