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ORIGINAL RESEARCH

Comparison of continuous versus interrupted suturing technique for repair of episiotomy

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ABSTRACT

Episiotomy is an incision of perineal body to prevent perineum injuries and facilitate and accelerate the second stage of labour. In the majority of childbirths, damage to the perineum is likely to occur to a greater or lesser degree if adequate protection to area is not provided at the moment the baby's head is delivered and if extraction of the shoulders is not appropriately performed. Performing an episiotomy is generally reserved for complicated

childbirths, in case of fetal distress, or when tearing of tissues with serious consequences is foreseen. After obtaining approval & clearance from Institutional Ethics Committee, a study was conducted on the patients who were fulfilling the inclusion criteria. After explaining the need for the study, informed and written consent was taken from the patient. The consent was taken in a predesigned proforma and each patient was Randomly allocated into two groups Group A categorized as the Continuous non locking technique and Group B categorized as Interrupted technique. Suture material used in both the groups was the same i.e. rapidly absorbable Vicryl Rapid No 1.

In our present study conducted among 124 patients, maximal patients are between 21-25 years and are primigravida. There was significant statistical difference between the two groups in terms of number of suture material used, and pain. Patients having interrupted suturing had taken significantly high analgesic tablets (p<0.05). There was no significant association between patients undergoing continuous suturing, and interrupted suturing, in terms of wound healing which was assessed by REEDA score, maximum patients had no redness, no edema, no ecchymosis And Nil patients with discharge and Ecchymosis.

Key words: Continuous, interrupted suturing technique, repair of episiotomy

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INTRODUCTION

Perineal trauma is the most commonly encountered surgery in the day-to- day practice of an obstetrician. It can be either a spontaneous tear or a surgical (episiotomy) enlargement of the pelvic soft tissue outlet during the second stage of labor or delivery. The first surgical opening of the perineum in order to prevent severe perineal tear was suggested by Ould, in 1741. However, the first publication in a medical journal about episiotomy was only in 18101.

Prevalence of the episiotomy varies around the world depending on whether its use as a routine or as confined procedure. Rates vary from 8% in the Netherlands, 13% in England to 25% in USA. In developing countries like India, the rates are still higher, since the use of restricted episiotomy is not being rehearsed extensively in Primigravida. Although the Cochrane Database Review has now

recommended the practice of restrictive episiotomy, routine use of it still continues in most of our maternity units1. Prevalence rate of 54.9% and 99% have been reported in West African countries and East European countries respectively ¹.

Perineal trauma affects the physical, mental and social well-being of the mother in her puerperium. A large proportion of women suffer short term perineal pain and up to 20% have long term problems like dyspareunia². Other complications involve removal of retained suture material, wound dehiscence and resuturing ³.

An episiotomy is a medically planned incision done on the perineum that straightens the pelvic canal to make delivery easier and lowers the soft tissue resistance of the outflow ^{4, 5}. The extent and degree of morbidity suffered by women are significantly impacted in the short-and long-term by the suturing technique used to treat perineal damage after childbirth. It has been suggested in the literature that continuous non-locking suture procedures are considerably superior to the conventional interrupted methods for repairing the vagina, perineal muscle, and skin in terms of reducing postpartum discomfort, but the continuous method is still not widely used ⁶.

Episiotomies are currently on the decline, but the actual figure performed varies greatly depending on the demographic. Despite this, healing of the perineum is still a common problem during childbirth that can lead to maternal morbidity in a significant number of women. The majority of women only have brief pain as a result of the perineal repair process after giving birth, while some continue to experience long-term issues, like sexual discomfort ^{6, 7}.

The short-term side effects include haemorrhage, Para genital hematoma development, perineal discomfort, and sepsis. Long-term side effects include dyspareunia and incontinence of faeces and flatus. In addition to the severity of the injury, surgical competence, material choice, the type of suture used for postpartum perineal repair can significantly affect the severity and length of morbidity that women experience ⁸.

The ideal procedure for perineal restoration would be one that takes less time to complete, uses fewer materials, and results in less pain over the course of time. There is evidence that continuous suture procedures, such as those used to close perineal skin, are less painful and need less suture material than interrupted stitches when used to approximate seconddegree lacerations and episiotomies⁸.

METHODOLOGY

TYPE OF STUDY

The present study was a randomized control study.

DURATION OF STUDY

The study was carried out for a period of 18 months.

SAMPLE SIZE

The study was conducted on 124 subjects divided into two groups.

INCLUSION CRITERIA

Patients meeting the following criteria were enrolled into the study. Patients with singleton pregnancy with vertex presentation.

Patients with vaginal childbirth with or without

instrumentation. Patients with all term pregnancies.

EXCLUSION CRITERIA

Patients meeting the following criteria were excluded from the study. Patients with preterm pregnancy.

Patients with malpresentation. Patients with multiple gestation.

Patients with severe anaemia, Gestational Diabetes Mellitus, vulval oedema. Patients with previous history of episiotomy gaping or perineal infection.

Patients who did not wish to participate or do not give consent.

EQUIPMENT NEEDED

Our study required the following equipment: 5-10 ml of 2% Lignocaine.

Rapidly absorbable Vicryl Rapid No 1. Suture material. Tab. Paracetamol 500 mg.

INFORMED CONSENT

All the patients fulfilling selection criteria were explained about the details of the procedure, options of treatment, ultimate outcome, possible effects, and complications in both procedure and a written informed consent was obtained before enrolment. They were informed of their right to withdraw from the study at any stage.

The patients admitted to Labour Room, VIMS & RC who delivered vaginally with an episiotomy were screened and those meeting inclusion criteria were enrolled into the study.

The patients were explained the study procedure and a written informed consent was obtained.

Prior to delivery, patients were randomly allocated into two groups-Groups A and Group B. Group A were the patients with continuous non-locking technique.

Group B were patients with interrupted technique of episiotomy. All women were subjected to-History taking: history was taken from all women-Personal history, complaint, history of the present pregnancy, obstetric history and family history.

GENERAL EXAMINATION: Including vital data.

ABDOMINAL EXAMINATION: Palpation and auscultation of the foetal heart rate.

LOCAL PELVIC EXAMINATION: Per vaginal examination.

INVESTIGATIONS: Routine laboratory investigations and abdominal ultrasound.

RESULTS

Table 1: No. of s	Table 1: No. of suture materials used												
No. of suture	Continuous suturing		Interrupted suturing		Total		Chi square	n nalma					
materials used	F	%	F	%	F	%	statistic	p value					
1	62	100.00	20	32.26	96	77.42							
2	0	0.00	42	67.74	28	22.58	60.52	< 0.001					
Total	62	100.00	62	100.00	124	100.00							

In patients undergoing continuous suturing, most of patients 62(100%) 1 suture material.

patients 20(32.26%) 1 suture material is used, and in 42(67.74%) 2 suture materials were used.

In patients undergoing interrupted suturing, most of

Pain medication	Conti	nuous suturing	Inter	rupted suturing	Total		Chi gamana statistia					
(No. of analgesic tablets)	F	%	F	%	F	%	Chi square staustic	p value				
2-3	50	80.65	35	56.45	85	68.55						
4-5	8	12.90	19	30.65	27	21.77	9.46	0.01				
6-7	4	6.45	8	12.90	12	9.68	0.40	0.01				
Total	62	100.00	62	100.00	124	100.00						

Table 2: Pain medication

In patients undergoing continuous suturing, maximum patients 50(80.65%) had 2-3 analgesic tablets, 8(12.90%) had 4-5 tablets and 4(6.45%) had 6-7 analgesic tablets.

In patients undergoing interrupted suturing, maximum patients 35(56.45%) had 2-3 analgesic tablets, 19(30.65%) had 4-5 tablets and 8(12.90%) had 6-7

analgesic tablets.

Chi square test for association was done to compare between pain medication and type of suturing technique. It was found that, patients having interrupted suturing had taken significantly high analgesic tablets (p<0.05).

Table 3: Redness	wise comparison	of patients un	dergoing continuou	is and interrupte	d suturing technique

Redness	Con	tinuous suturing	Interrupted suturing			Fotal	Chi aquana statistia	n voluo
	F	%	F	%	F	%	Chi square statistic	p value
0	54	87.10	53	85.48	107	86.29		
1	5	8.06	5	8.06	10	8.06	0.15	0.02
2	3	4.84	4	6.45	7	5.65	0.15	0.95
Total	62	100.00	62	100.00	124	100.00		

In patients undergoing continuous suturing, maximum patients 54(87.10%) had no redness, 5(8.06%) had grade 1 redness and 3(4.84%) had grade 2 redness.

In patients undergoing interrupted suturing, maximum patients 53(85.48%) had no redness, 5(8.06%) had grade 1 redness and 4(6.45%) had grade 2 redness.

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Table 4.	- Edema	wise com	narison o	t natiente	s undergaing	confinitous	and inferru	nted sufuring	technique
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Edema	Con	tinuous suturing	Inte	rrupted suturing	J	Fotal	Chi squara statistia	n voluo
	F	%	F	%	F	%	Chi square statistic	p value
0	57	91.94	54	87.10	111	89.52		
1	3	4.84	5	8.06	8	6.45	0.78	0.68
2	2	3.23	3	4.84	5	4.03	0.78	0.08
Total	62	100.00	62	100.00	124	100.00		

In patients undergoing continuous suturing, maximum patients 57(91.94%) had no edema, 3(4.84%) had grade 1 edema and 2(3.23%) had grade 2 edema.

In patients undergoing interrupted suturing, maximum patients 54(87.10%) had no edema, 5(8.06%) had grade 1 edema and 3(4.84%) had grade 2 edema.

 Table 5: Ecchymosis wise comparison of patients undergoing continuous and interrupted suturing technique

	Continuous suturing		Interrupted suturing		Total		Chi aquana statistia	n voluo
Ecchymosis	F	%	F	%	F	%	Chi square statistic	p value
0	62	100.00	60	96.77	122	98.39		
1	0	0.00	2	3.23	2	1.61	2.03	0.15
Total	62	100.00	62	100.00	124	100.0		

In patients undergoing continuous suturing, all patients 62(100%) had no ecchymosis. In patients undergoing interrupted suturing, maximum patients 60(96.77%) had no ecchymosis and 2(3.23%) had grade 1 ecchymosis.

Discharge	C	ontinuous suturing	In	terrupted suturing	Total		
	F	%	F	%	F	%	
Nil	62	100.00	62	100.00	124	100.00	
Total	62	100.00	62	100.00	124	100.00	

 Table 6: Discharge wise comparison of patients undergoing continuous and interrupted suturing technique

Table 7: Approximation of wound comparison of patients undergoing continuous and interrupted suturing technique

Approximation	Со	ntinuous suturing	Int	errupted suturing	Total		
	F	%	F	%	F	%	
Nil	62	100.00	62	100.00	124	100.00	
Total	62	100.00	62	100.00	124	100.00	

Table 8: REEDA score wise comparison of patients undergoing continuous and interrupted suturing technique

REEDA	Con	tinuous suturing	Interrupted suturing			Fotal	Chi squara statistia	n voluo
	F	%	F	%	F	%	Chi square statistic	p value
0	50	80.65	46	74.19	96	77.42		0.31
1-2	12	19.35	14	22.58	26	20.97	2.22	
3-4	0	0.00	2	3.23	2	1.61	2.32	
Total	62	100.00	62	100.00	124	100.00		

In patients undergoing continuous suturing, maximum patients 50(80.65%) had nil REEDA score, 12(19.35%) had 1-2 REEDA score and none 0(0%) had 3-4 REEDA score.

In patients undergoing interrupted suturing, maximum patients 46(74.19%) had nil REEDA score, 14(22.58%) had 1-2 REEDA score and 2(3.23%) had 3-4 REEDA score.

Table 9: Pain score

Dain coore	Continuous suturing		Inter	rupted suturing	Monn Whitney U statistic	n voluo
r ani score	Mean	Std. Deviation	Mean	Std. Deviation	Mann- whithey O statistic	p value
VAS on day 1	1.68	0.83	2.10	0.86	1356	0.002
VAS on day 5	0.66	0.77	1.03	0.83	1425	0.007
VAS on day 14	0.15	0.44	0.52	0.67	1338.00	<0.001

Mann-Whitney U test was done to compare VAS score on day 1, day 5 and day 14 in patients undergoing continuous and interrupted suturing technique.

Table and figure 17 depicts that:

Mean VAS score on day 1 in patients who underwent continuous suturing was 1.68 and it was significantly smaller than mean VAS score in patients who underwent interrupted suturing 2.10 (p<0.05).

Mean VAS score on day 5 in patients who underwent continuous suturing was 1.68 and it was significantly smaller than mean VAS score in patients who underwent interrupted suturing 2.10 (p<0.05).

Mean VAS score on day 14 in patients who underwent continuous suturing was 0.15 and it was significantly smaller than mean VAS score in patients who underwent interrupted suturing 0.52 (p<0.05).

DISCUSSION

In patients undergoing continuous suturing, 50(80.65%) had 2-3 analgesic tablets, 8(12.90%)

had 4-5 tablets

and 4(6.45%) had 6-7 analgesic tablets.

In patients undergoing interrupted suturing, 35(56.45%) had 2-3 analgesic tablets, 19(30.65%) had 4-5 tablets

and 8(12.90%) had 6-7 analgesic tablets.

Chi square test for association was done to compare between pain medication and type of suturing technique. It was found that, patients having interrupted suturing had taken significantly high analgesic tablets (p<0.05).

The findings of this study in concordance with previous study done by Mahmoud Ahmed Ghareeb *et al.* ⁹. study showed that the numbers of patients who expressed pain in the interrupted suturing technique were more than whom in the continuous suturing technique with a highly significant difference between two groups with p value of .001282.

At this point our results agreed with results reported by Kokanalı *et al.* ¹⁰, they stated that there was a higher reduction in postpartum perineal pain with continuous suturing. Another study by Valenzuela *et al.* 74. Proclaimed that they found no statistically significant difference between both continuous and interrupted groups considering perineal pain.

There is no significant association between patients undergoing continuous suturing, and interrupted suturing, maximum patients had no redness, no edema, no ecchymosis and nil patients with discharge and Echymosis.

In regard to other complications of healing (REEDA score which includes Redness, Edema, Ecchymosis, Discharge, Approximation): our present study showed that In patients undergoing continuous suturing, maximum patients 50(80.65%) had nil REEDA score, and In patients undergoing interrupted suturing, maximum patients 46(74.19%) had nil REEDA score. This study have no significant different between the interrupted group and the continuous group our results agreed with results reported by Mahmoud Ahmed Ghareeb et al.⁹ in terms of REEDA score current results are in agreement with results of Samal et al. 67. They reported that in each group about three cases required resuturing. Kettle C et al. 11, in {Cochrane database systematic reviews metaanalysis}, stated that risk of resuturing was indifferent in both groups. With respect to wound infection the results of the present Study coincide with those of Kettle et al. 11. Who mentioned no significant differences in their study groups regarding wound In patients undergoing continuous suturing, maximum patients 30(48.39%) had VAS score of 1, and in interrupted suturing, maximum patient 33(53.23%) had score 2, on day 1. Chi square test for association was done and was found that, patients having interrupted suturing had significantly higher VAS score (p < 0.05).

In patients undergoing continuous suturing, maximum patients 30(48.39%) had VAS score of 0, and interrupted suturing, maximum patients 32(51.61%) had score 1, on day 5.

Chi square test for association was found that, patients having interrupted suturing had significantly higher VAS score (p<0.05).

In patients undergoing continuous suturing, maximum patients 55(88.71%) had VAS score 0 and in interrupted suturing, 36(58.06%) had VAS score of 0, on day 14.

Chi square test for association was found that, patients having interrupted suturing had significantly higher VAS score (p<0.05).

Mann-Whitney U test was done to compare VAS score on day 1, day 5 and day 14 in patients undergoing continuous and interrupted suturing technique. Mean VAS score on day 1 in patients who underwent continuous suturing was 1.68 and it was significantly smaller than mean VAS score in patients who underwent interrupted suturing 2.10 (p<0.05)¹².

Mean VAS score on day 14 in patients who underwent continuous suturing was 0.15 and it was significantly smaller than mean VAS score in patients who underwent interrupted suturing 0.52 (p<0.05). Our study agreed with study conducted by Mahmoud Ahmed Ghareeb *et al.*⁹. they stated at 6 hours post-delivery and 12 hours and 7 days post-delivery there is a significant association (p<0.05).

CONCLUSION

We observed in this study that the continuous suturing technique of episiotomy is considered better than interrupted suturing technique as it takes lesser number of suture material, less perineal pain and requirement of analgesics is concerned.

There was no significant association between patients undergoing continuous suturing, and interrupted suturing, in terms of wound healing which was assessed by REEDA score.

Hence, we conclude that the continuous method of suturing episiotomy is better and ideal in terms of perineal pain and need of analgesics for episiotomy wound than the interrupted method of suturing of episiotomy.

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