Original Article

Comparison of Safety Between Intra-Dermal Versus Conventional Closure During Episiotomy in Terms of Complications

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Abstract

Objective: The study aimed to compare intra-dermal and conventional closure of the episiotomy in terms of complications.
Methodology: A randomized controlled trial study was conducted at the Department of Obstetrics and Gynecology, RIHS, Islamabad, from January 2019 to December 2019. A total of 162 women were randomly assigned to receive either intradermal closure or conventional closure during episiotomy. The frequency of wound dehiscence and perineal pain was compared between the two groups using the chi-square test. Wound dehiscence and perineal pain were compared by a chi-square test between both groups at the level of significance of 0.05. A p-value equal to or less than 0.05 was considered statistically significant.
Results: The average age in group A (Intradermal closure) was 28.2 ± 4.8 years and in group B (Conventional closure) it was 27.9 ± 5.1. The overall mean gestational age was 39.23 ± 2.05 weeks. Wound dehiscence was present in 7.4% of cases in group A, and in 27.2% of patients in group B (p = 0.001). Perineal pain was reported in 6.2% of patients in group A compared to 30.9% of group B patients (p= 0.001).
Conclusion: Intradermal closure was associated with fewer complications of wound dehiscence and perineal pain than conventional closure during episiotomy in women undergoing vaginal delivery.
Keywords: Conventional closure, Episiotomy, Intradermal closure, Postpartum complications.

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Introduction

Episiotomy is a commonly used incision through the perineum made to enlarge the diameter of the introitus and to avoid perineal injuries during the second stage of labour. [1,2] The purpose is to adopt a more effective surgical modality that is associated with fewer complications and morbidities, which will help to decrease patients' sufferings in postpartum period. It can be median or Medio lateral and was introduced as a prophylactic measure to prevent perineal tears.[3] In many countries, episiotomy is a routine surgical procedure at childbirth[4] compared to Australia (17%) and the United States (25%). [5,6]

Despite randomised controlled trials that indicate selective episiotomy (where medically recommended) has benefits for mothers, high rates still exist in South Asian nations. Both methods result in comparable infant outcomes. The lack of training, cultural and traditional variances, physiological differences between Asian and Caucasian women, and fear of severe perineal injury are the causes of the high episiotomy rates in Southeast Asian nations.[7] Several years of routine episiotomy on all Primigravidas, countries such as the United Kingdom to advocate against routine episiotomy on all Primigravidas.

According to the Argentine episiotomy trial and many others, the episiotomy rates for primigravida should not exceed 40% and for multigravidas above 30%.[8]

A study conducted in Bangladesh has shown that episiotomy wound pain at 48 hours was 82% in patients

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with conventional closure and 78% in intradermal episiotomy group. Furthermore, they noticed wound dehiscence in 28% versus 6%, perineal discomfort in 26% versus 10%, and perineal pain in 24% versus 8% in conventional closure and intradermal groups respectively.[9]

The rationale of the current study was to adopt a more effective surgical modality that is associated with fewer complications and morbidities that will help to improve the quality of life of patients. The aim of this study was to compare intra-dermal and conventional closure of the episiotomy in terms of complications.

Methodology

This randomized controlled trial was conducted in the Department of obstetrics and gynecology, Rawal Institute of Health Sciences, Islamabad. A total of 162 patients were randomly assigned to receive either intra-dermal (n=81) or conventional closure (n=81) of the episiotomy. The study was conducted between January 2019 to December 2019. It was hypothesized that conventional closure of episiotomy has more complications as compared with intra-dermal closure.

The complications were measured in terms of wound dehiscence and perineal pain. Wound dehiscence was defined as disruption of a surgical wound more than 1 cm within 30 days of the procedure. Perineal pain was defined as moderate to severe pain at 48 hours, checked on a visual analogue scale of 0-10 where 0 was considered as having no pain while 10 represented the worst possible pain.[18] Obesity was considered if a patient had BMI of over 27.5 (30) kg/m^2 in accordance with the WHO recommendation for Asian populations.[19]

Both primigravida and multigravida women with episiotomy having age ranging from 20 – 40 years, having a gestational age of more than 37 weeks at the time of delivery were included in the study.

Women with known diabetes mellitus, hypertension, and those with twin pregnancies (diagnosed on ultrasound) were excluded. Patients with a history of jaundice, bleeding disorders, malignancy, and haematological disorders were also excluded from the study.

Ethical approval was taken from the Institutional Ethical Committee to conduct this study. Each patient's written informed consent was obtained before inclusion. The Department of Gynecology and Obstetrics at Rawal Institute of Health Sciences in Islamabad selected women who satisfied the study's eligibility requirements. A detailed history and physical examination was conducted.

Patients were divided into 2 groups by lottery draws method and they were given pre-coded sealed envelopes marked as A and B. Those who pick envelope coded with A were placed in group A while those who picked an envelope coded with B were placed in group B. Group A underwent intra-dermal closure by vicryl (2–0) while group B was managed by conventional closure of episiotomy by suturing with vicryl (2–0). The procedure was performed under the supervision of a specialist gynaecologist with more than 5 years of experience after fellowship. The study cases were followed for 30 days, first visit was after 7 days to document complications of wound dehiscence and perineal pain. All study findings were entered on a pre-designed structured proforma by the researcher herself. Data were analyzed using SPSS Version 22.0. Mean and standard deviation was measured for numerical variables like age, gestational age, and BMI. Frequencies and percentages were tabulated for qualitative variables like residential status, parity, gravidity, wound dehiscence, perineal pain, obesity, and age groups. Wound dehiscence and perineal pain were compared by chi-square test between both groups at the level of significance of 0.05. A p-value equal to or less than 0.05 was considered statistically significant.

Results

The overall mean age of study patients was 28.07 ± 4.89 years and the majority of women (104, 64.2%) were aged between 20 and 30 years. The average age in group A was 28.2 ± 4.8 years whereas in group B it was 27.9 ± 5.1. The overall mean gestational age was 39.23 ± 2.05 weeks. In group A, the average gestational age was 39.1 ± 2.05 weeks compared to 38.9 ± 2.2 in group B.

Of the total 162 cases, 71 (43.8%) belonged to rural areas and 91 (56.2 %) belonged to urban areas. The mean parity was 2.48 ± 1.07 and the mean gravidity was 2.85 ± 1.21. The mean BMI was 25.23 ± 2.11 kg/m2 while obesity was found in 34 (21.0 %) of the study cases. The demographic characteristics were found to be comparable between both groups. (Table I)

Wound dehiscence was present in 7.4% of patients in group A while it was present in 27.2% of patients in group B (p = < 0.001). Perineal pain was found in 6.2% of patients in group A compared to 30.9% of patients in group B (p = < 0.001). (Table II) When stratified by age,

residential status, parity, gravidity, and obesity, the difference in wound dehiscence and perineal pain was found to be similar between both groups.

Table I: Distribution of demographic and gestational characteristics in the two groups. (n=81)

	Group A	Group B
Age (years)		
Up to 30 years	50 (61.7%)	54 (66.7%)
More than 30 Years	31 (38.3%)	27 (33.3%)
Residence		
Rural	33 (40.7%)	38 (46.9%)
Urban	48 (59.3%)	43 (53.1%)
Parity		
Up to 3	68 (84.0%)	66 (81.5%)
More than 3	13 (16.0%	15 (18.5%)
Gravidity		
Up to 4	58 (71.6%)	60 (74.1%)
More than 4	23 (28.4%)	21 (25.9%)
Obesity		
Yes	16 (19.8%)	18 (22.2%)
No	65 (80.2%)	63 (77.8%)

Table II: Comparison of complications between study groups. (n=81)

	Group A	Group B	P-value
Wound Dehiscence			
Yes	06 (7.4%)	22 (27.2%)	<0.001
No	75 (92.6%)	59 (72.8%)	
Perineal pain			
Yes	05 (6.2%)	25 (30.9%)	<0.001
No	76 (93.8%)	56 (69.1%)	

Discussion

This study highlights significantly less complications with intradermal incision compared to conventional closure in women undergoing episiotomy. A recent study done by Choudhary F and colleagues documented wound dehiscence in 28% of cases of conventional closure versus 6% with intradermal closure. Similarly, perineal pain was witnessed by 24% of patients in conventional closure versus 8% in the intradermal group.[9] These findings are found comparable with the current study findings.

There is an increased risk of injuries to the perineum during second stage of labor. Episiotomy is an incision to the perineal body to prevent these injuries and accelerate the process of labor. It is one of the most frequent surgical operations performed on women, with regional differences in prevalence. The idea of routine episiotomies for all primiparous women and the majority of multiparous women was first proposed by Joseph Delee. For 60 years, the science of midwifery was affected by his suggestion. [10] According to reports, this treatment accounts for 30 to 90% of all vaginal births worldwide. [11,12 13]

According to a number of scholars, continuous sutures are less painful than interrupted ones when used to repair the muscles and skin of the vagina and the perineum. According to a study conducted in Turkey, the continuous approach results in quicker perineum healing and reduced pain soon after delivery. The method also proved to be cost effective due to reduced suture usage.[12]

We were unable to find a study on comparison of intradermal closure with conventional closure in cases of episiotomy. A study by Zafar S et al, conducted in Islamabad, Pakistan, reported that the intradermal single knot was better than the conventional method and was associated with a low pain (VAS) scale in the postpartum period.[14]

Interventions like low level laser therapy other than conventional technique are more effective and incur less complications for patients in the postpartum period. In this regard, Santos et al[15] reported that low level laser therapy (LLLT) provided to experimental group was associated with a reduction in perineal pain mean scores. However, it has no role in early episiotomy healing.

Perineal surgery increases the pain and discomfort and impairs the quality of life during postpartum period. It even disturbs the relationship between the mother and the infant.[16]

Although there are numerous procedures for closing the episiotomy incision, hemostasis and restoration of the anatomical structure of the incision site without the need of additional sutures are essential parts of success in these methods. In a study, women who had second-degree perineal lacerations or episiotomies were divided into two groups and randomly assigned to receive either continuous or interrupted techniques of treatment. Perineal pain was less in the continuous method group on the 2nd and 10th days and even until 12 months after delivery.[17]

Regarding the advantages of the current study, Firstly, this study enrolled a reasonable sample of women and very few studies are conducted in our country. Secondly, the study included participants from a different ages, BMI, socioeconomic status, and geographical areas in

both groups. Although this is a small study, random assignment was used to decrease any selection bias. No patients were lost to follow up which increases the reliability of our findings. These strengths allow us to present our findings with a high degree of confidence.

Our study has a few limitations for example; this was a single center study, utilizing convenience sampling, so results may not be generalizable to all practice areas. The procedures were performed in an academic setting, and the expertise in performing the procedures may not be similar in other centers. Although a randomized trial, we were unable to do blinding which may have impacted results.

Conclusion

Our study results show that the use of intradermal closure of episiotomy is associated with fewer complications in terms of lower rates of wound dehiscence and perineal pain as compared to a conventional episiotomy. More studies are needed to show that intradermal closure to achieve desired outcomes, which will decrease related morbidities and also improve the quality of life of these patients.

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