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Comparison of Restrictive vs Routine Episiotomy and its Outcome in Tertiary Care Hospital

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ABSTRACT

Objective: To examine the differences and similarities in outcomes that occur when restrictive episiotomy and routine episiotomy are performed on first-time mothers who are giving birth vaginally at the same time.

Methods: For the purpose of determining the effects of employing a restrictive episiotomy approach in comparison to the standard application of episiotomy, a prospective cohort study was carried out. In order to establish two distinct cohorts, a total of one hundred women who were experiencing their first pregnancy and were presenting in the labor room with either spontaneous labor or labor that had been induced were recruited. The evaluations between two groups were carried out throughout the entirety of the labor process, immediately following the postpartum period, and on the very first day after the birth of the baby, and the data were tabulated and analyzed in a systematic manner.

Results: In the routine episiotomy group, 14% of primigravidae experienced vaginal and paraurethral tears, while the restrictive episiotomy group exhibited a slightly higher rate of 22.22%, with no statistically significant association observed. Perineal tears were observed in 15.55% of cases in the restrictive group, while episiotomy extension was observed in 26% of cases in the routine group. However, there was no statistically significant association between the occurrence of perineal tears and episiotomy extension. Due to the fact that 64.45% of patients in the restrictive group gave birth without any damage to the perineum, there was a significantly lower requirement for suturing in the restrictive group (20%) compared to the routine group (100%).

Conclusion: The results of this study provide substantial evidence suggesting that the immediate outcomes that follow the utilization of a routine episiotomy are not superior to those that are achieved through the utilization of a restrictive approach. Indeed, routinely employing episiotomy can have adverse effects, as it may subject certain women to surgical incisions and result in more harm than if they had experienced less injury.

Keywords: Restrictive Episiotomy, Routine Episiotomy, Vaginal Delivery, Episiotomy, Episiotomy Outcomes.

1. INTRODUCTION

Episiotomy, the surgical procedure involving an incision in the perineum during vaginal childbirth, has historically been a prevalent practice, particularly among primiparous women¹. The widespread use of this approach was based on the perceived benefits of replacing a complex laceration, which could be difficult to repair, with a simple surgical incision.

The concept of perineal incision for facilitating difficult deliveries dates back to the late 18th century when Sir Fielding Ould, a Dublin midwife, first mentioned it in 1799². Subsequent recommendations for midline and mediolateral incisions were made by Michaelis in 1799 and Dubois in 1847, respectively³. Initially regarded as a precautionary measure by obstetricians to safeguard the fetus, pelvic floor, and perineum from injuries associated with childbirth, routine episiotomy has gradually lost popularity in contemporary obstetrics.

Due to the emergence of evidence-based medicine, obstetricians now acknowledge that the potential hazards linked to maternal harm are more significant than the alleged advantages. Contrary to its initial intent of safeguarding the pelvis, routine episiotomy has been shown to increase blood loss, dyspareunia, anal incontinence, rectal damage, anal sphincter laceration, and postpartum perineal pain, with no discernible reduction in urinary incontinence or improvement in neonatal outcomes⁴.

Consequently, a shift towards a more judicious use of episiotomy has occurred, with a focus on limiting its application to high-risk cases, such as instances involving a vaginal breech, shoulder dystocia, short rigid perineum, instrumental deliveries, and face to pubis presentations. Implementing restrictive episiotomy policies has shown multiple benefits compared to routine episiotomy practices. These advantages include decreased posterior perineal trauma, reduced requirement for suturing, fewer complications, and no significant disparities in pain levels or severe vaginal/perineal trauma⁵. However, it is essential to recognize that when a restrictive

episiotomy is performed, there is a greater possibility of paraurethral and lateral/anterior vaginal injury. This is something that must be acknowledged.

An examination of the national hospital discharge data from the United States in the years 1999 and 2000 reveals that the incidence of episiotomy among women who gave birth vaginally was slightly higher than 35 percent and approximately 33 percent, respectively^{6,7}. Unfortunately, there is a lack of readily accessible data on the exact rates of episiotomy in institutional deliveries in Pakistan. A search that was carried out on MEDLINE resulted in the discovery of a single cross-sectional study that was carried out in 1993 by Bhatia JC and colleagues. The study reported an episiotomy rate of 23.5% in institutional deliveries⁸.

In the past, the majority of child births took place at home under the care of midwives prior to the 20th century. During this time, perineal lacerations were often left untreated. Hospitals accounted for less than 5% of deliveries during this period⁹. In contemporary obstetrics, given the adverse effects associated with routine episiotomy, such as healing complications, trauma, perineal pain, and neonatal outcomes, there is ongoing research and evaluation of the use of restrictive episiotomy for improved outcomes and reduced complications, including a fewer healing complications, reduced need for suturing, and lower incidence of posterior perineal trauma¹⁰.

2. METHODOLOGY

This study was conducted over a period from October 2023 to May 2024 at a teaching hospital, Gyn & Obs Department, Combined Military Hospital, Multan, Pakistan, that provides specialized medical care and education. Ethical approval was obtained from the Institutional Review Board of Combined Military Hospital, Multan (Approval No: 13/Trg/CMH Multan). Written informed consent was obtained from all participants. Sample size was calculated using WHO sample size calculator, considering a confidence level of 95%, power of 80%, and expected difference in maternal complications between groups based on previous studies.

Non-probability consecutive sampling techniques were used. Participants were allocated into groups based on the clinical practice approach (routine vs restrictive episiotomy) followed by the attending obstetrician. The study specifically focused on 100 women who were pregnant for the first time and were admitted to the labor room due to either spontaneous labor or induction of labor. The inclusion criteria consisted of a pregnancy with only one fetus and a pelvis that was deemed suitable for childbirth. The gestational age had to be between 37 and 41 weeks, the fetus had to be in a head-down position, and the estimated weight of the fetus had to be less than 3 kg. Patients requiring instrumental deliveries, perineal length less than 3 cm, and those with multiple gestation were not included in the study. A written informed consent form was required to be submitted by each and every patient before they could voluntarily participate.

At the time of crowning, the patients were enrolled, and two cohorts were formed based on the labor and delivery attendant's level of expertise in performing restrictive episiotomy. Cohort A included primigravidae who received standard episiotomy, whereas cohort B consisted of women who underwent limited episiotomy. The evaluations were carried out throughout the entirety of the labor process, immediately following the postpartum period, and on the very first day after the birth of the baby. It was carefully observed how the labor and delivery process was progressing.

Within the framework of the policy of routine or liberal episiotomy use (cohort A), episiotomy was performed on each and every patient who was a first-time mother. Conversely, when using a restrictive episiotomy (cohort B), a careful approach was taken. The study aimed to minimize negative effects on the health of both the mother and the fetus. In cohort B, an episiotomy was performed in specific situations: when the second stage of labor lasted for an excessively long time (≥ 2 hrs) and the perineum did not stretch properly, when there was a risk of more severe perineal tears, when the mother was exhausted or unable to push effectively, and when there were concerning patterns in the fetal heart rate.

A number of parameters was assessed, including the presence of perineal or vaginal tears or the requirement for suturing, the

extension of episiotomies and pain relief, the occurrence of wound complications, and the outcomes for neonates (in addition to admission to the neonatal intensive care unit, APGAR scores at one minute and five minutes are also taken into consideration). It was determined whether the mother and newborn were in good enough condition to be discharged from the hospital 24 hours after delivery or later. Subsequent follow-up appointments occurred during the standard postnatal visit six weeks after childbirth, and, if there were any complications, two weeks after being discharged. The data was processed and examined using SPSS version 24. The corresponding p-values were computed and the significance level was set at $p < 0.05$.

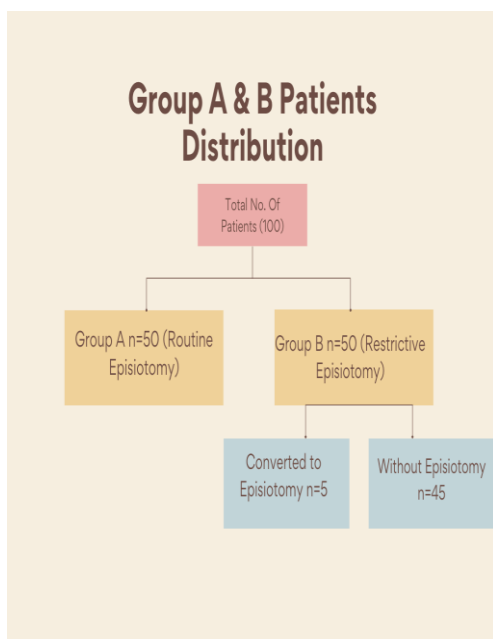
3. RESULTS

In this investigation, a total of 100 deliveries were scrutinized. Group A involved 50 cases where routine episiotomy was administered, while group B comprised 45 cases with restrictive episiotomy practiced; There were five instances in group B that required the implementation of episiotomy due to the presence of fetal heart patterns that were not reassuring and an extended second stage of labor. A 10% patient sample that did not initially belong to group A, but subsequently underwent a routine episiotomy was not included in either of the cohorts.

The overall subjects in the study were distributed as follows:

- Group A: 50 subjects
- Group B: 45 subjects

Fig-1



The two groups are compared in Table 1 with regard to the mother's age, the birth weight of the newborn, and the gestational age of the mother. Statistical analysis using the "Z" test revealed no significant differences in mean age, birth weight, or gestational age between the two groups. Group B (restrictive episiotomy) and group A (routine episiotomy) were compared with respect to perineal length, as illustrated in Table 1. Employing the Student's t-test allowed us to draw the conclusion that the two groups' average perineal lengths were not significantly different from one another.

Table-1: Demographics and study baseline study variables

Variable	Restrictive (n=45)	Routine (n=50)	P
Age (years)	23.2 ± 2.55	23.34 ± 2.96	0.805
Gestational Age (weeks)	38.53 ± 1.16	38.4 ± 1.19	0.583
Birth Weight (kg)	2.69 ± 0.29	2.76 ± 0.31	0.316
Perineal Length (cm)	3.48 ± 0.50	3.4 ± 0.11	0.255
Second Stage Duration (min)	70.07 ± 13.23	64.9 ± 13.78	0.066

On average, the second stage of labor took 64.90 minutes for Group A and 70.07 minutes for Group B. This is the second stage of labor, and Table 1 shows the average duration of it.

There was no statistically significant difference in the duration of the second stage of labor between the two groups, according to the results of the "Z" test. It would appear from this that the implementation of restrictive episiotomy did not result in an extension of this stage. Table 4 provides a comparison of the two groups with regard to the amount of paraurethral and lateral/anterior vaginal tears that were present. The results show that group A had a rate of 14% (n=7), while group B had a rate of 22.22% (n=10). The results of the Chi-square test showed that there was no statistically significant correlation between the mode of delivery and the presence of vaginal or paraurethral tears.

Furthermore, the analysis revealed that among the patients in group A, 26% (n=13) experienced the elongation of episiotomy without experiencing tears of the third or fourth degree. On the other hand, among the patients in group B, 15.55% (n=7) had perineal tears of the first and second degree. The results of the Chi-square test showed that the perineal tear was not significantly related to the delivery method.

Table 2: Group A & B Intrapartum Parameters Comparison

Parameters	Restrictive	Routine	p
Suturing	20% (09)	100% (50)	Nil
Extension of Episiotomy/Perineal Tear	15.5% (07)	26% (13)	0.2
Paraurethral Tear or Anterior/Lateral Vaginal Tear	22.2% (10)	14% (07)	0.29

Table 3: Group A & B Analgesia Need and Healing Complications Comparison

Variables	Restrictive	Routine	p
Healing Complications	2.22% (1)	6% (3)	0.68
Analgesia Need	22.22% (10)	50% (25)	0.005

Table 5: Group A & B Neonatal Outcomes And Hospital Stay Comparison

Variables	Restrictive	Routine	P
> 24 Hours	5	5	
< 24 Hours	40	45	0.874
Hospital Stay	45	50	
NICU Hospitalisation	8.88% (4)	6% (3)	0.88

Table 3 provides specific information about the need for pain relief medication in the period immediately after childbirth. In the restrictive group, 10 individuals, accounting for 22.22% of the total, required analgesia. In contrast, in the routine group, 25 individuals, making up 50% of the total, needed analgesia. The Chi-square test revealed a statistically significant correlation between the need for pain relief and the method of childbirth, indicating a lower occurrence of perineal pain after delivery in the group with more restrictions.

Regarding complications, the routine group exhibited a higher complication rate (6%), including wound inflammation (n=2) and hematoma formation (n=1). Statistical analysis using the Fisher exact test revealed no association between delivery method and the incidence of healing complications.

In Table 4, we can see the APGAR scores at one and five minutes. Statistical analysis using Fisher exact tests shows that the APGAR scores are not significantly related to the various delivery methods. Table 5 provides a summary of the neonatal results, indicating that there were a total of 7 admissions to the Neonatal Intensive Care Unit (NICU), with 3 admissions in group A and 4 admissions in group B. These admissions were primarily due to factors such as low birth weight, low APGAR scores, and the presence of meconium-stained liquor. Fisher exact tests indicated no statistically significant differences in NICU admission between the two delivery methods.

4. DISCUSSION

The aim of this study was to compare the incidence of complications resulting from standard and limited episiotomy in first-time pregnant patients. A total of 100 cases were chosen, with 50 undergoing standard episiotomy in cohort A and 45 experiencing

Table 4: APGAR Scores Comparison

		Restrictive Episiotomy	Routine Episiotomy
One Minute	No Depression (≥7)	41	47
	Mild Depression (4 to 6)	4	3
Five Minutes	No Depression (≥7)	43	49
	Mild Depression (4 to 6)	2	1

limited episiotomy in cohort B. It is noteworthy that ten percent of the cases in the restrictive group (n=5) required episiotomy conversion. This was due to the fact that the fetal heart patterns were not reassuring and the second stage of labor was prolonged significantly. This discovery implies that the restrictive group had a very low rate of conversion to episiotomy, along with a reduced occurrence of maternal complications such as significant perineal pain and significant perineal laceration.

The study's findings revealed that primigravida patients had a higher probability of preserving an intact perineum when an episiotomy was conducted solely when considered necessary. Previous research comparing the results of routine and restrictive episiotomy is concordant with these results¹¹. There were no statistically significant differences between the groups with respect to average age, gestational age, birth weight, or the second stage of labor, according to the analysis. In line with Saxena et al's findings, there was no observed association between maternal age and the occurrence of episiotomy or tears in both study groups¹². Comparing the two groups' analyses of perineal length—which included 429 women and followed a methodology similar to that of Carroli G et al.—found no statistically significant difference in average perineal length¹³.

No statistically significant difference was found between the two groups when it came to the average duration of the second stage of labor: 64.90 minutes for cohort A (restrictive episiotomy) and 70.07 minutes for cohort A (routine episiotomy). Additionally, Clemons et al. found no statistically significant relationship between the frequency or duration of episiotomy and the duration of the second stage of labor¹⁴.

Tears occurred in 14% (n=7) of the routine group and 22.22% (n=10) of the restrictive group when the two groups were compared for vaginal and paraurethral tears. Eltorkey et al and Azar et al observed comparable results, indicating that anterior lacerations were more prevalent in the group that had limited use. When compared to the restrictive group, the routine group had n-13 cases (26%) of patients who experienced an extension of episiotomy^{15,11}. On the other hand, the restrictive group had n-07 patients (15.55%) who experienced a perineal tear. In addition, the research carried out by Saxena and colleagues in an Indian setting demonstrated that the utilization of restrictive episiotomy resulted in a statistically significant reduction in the number of perineal lacerations that the patients experienced.

In the routine episiotomy group, all 50 subjects (100%) required suturing, whereas in the restrictive group, only 20% (n=9) needed suturing, primarily for perineal and paraurethral/vaginal tears. The study conducted by Carroli G et al reached a similar conclusion, stating that the use of restrictive episiotomy led to a reduced need for suturing when compared to its routine use¹³.

The need for analgesia immediately following giving birth was significantly lower in the restrictive group, with 22.22% (n=10) of cases requiring analgesics, compared to 50% (n=25) in the routine group. Carroli et al also reported less severe pain measures and reduced analgesia requirement with restrictive episiotomy¹³.

The routine group had a higher rate of complications (n=3, 6%) compared to the restrictive group (n=1, 2.22%). However, there was no statistically significant relationship between the type of delivery and healing complications. Both the Argentine trial and Carroli et al's study yielded similar results, showing no statistically significant disparities in healing complications between the two groups^{16,13}.

The neonatal outcomes exhibited no disparity between the two groups, as evidenced by 8.88% (n=4) NICU admissions in the restrictive group and 6% (n=3) in the routine group. Saxena et al also found no statistically significant disparity in neonatal outcomes between the two groups¹².

To summarize, this study provides evidence that implementing a policy of limiting

episiotomy has a beneficial impact on the occurrence of perineal lacerations, leading to a decrease in maternal health complications.

The findings of this study are consistent with previous literature advocating restrictive episiotomy. A Cochrane review by Carroli et al. demonstrated that restrictive episiotomy significantly reduces posterior perineal trauma and need for suturing without increasing severe vaginal tears.¹⁷ Similarly, Hartmann et al. reported no neonatal benefit with routine episiotomy, supporting selective use.¹⁸ In our study, reduced analgesia requirement and lower suturing rates further reinforce these findings. However, slightly increased anterior vaginal tears in restrictive group have also been reported in studies by Eltorkey et al., suggesting a trade-off that remains clinically acceptable.¹⁹ Overall, our results align with current international guidelines recommending restrictive episiotomy practices.²⁰

5. CONCLUSION

The results of this study provide substantial evidence suggesting that the immediate outcomes that follow the utilization of a routine episiotomy are not superior to those that are achieved through the utilization of a restrictive approach. Indeed, routinely employing episiotomy can have adverse effects, as it may subject certain women to surgical incisions and result in more harm than if they had experienced less injury.

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